BioLEAGUES®
Integrating Medicos...Incubating Research !!!!

4th International Conference on Food and Nutrition
23rd - 24th September 2021 | Singapore

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Food and Nutrition

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Theme: Immunity, Nutrition and Covid-19

Organized By

USFN Universal Society of Food and Nutrition
Universiti Malaysia Kelantan Faculty of Agro-based Industry
UCSI University Faculty of Applied Sciences

Association With

AFSTi Empowering the Food Professional
Caribbean Association of Nutritionists & Dietitians
International Association of Food and Nutritional Sciences IAFANS
Indonesian Public Health Nutritionist Association

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UNIVERSAL SOCIETY OF
FOOD AND NUTRITION

4th International Conference on
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" Immunity, Nutrition and Covid-19"

Singapore

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UCSI University | FACULTY OF APPLIED SCIENCES

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NUTRITION AND NATURAL HEALTH SCIENCES ASSOCIATION

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BioLEAGUES Worldwide

Preface

This book reports the Proceedings of the ***"4th International Conference on Food and Nutrition"*** held on ***September 23rd -24th , 2021*** organized by ***BioLEAGUES Worldwide***.

The publishing department has accepted more than 180 abstracts. After an initial review of the submitted abstracts, 157 papers were presented at the conference and were accepted for publication in the Conference Proceedings. The topics that are covered in the conference include Food Processing and Technology, Immunity and Infection, Food Safety and Security, Nutrition Education, Good nutrition to prevent COVID19, Public Health Nutrition, Food Chemistry etc. We would like to thank all the participants for their contributions to the conference and the proceedings.

Reviewing papers of the **4th ICFN 2021** was a challenging process that relies on the good will of those people involved in the field. We invited more than 15 researchers from related fields to review papers for the presentation and the publication in the **4th ICFN 2021** Proceeding. We would like to thank all the reviewers for their time and effort in reviewing the documents.

Finally, we would like to thank all the proceeding team members who with much dedication have given their constant support and priceless time to bring out the proceedings in a grand and successful manner. I am sure this **4th ICFN 2021** will be a credit to a large group of people, and each one of us should be proud of its successful outcome.

4th ICFN 2021

From BioLEAGUES Director's Desk…

On behalf of **BioLEAGUES Worldwide**, I am delighted to welcome all the delegates and participants around the globe to the ***"4th International Conference on Food and Nutrition"*** which is going to be held on **23rd and 24th September 2021.**

This conference will revolve around the theme ***"Immunity, Nutrition and Covid-19".***

It will be a great pleasure to join with Doctors, Research Scholars, and physicians all around the globe. You are invited to be stimulated and enriched by the latest innovations in all the aspects of Food and Nutrition while delving into presentations surrounding transformative advances provided by a variety of disciplines.

I congratulate the Chairperson, Organizing Secretary, Committee Members, coordinator BioLEAGUES and all the people involved for their efforts in organizing the **4th ICFN 2021** and successfully conducting the International Conference and wish all the delegates and participants a very pleasant conference.

A. Siddth Kumar Chhajer
Director
BioLEAGUESWorldwide

Welcome Message from Conference Chair

Food and Nutrition are integral part of human life. Instead of differentiating food which provides energy to the body from nutrition , nowadays we club together as nutritious food. Since the present day consumers are more health conscious, they know the importance of nutrition in human body. Intake of only calorie rich food is insufficient to keep someone healthy unless proper nutrition is also added to the food. Changing lifestyle due to present day hectic work schedule has necessitate the importance of nutritious food. COVID -19 Pandemic has also changed the world altogether. A number of immunity booster products have been found very effective.

In this backdrop, 4th International Conference on Food and Nutrition -2021 is going to be held in Singapore on 23-24 September, 2021. This conference will create a platform to understand various aspects of Food and Nutrition and the related topics in a better way.Interaction with the Food and Nutrition industries, Academicia and Regulators will clarify lot of issues associated with the Food and Nutrition industries. This conference will also provide a good platform to understand the global scenario.

Through a series of interactive panel discussion, keynote address , the conference will deliberate on various issues and challenges in Food and Nutrition industries , innovation, new technologies and global trend.

I would request the participants to make the best use of the platform by sharing knowledge and information. Key management personnel and decision makers will enrich the conference with their vast expertise and crucial insights.

With best wishes,

Dr. Pradip Chakraborty
Chairman of the 4th International Conference on Food and Nutrition -2021 &
Former Director
Food Safety and Standards Authority of India
Ministry of Health and Family Welfare,
Government of India
Mob:9953689010
Email : pradipchakraborty91@yahoo.com

Welcome Message from Conference Co-chair

Foods contain nutrients that are essential for our bodies to function. Food and nutrition plays a major role in promoting and upholding good health, preventing chronic diseases, speeding recovery from injuries and enhance immunity. Furthermore, foods that contain natural antioxidants counteract the harmful free radicals, promote immunity and prevent infection. In this context, BioLEAGUES Worldwide has timely opted to organize **4th International Conference on Food and Nutrition (4th ICFN–2021)** during September 23rd & 24th, 2021 at Singapore. 4th ICFN–2021 aims to bring together the renowned researchers, scientists and scholars to exchange ideas, to share their innovative findings to present sophisticated research works and to discuss hot topics in the field and share their experiences on all aspects of food and nutrition science. In this event, a wide-ranging scientific program consisting of keynote speeches, invited talks and scientific oral as well as poster presentations will be scheduled. The summit offers a valuable platform to create new contacts and collaborate with international researchers and organizations working in the field of food and nutrition science.

I believe that it's a right decision to make virtual e-conference in this global pandemic condition to have the online deliberations and interaction with the eminent personalities from the different countries. I am sure, the presentations focus on the role of food and nutrition in sustainable development of human health and emphasis on their applications in immunology, biotechnology, control and prevention of diseases including Covid-19. I hope the discussions of this conference will give an opportunity to all the academicians, students and industry people of food sciences and exchange their ideas and experiences to draw meaningful conclusions.

Finally, I wish 4th ICFN–2021 a grand success and appreciate the efforts of the organizing committee in making this remarkable event.

Dr. Mohammed Arifullah

Regional Representative **|** UMK International (UMK-I)
Universiti Malaysia Kelantan
Locked Bag 100, Pengkalan Chepa
16100 Kota Bharu, Kelantan, Malaysia.
Office: 609-9477485; HP- 601-116124467
Email: aurifullah@umk.edu.my

Welcome Message from Organizing Secretary

Dear all respective researchers,

It is a pleasure to welcome all participants, eminent speakers, and guest from all over the world to the 4 th International Conference on Food and Nutrition. We are proud to announce that this conference is being conducted along with the cooperation of the Universal Society of Food and Nutrition, Faculty of Agro-Based Industry Universiti Malaysia Kelantan, and Faculty of Applied Science UCSI University.

4th International Conference on Food and Nutrition has chosen "Immunity, Nutrition and Covid-19"as the theme. The COVID-19 pandemic that has spread rapidly and extensively worldwide since late 2019 has had profound implications for food security and nutrition. However, an international event such as this conference ensures that there are no boundaries to share our findings in research related to the conference theme.

I would like to thanks all as your contribution will make this conference happening and successful.

Best regards,

Ts. Dr. Siti Nuurul Huda Mohammad Azmin
Secretary of the 4 th International Conference on Food and Nutrition,
Faculty of Agro-Based Industry,
University Malaysia Kelantan Jeli Campus, Kelantan Malaysia.

Welcome Message from Joint Organizing Secretary

We look forward to welcoming all the great scientists, academicians, researchers and others who are in the field of Food and Nutrition industries to the 4th International Conference on Food and Nutrition 2021 under the theme "Immunity, Nutrition and Covid-19". This is our first ever innovative virtual and hybrid conference, which provides a great opportunity for all to explore more on the latest advancement in food science technology while staying safe at home during the COVID-19 pandemic. With the event going virtual and hybrid this year, we are optimistic that the virtual format will allow our global community to come together beyond the barriers of distance, space, and time.

The virtual and hybrid conference would inspire you with a perspective of scientific breakthroughs and cutting edge therapeutics in food and nutrition. This conference is also promised to grant delegates extensive prolific networking opportunities for professional and personal growth. We are certain that all the delegates will find this conference stimulating, interesting, rewarding, and meaningful.

We are looking forward to an excellent meeting with the great scientists, academicians, researchers, and others from different countries around the world and sharing new and exciting updates on food and nutrition, which will be held in Singapore, from 23rd to 24th 2021, and I'm sure that it will take you on a really amazing journey to a new meaning of connecting people and communication.

Dr. Vaidehi Ulaganathan
Organizing Secretary of 4th ICFN 2021
Lecturer
Faculty of Applied Sciences
UCSI University
Malaysia

From BioLEAGUES CEO's Desk…

It is indeed a privilege to acknowledge and thank all the supporters and organizers of the "***4th International Conference on Food and Nutrition***", who contributed greatly to organize the conference successfully.

I would like to acknowledge and thank the Chief Guest for his/her valuable contribution in the ***4th International Conference on Food and Nutrition.***

My special thanks to all our Special Guests who so graciously accepted our invitation to participate in the conference. I also wish to acknowledge and thank the sponsors of the conference whose financial support was extremely grateful.

I would like to specially thank our Advisory Committee Members from various Organization whose continuous support have helped us plan and execute the conference successfully.

I am highly indebted to the contribution given by all the Scientists, Doctors, Research Scholars, physicians sand students to the conference.

Mr. R. B Satapathy
CEO
BioLEAGUES Worldwide

Keynote Speakers

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Pharma-Nutra Transition: A New Model in Food-Nutrition Industry

Dilip Ghosh, PhD, FACN
Nutriconnect, Australia

Abstract

In the past decade, the world has witnessed the explosive growth of a multi-billion-dollar industry known as functional foods/nutraceuticals/phytomedicines. Nutraceuticals appear to be of benefit in both the treatment and prevention of disease. Nutraceuticals often possess unique chemical actions that are unavailable in pharmaceuticals. The human has been using food bioactive and/or herbal medicine for healing purpose from the beginning of human civilization. In recent times, use of evidence-based nutraceuticals for healthcare has increased steadily all over the world although it was neglected for decades by Western societies. However, the gaps in relation to the safety, claimed efficacy, and quality of natural products used as herbal medicine, nutraceuticals, and ethnomedicines are being realized and addressed by many companies in their product development framework. The combination therapy of pharmaceuticals and food bioactive in disease prevention and treatments is one of the most discussed topics in recent time. The transition of the pharmaceutical industry from its traditional business model is ongoing and interesting to see how their next blockbuster molecule could be derived through different routes. The transition from current 'high-risk, high-margin' business model to 'low cost, high volume' nutra business model is dependent on many factors.

An attempt is to be made in this presentation to re-define nutraceuticals/functional foods /phytopharmaceuticals as well as to summarize the application of nutraceuticals

Biography

Dr. Dilip Ghosh has received his PhD in biomedical science from India & post-doc from USDA-ARS, HNRCA at Tufts University, Boston. He is an international speaker, facilitator and author and professionally associated with Nutriconnect, & Trigonella Labs, Australia; Adjunct-Industry Fellow, NICM Health Research Institute, Western Sydney University, fellow of American College of Nutrition (ACN), and Adjunct Professor, KASTURBA HEALTH SOCIETY, Medical Research Center, Mumbai, India. He is also in editorial board of several journals.

Dr. Ghosh has published more than 100 papers in peer reviewed journals, numerous articles in food and nutrition magazines and books. His most recent two books, "Pharmaceutical to Nutraceutical: A Paradigm shift in disease prevention" & "Natural Medicines-Clinical efficacy, Safety and Quality" under CRC Press, USA has been published in 2017 & 2019. His latest book "Nutraceutical in Brain Health & beyond" is just published by Elsevier/Academic Press.

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Immunity Nutrition and COVID- 19

Meenakshi Bajaj
Former President, Indian Dietetic Association Chennai chapter, India.

Abstract
Dietary intake is crucial for a strong immune system to defend against wide array of deadly infections. Currently, a single stranded RNA virus known as Coronavirus is a challenge across the globe which causes respiratory disease called severe acute respiratory distress syndrome coronavirus (SARS-CoV-2)1. Global health care agencies have been accentuating the importance of balanced diet during the COVID- 19 outbreak and minimize its associated complications2,3. They have recommended to consume 2cups of fruits, 2.5cups of vegetables,180g of cereals and wholegrains,160g of beans and meat, salt restricted to 5g and 8-10 cups of water to meet the nutritional demand required for immune system2,3. Each nutrient plays a specific immune modulating role. Adequate intake of macronutrients, micronutrients (Vitamin A, B6, B12, Folate, C, D, E), trace elements (zinc, selenium, copper, iron, magnesium), resveratrol and phytonutrients of high ORAC value, are all vital to mount appropriate immune response through gene expression, cell activation, signaling molecules modification and antioxidants activity1,3-6. A diet enriched with prebiotics and probiotics helps to achieve healthy gut microbiota by regulating the immune system4,1. Inadequate status of nutrients are widespread, leading to a decrease in resistance to infections and as a consequence an increase in disease burden. Hence, a well-balanced diet, modulates immune system to fight and manage Covid -19 infection.

Biography
Meenakshi Bajaj, Registered Dietician with 28 years of experience in Clinical & Therapeutic Nutrition, Certified Bariatric & Critical Care Nutritionist, Diabetic Educator & Nutrigenomics Consultant, ESPEN LLL Certified in Renal, Onco., Obesity, DM, Metabolic Syndrome, EN, PN, Pulmonary, Pancreatic, Liver disease & Sports Nutrition, & Monash FODMAP trained Dietician (Australia). State Rank Holder & Best Outgoing Student (UG). Presently Dietician at The Tamil Nadu Govt. Multi Super Specialty Hospital, Chennai. NEC Member, Indian Dietetic Association, Convenor, NetProFAN Chennai Chapter & Treasurer, Assn of Diabetes Educators, (India). Author of Diet Metrics- Hand book

of Food Exchanges, 2019.BEST NUTRITIONIST 2019 from FITUP FEST, SADHANA AWARD,2020 & IAPEN Quality Awardee 2021

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

The Future of Protein – How and What We Will Grow, Make, and Eat Our Protein

Eugene Y. Wang

Sophie's BioNutrients Pte Ltd, Singapore

Abstract

The global population is projected to be over 10 billion around the year 2050. The consumption of proteins during the last few decades has seen dramatic increase in many regions around the world. At this rate, we will run into various issues if we continue to rely on conventional animal farming, agriculture, and even aquaculture. Global warming, deforestation, and lack of fresh water will make these conventional food production technologies more difficult and cost prohibitive. We need a new set of technologies to grow our proteins to cope with the looming crisis.

Among the new technologies to grow food, cell-based (or cultured) meat, seafood, and even plants make up the set of technologies that received most of the funding recently. However, there is still a lot of R&D work for these technologies to be commercialized. Microbe fermentation, on the other hand is more economical and available for immediate deployment. And among all the microbes we can use for food production purposes, microalgae really are superior when it comes to nutrition. They meet all the nutritional needs for human beings to lead healthy lives. On top of that, many strains can grow in sea water which will substantially help alleviate the freshwater supply issues.

And finally, how are we going to incorporate these new proteins into our food production? What are the possible ways to incorporate these new ingredients? How shall we look at these new sources of protein and new breed of plant-based foods?

Biography:

Eugene Wang grew up immersed in the vegetarian food business. Since 2010, his vision for launching Sophie's Kitchen, the first Plant-Based Seafood Alternative, has manifested into a viable category innovation lauded by the press and social media thought leaders. Sophie's Kitchen had won numerous recognitions from companies like PepsiCo and Chipotle. In 2019, Eugene took the alternative protein to the microorganism level and started another new venture in Singapore, Sophie's BioNutrients Pte Ltd. He won the grand prize of $1 million SGD at The Liveabilty Challenge 2019 with this new project and started his first protein fermentation facility in Singapore.

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Not all but use correct supplements for Corona Virus

Dr. Geeta Seth
Geeta Seth Nutritionist & Dietitian, Indonesia

Abstract

Since the time we are facing this big challenge of corona virus which has turned into one of the biggest Pandemic in recent times. We did have trouble identifying the role of nutrition as an immunity creator in corona virus. Well let's understand in short about Corona. It's basically a virus caused by acute respiratory syndrome. It directly affects the lungs creating symptoms like difficulty in breathing, cough, headache, fever, fatigue, loss of taste and smell. So initial takeaway was to give all sorts of food supplements which could help in the above status of symptoms. Ideally the droplets of this virus when exhaled from the mouth reach the other person's mouth, nose just by touching or being coughed at. Which means if 2 persons are close to each other physically then they can be infected. Also, it can create infection in a poorly ventilated space. Touching a contaminated surface may lead into infection too. T cells in immune system detect the virus. First the marker T cells recognize them and later the killer T cells destroy them. These all are basically proteins. So, the role of high protein posts an important part in diet

Vitamin C has proved to boost the immunity against Corona Virus. Other players are Zinc, B complex vitamins. Vitamin D supplementation has also proved to be very fruitful. Role of iron, vitamin A, vitamin E have also been identified. It's observed that if the body has enough of the above food supplements, then the capacity to fight against this Virus increases. A body going through metabolic syndromes is already I'm a compromised state, so that too has to be dealt with, eating a balanced diet loaded with micronutrients n calculated Macronutrients is the key to achieve good health. Stay away from obesity, maintaining the body parameters, blood parameters are to be looked after too. Sleep and exercise are other major players to increase immunity

Still the best way to deal with Corona Virus is to avoid it. Certain ayurvedic products do help for better breathing though. Over all foods play a major role in dealing with this Virus. Eat healthy and stay fit is the key.

Biography

Geeta Seth is a qualified nutritionist and dietician for the past 15 years. A two times gold medalist in the field of nutrition. She is also a qualified diabetes educator and diabetes pump trainer, specializing in the field of diabetes. She claims to have a normal blood glucose in diabetics with the right diet to avoid diabetes complications further. Also, with the right carbohydrate counting for type 1 diabetics according to their dose she gives the accurate diet to achieve normal glucose in the blood. Geeta has worked for various health institutes and hospitals and till date she does not have a single failure in terms of patients. As a speaker she has given nutritional services to various corporate institutes and schools.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Why Sustainability is not enough

Christoph Langwallner
Founder and CEO of WhatIF Foods, Singapore

Abstract

Christoph brings attention to the insufficiency of the term 'sustainability' and affirms we must move beyond sustainability, towards regeneration. Christoph also outlines the need to stop thinking in silos and to appreciate complex systems in order to truly regenerate.
After explaining what regeneration means, with its three pillars: Replenish, Restore, and Reconnect; Christoph shares his philosophy to bringing a better system alive, by identifying new profit pools for regenerative crops, rather than investing in technologies that merely sustains our broken system, for it to only spin faster and more efficiently.
The goal: to make a nutritious basket of regenerative foods – Foods that replenish the nutrients we need throughout our busy days, using forgotten crops that restore land and reconnect with the people who grow our food.

Biography

After two decades working for some of the biggest names in the agriculture and food industry and a successful entrepreneurial career as the founder of one of the leading food ingredients businesses in Asia, Chris initiated the Nutritional Paradox which aims to bring people from all walks of life to resolve the quadruple burden of hunger, obesity, micronutrient deficiencies and the destruction of our planet caused by the current food system.
Inspired to alleviate sustainably the Nutritional Paradox, WhatIf Foods was born, using science, technology, consumer insights and climate change resilient regenerative crops that grow economically on marginalized, degraded arable land to innovate familiar comfort foods.
Enthusiastically, Chris brings fair and inclusive business strategies, sciences, and remarkable people together to create nutritious products for a profoundly healthier planet, humanity and economy.

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Optimized Nutrition and a Healthy Immune System in the Fight against Viral Infection

Professor Dr. Shamala Devi Sekaran
UCSI University, Malaysia

Abstract

The interaction and relationship of our immune system and nutrition is intricately associated. Our food intake has an impact on the immune system and this occurs at various levels such as the physical barriers, our microbiome at all sites, on the innate as well as the adaptive system. The immune system plays a key role in our ability to fight infections and reduce the risk of developing tumors, autoimmune and degenerative disease. This design is influenced by an intricate balance, not just diet or specific nutrients but also by our lifestyles like sleep, exercise, and stress levels that primes our body to resist and fight disease. Impairment depends on the extent severity of malnutrition and also age at which nutritional deprivation began. To be effective our immune system must interpret the changes around us, respond appropriately, be able to differentiate harmless ones from dangerous ones and stop the infection before it establishes a foothold in the body. Nutrition is critical and associated deficiencies have been well documented. This presentation will examine how nutrition affects some aspects of our immune system, factors that depress our immune system, the role of the microbiome with specific references to viruses.

Biography

Shamala Devi A/P K C Sekaran is currently Professor & Deputy Dean Faculty of Medicine & Health Sciences, UCSI University. Main areas of research were Dengue, mainly diagnostics, clinical research and drug discovery/antivirals including natural products, viruses, bacteria, antibiotic resistance and mechanisms for drug development. Published over 250 papers with Wos citations of 4520, and a h-index of 36, received awards for kits developed and own over 20 patents, whereby, 3 kits were commercialized. Member panel for Selection for Top Research Scientists, Selection of new ASM Fellows Panel, Makna proposals panel, Newton-Ungku Omar Panels.

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Macro Cultural and Audience Trends influencing Health & Nutritional Marketing

Gillian Fish
6AM Agency, Australia

Abstract

True marketing magic is realised when brands connect to the inherent needs of their audiences, providing them a meaningful 'value exchange' – one that is mutually beneficial and advances the relationship between consumer and brand in a positive way.
Covid-19 has brought seismic changes to audience consumer behaviour globally, and thus it is vital for brands to get a clear understanding on the macro and micro trends influencing these cultural shifts and behaviour changes, during this time of continued uncertainty in order to for health and nutrition brands to remain relevant, connect and to survive and thrive during this time.
This webinar, titled *'Macro Cultural and Audience Trends influencing Health & Nutritional Marketing*, shared by Gillian Fish, CEO of The 6AM Agency, will cover 10+ top trends and recommendations to help brand holders deliver effective marketing and communications campaigns in the health and nutrition sector, driving desired business outcomes.

- Value shifts during COVID and how this has driven trends of note
- From B2C to B2H – reframing the definition of 'consumer'
- Wellbeing trends to infuse across brand communications
- Why 'Essentialism' is the new black when it comes to audience behaviour
- From insights to strategy – a tool to leverage sharp insights for successful campaigns

Biography

Gillian Fish is the Founder of specialist Wellbeing creative communications agencies, The 6AM Agency and Igloo. She is author of Good + Well: 25 World Experts Share their Secrets to Wellbeing (2017) and Resilience - Body.Mind.Soul. Wellbeing Learnings from a Pandemic (2020), and a regular speaker at local and international forums and conferences.

With nearly two decades of agency ownership specialising in Health, Wellbeing and Nutrition, Gillian is acknowledged as one of Australia's leading experts in integrated Wellbeing & Good Living communications across earned, owned and paid, having worked with some of the world's foremost brands in evidence-based wellbeing across raw material suppliers and finished goods brandholders, all within Health, Beauty, FMCG and Lifestyle including Organic, Sustainable, Complementary Therapies, OTC, Fitness, Nutrition, Food, Beverages, Retailers, Devices and Beauty.

With a deep passion and sense of purpose for Wellbeing & Good Living communications, Gillian founded The 6AM Agency in 2002. The agency is a thriving integrated creative communications agency with a heritage in earned, owned and paid, brought to market by some of Australia's best talent in strategy, creative, content, digital and public relations.

In a time of immense disruption across business, markets and audiences, the 6AM team gets what keeps clients awake at night and focuses only on what matters – smart strategy and implementation that delivers real business impact. Our team is passionate about doing great work, with purpose.

Gillian regularly speaks at conferences locally and internationally including Vitafoods Asia, Complementary Medicines Australia; Consumer Healthcare Products Australian, APAN and others.

Gillian sits on the Global Content Advisory Board with Vitafoods Global, on the Marketing and Ethics Sub-Committee for Consumer Healthcare Products Australia and the agency is a member of Public Relations Institute of Australia; Consumer Healthcare Products of Australia and Complementary Medicines Australia.

Sithra Paranjothy

Abstract

Food Safety is a shared responsibility by producers to consumers & government bodies, NGO's and Regulators. The major concern in this pandemic era is to reduce food safety concerns along the 'farm to fork' process. A successful food chain requires trust & transparency particularly in managing supply chain issues / interruption in this pandemic era. Early pandemic the supply chain was influenced by panic buying, border closures & food facilities malfunctioning but as the second year takes on this was more properly managed as have learned to plan according to requirement and lockdown phase. The best approach was to keep the 'food-chain' shorter where food is to be supplied to consumers directly where possible, mainly to keep the contact minimum at current situation. Importance is provided to Quality Control, Quality Assurance & implementation of respective food legislation along the food-chain. Quality Control focusing on product defect & Quality Assurance focusing on the food manufacturing safety system would ensure food quality is controlled from raw materials, in-process control & up to finished product including on shelf quality. Food legislation main objective is to protect consumers & food chain members particularly from food safety perspective – prevent adverse health effects, also provide relevant information to consumers via labelling & permitted advertising or claims. Implementation of food legislation mainly assist to establish an effective food safety system throughout the food chain. Legislation are updated when required to keep up with the research findings, studies results, development in food technology, emerging food-borne diseases and possible reported health effects. Established food safety systems & food legislations ensure consumers are protected and provided clean & safe food even in this pandemic era.

Biography

Regulatory Consultant with 14 years working experience, mostly focused on Regulatory Affairs, Quality Control & Quality Assurance. Currently also working on projects related to health supplements review & approval for Singapore.

Served in multi-national companies for 10 years now who is world leader in global food industry, It was then I was exposed the risk consumers face and the high responsibilities of the food industry.

Regulatory Affairs role embarked the food knowledge in me. Starting off by providing review & approval from regulatory perspective i.e. Country Compliance, Diet Suitability, Legal Declaration for APAC region. Also provide technical advice on legal, compliance, and scientific restraints to related business unit or other departments as when requested. Working within these roles gave me the chance to identify the needs of my company, design solutions and implement them, while maintaining an eye on minimizing cost (initiated by procurement), without compromising regulatory compliance and therefore customer satisfaction. Legislation differs from country to country particularly in APAC. My role ensures that food manufacturers & traders stay up-to-date with the vast array of legislation and standard-setting as it applies to their operation without compromising customer requirement where possible.

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Encapsulation of Probiotics with Other Bioactive Compounds in Foods to Boost Immune System during Covid-19

Dr. Gisoo Maleki
R&D Manager at Golrang Industrial Group, Iran

Abstract

TConsumer mindsets have shifted, and because of COVID-19, consumers will start taking more care of their body and specifically of their immune system. While the usual suspects of vitamin C, D, zinc etc. are touted to support immunity – one critically important component of immune health is probiotics. The health of the immune system is the top priority motivating the use of supplements and functional foods, with probiotics among the most sought-after ingredients consumers are looking to increase in their diet. Even when functional benefits are prioritized, consumers still desire real food taste. Therefore, the growing awareness of functional food products for imparting potential health benefits has focused on the incorporation of bioactive compounds such as essential oil, flavors, antioxidants, vitamins, minerals, natural extract, and prebiotics. The supplementation of these ingredients and probiotic cells may affect their preserving potential and organoleptic properties of food products, as well as the compounds and bacteria should remain in a metabolically active state during processing and storage. This speech focuses primarily on the advantages of co-encapsulation of probiotic bacteria with nutraceuticals and bioactive compounds such as omega-3 fatty acids, green tea extracts, curcuminoids, antioxidants, and prebiotics in a single delivery format. This article emphasizes that co-encapsulation of bioactive compounds and probiotic bacteria in a single product provides synergistic health benefits and enhances the bioactivity of individual components thus improve the adherence of probiotic bacteria to the intestinal wall during digestion. This process has convenience and cost advantages over microencapsulation of individual ingredients. The co-encapsulation process has also improved the storability of food products with a long-term stabilization of probiotic bacteria and bioactive compounds.

Biography

I received my PhD degree in Food Science and Industries from Ferdowsi University of Mashhad, Iran in 2018. I am currently working as a Research and Development (R&D) Manager of a confectionery company in one of the famous holding in Iran called “Golrang Industrial Group” with 87 companies. My

research background and interests are based on Food Technology and Innovation focusing on producing healthy and functional foods by application of hydrocolloids and encapsulation (Liposome and Chitosome), food fortification, edible coating, packaging (MAP) etc. I have several publications in these fields. I do research about formulation and nutritional aspects of products and ensure new product development within business objectives. I am able to focus on the development of novel processing and ingredient technologies to improve sustainable and high-quality nutrition across the food value-chain to put theoretical knowledge into food industry in order to enhance the community health level.

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Low Acoustic Power Density (APD) Ultrasound as a Physical Abiotic Elicitor-Effects On Nutritional Value And Functionality of Fresh Produce and Germinating Seeds

Prof. Dr. Hao Feng
University of Illinois at Urbana-Champaign, Urbana, IL, 61801, USA

Abstract

Power ultrasound (known as high-intensity ultrasound) in frequencies of 20-100 kHz and intensities of 10-1,000 W/cm2 as an emerging acoustic processing technology has been investigated for improving bioactive compounds in plants, including edible seeds, sprouts, fruits and vegetables. Our aim was to evaluate the effects of power ultrasound treatment (25 kHz) at low acoustic power density (APD) on the nutritional properties (i.e., amino acids, reducing sugars, total phenolic, lycopene, total carotenoids, and vitamins) and flour functionality (i.e., starch pasting properties and dough-mixing performance) of selected grains (e.g., red rice, oat groats, and whole wheat) and fresh produce (lettuce and tomatoes). In addition, activity of phenylalanine ammonia-lyase (PAL), a stress-related enzyme, was determined to ascertain the mechanism of secondary metabolites accumulation. Our study attempted to provide insights into the observed enhancement of health-promoting compounds in sonication-treated grains. The results from metabolite analyses showed that some plant metabolites, such as γ-aminobutyric acid (GABA), alanine, glucose-6-phosphate, succinic acid and other organic acids, were significantly increased after sonication during germination. The total phenolic compounds content and antioxidant capacities (DPPH· scavenging capacity) were also enhanced. The images of Environmental Scanning Electron Microscopy (ESEM) and 3D X-ray Micro-Computed Tomography (Micro-CT) showed the changes in the external and internal microstructures of the ultrasonicated grains, which indicated that the power ultrasound had cleaned the surface and created holes. The current challenges, limitations, and future applications of low APD ultrasound treatment for plant-based food production are summarized.

Biography

Dr. Feng is Professor of Food and Bioprocess Engineering and the Site Director of NSF I/UCEC Center for Advanced Research in Drying (CARD) at the University of Illinois at Urbana-Champaign (UIUC), USA. Dr. Feng's research focuses on high intensity ultrasound (power ultrasound) and its application in food processing and preservation, new physical and chemical treatments for enhancing the safety and quality of fresh and fresh-cut produce, plant protein based nano- and micro-structures for protection and delivery of bioactive compounds, novel deconstruction methods for biofuel and value-added product production from biomass, new extraction and separation techniques, and novel drying technologies. Dr. Feng is a member of the Institute of Food Technologists (IFT), the American Institute of Chemical Engineers (AIChE), and the American Society of Agricultural and Biological Engineers (ASABE). Dr. Feng has secured US$35.8 million as PI and Co-PI for his research program. He has published three books, 141 peer-reviewed journal articles, and 21 book chapters in the areas of new food processing innovation, ultrasound application, food safety engineering, and bioprocess engineering. In addition, Dr. Feng has given 62 invited talks and presented over 180 poster presentations at national and international scientific meetings.

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Bio-Farming for Better Soil Health, Nutrition and Profitability

Anurag Saxena
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Sanjeev Kumar
ICAR-National Dairy Research Institute, Karnal, India

Abstract

Over the last five decades the agriculture transformed from subsistence to intensive. In order to achieve higher yields, the different chemicals fertilizers were applied in the field. Pesticides, used to protect crops against insect pests, in food chain are potentially toxic to humans and have acute or chronic health effects. Such chemicals are banned for use in agriculture. This practice helped to improve the economic yield in short-term but in long-term after attaining yield plateau they degraded the soil quality, food and fodder nutritive values. To address the issues posed by intensive agriculture, there is need to adopt sustainable approaches. Bio-farming is an approach of farming, emphasizes on exclusion of harmful chemicals and fertilizers from food production system. This approach helps in building the soil fertility by improving the soil organic carbon, soil micro flora and fauna. Bio-farming also reduce the leaching of nutrients from soil to underground water. This leads to higher availability of nutrients for the food and fodder crops for higher quality produce with better nutritive values. The crops which produced under the bio-farming system fetches premium price in the market which helps to improves the economic conditions of the farming community and work for their upliftment.

Biography

Dr. Anurag Saxena is presently working as Principal Scientist at ICAR-National Dairy Research Institute, Karnal. Earlier he served as Head, ICAR- ICAR-Central Arid Zone Research Institute, Leh, (cold arid region) and Principal Scientist at ICAR-CAZRI, Jodhpur (hot arid region) for more than 25 years. His specialization is in the field of agriculture, food value chain, and bioinformatics. Skilled in project development, scientific writing, data analysis, and training for farmers. Experience in conducting plant trials, coordinating field teams and developing projects for international organizations. He has done commendable work in improving nutritional and livelihood security of desert dwellers.

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Ensuring Food Safety & Nutrition for Optimum Health

Milind Kokje
NuFFooDS Spectrum, AgroSpectrum; India

Abstract
People in both developed and developing nations have been experiencing many changes in their way of living as well as eating habits. Within the supply chain which is increasingly becoming more and more complex in the globalized market, adulteration is the key food safety issue. Regulatory bodies are challenged with major food safety and nutrition issues resulting from changes in the food production and supply along with environmental changes. In order to address public health issues related to food safety and nutrition holistically, there is a need to look beyond a specific area of focus and understand the bigger picture i.e., aggregating the entire range of stakeholders and their interlinked value-adding activities, originating from agriculture, processing, distribution and retailing together on a level-playing field.

Biography
A journalist with 40 years of multi-media experience. Currently Chief Editor of NuFFooDS Spectrum, AgroSpectrum, and BioSpectrum (India and APAC edition published from Singapore).

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Innovative Nutrient-Dense Meals to Sustain Global Health: The Tailored Functional Recipe [TFR] Concept

UNIVERSITY OF WESTMINSTER

Dr Ihab Tewfik

University of Westminster, London, UK

Abstract

The detrimental impact of climate change and water poverty allowed hunger and food insecurity to expand globally. Today, one billion people struggle with hunger, this figure has significantly amplified under the covid-19 pandemic. Malnourished communities are less productive, and susceptible to long-term chronic diseases. Hence, one of the core strategies to reverse food insecurity is to develop tailored food recipe (TFR) that is not limited to elimination of hunger but extend to design and engineering of food that exceeds disease prevention by improving bioavailability of nutrients and sustaining health promotion. The optimization of these functional food recipes is based on local agriculture produces which are sustainable and effective in maintaining healthy nutritional status in target populations. With three different models of optimised TFR meals (iAtta, S-Cool and Amtewa), our research team has improved the quality of life in cancer patients receiving palliative care in India, enhanced school nutrition programme in Ghana, and delayed the progression of HIV to AIDS among HIV patients in Nigeria. The TFR concept has transformed the conventional nutrition intervention programmes in different contexts and now able to assist global food security strategy through a sensible role to reinforce universal economy, enhance preparedness of UN system and make substantive contributions to strengthening global capacity for responding to health emergencies in most food insecure regions.

Biography

Ihab is registered Public Health Nutritionist and Fellow of the Royal Society of Public Health, UK. He is a renowned intervention specialist in public health and Fellow of the Higher Education Academy-UK with 28-year teaching and research experience in higher education. Ihab has delivered numerous keynote addresses at international conferences focusing on nutrition transition and the rise of chronic diseases in developing countries. As Fellow of the Royal Society of Public Health (FRSPH), Ihab's international research agenda expanded to 12 research projects with UNICEF in aspects of public health nutrition intervention and three Food Standards Agency (FSA - UK) projects.

Plenary Abstracts

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Industry Trends in Nutrition and FSSAI Regulations

Pradip Chakraborty

Sr. Advisor, Centre for Public Health & Food Safety (CPHFS); Former Director, FSSAI, India

Abstract

Food Safety and Standards Act has been implemented in India on 5th August, 2011. Before that, there were eight different acts under different ministries of the Government of India to regulate domestic and imported food products in India. There were no regulations on Proprietary and Novel foods. Health Supplements and Nutraceutical products were considered as Proprietary or Novel foods. FSSAI finally notified Health Supplements, Nutraceuticals, Food for Special Dietary Use, Food for Special Medical Purpose, Functional Food and Novel Food Regulations,2016 which was effective from December ,2016. The regulations specify essential composition of the product, additives, compliance of specific labelling requirements, in addition to the provisions of the Packaging and Labelling Regulations, Contaminants, Toxins and Residue Regulations , and Health Claims, if any. The regulations also clarified meanings of the eight categories of the food products. The regulations contain eight schedules of list of permitted ingredients and additives. Food Business Operators need not to obtain pre approval if their product comply with the regulations . For Health Claims, pre-approval is required from the FSSAI.

Biography

Shri Pradip Chakraborty, a Food Technologist from Jadavpur University, have rich experience of more than 35 years in Food Processing, Quality Control, Project Management and Export of Processed Food Products, besides setting up of a Food Park.

Shri Chakraborty was Director, Food Safety and Standards Authority of India (FSSAI). He has written a number of technical articles on food safety and related topics for various national and international journals. He has translated Food Safety and Standards Act into Bengali. All India Food Processors Association conferred him AIFPA Presidents Special Award for the year 2013

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Properties Evaluation of Biodegradable Food Packaging Consisting Of Cocoa Pod Husk Incorporated With Kenaf

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Abstract

The replacement of synthetic with eco- friendly packaging films could reduce the ecological problem as well as increase the potential of bio-material wastes to be utilized. Thus, the objective of this study is to develop a biodegradable bioplastic by using cocoa pod husks incorporated with the kenaf fibres (at five different ratios) as well as to study the reinforcement properties of the developed bioplastic. Properties, including drying time to be bioplastic, water content, and water absorption with and without the addition of the kenaf fibre were evaluated. The comparison of physicochemical properties of bioplastic made from cocoa pod husk with bioplastic made from cocoa pod husks

incorporated with the kenaf fibres will be conducted. This study found that the bioplastic with the combination 50% of cocoa pod husks integrated with 50% of kenaf fibres shows the lowest water absorption. The moisture content of 50% ratio of both materials showed an acceptable result (6.92%), and the time is taken for the bioplastic to be dried only for five days. The tested properties proved that the bioplastic from the ratio of 50% of cocoa pod husks and 50% of kenaf fibres is suitable as the novel of food packaging materials. The improvement of bioplastic made of cocoa pod husks incorporated with kenaf fibres has the potential to be exploited as a source for bio-plastic production in a food container and food wrapping.

Biography

Ts. Dr. Siti Nuurul Huda Mohammad Azmin is a senior lecturer at Product Development Technology Programme, Faculty of Agro-Based Industry, Universiti Malaysia Kelantan (UMK), Jeli Campus, Malaysia. She received her Bachelor's and Master's degree in Chemical Engineering from Universiti Malaysia Pahang (UMP) and PhD from Universiti Teknologi Malaysia (UTM). Her main research areas are chemical product design using computer-aided tools and model-based approach, property modeling, property estimation, optimization, herbal/plant extraction and emulsion. Her current research project is on designing of chemical and cosmetic products (lip balm, ointment, peel off mask, lotion, emulsions) and packaging (bioplastic). Besides, she is a member of 'Board of Engineers Malaysia, BEM', a member of 'Malaysia Board of Technologist, MBOT' as graduate and professional technologist; and professional member of 'Universal Society of Food and Nutrition'.

4th International Conference on
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23rd – 24th September 2021

Covid-19 and School Canteen food provision: Association with weight status among Aboriginal children in Negeri Sembilan, Malaysia

Vaidehi Ulaganathan
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Abstract

Malnutrition is a common problem among Aboriginal children due to their poor food environment especially due to financial constraints during Covid-19. Schools may be dealing with new challenges and requirements to help reduce the spread of coronavirus; however, the quality of food provision still need to be sustained as it is strongly related with the children's weight status. The study aimed to determine the association between school food environment and weight status of aboriginal children in Negeri Sembilan, Malaysia during recovery movement control (RMCO). This was a cross-sectional study conducted in three Aboriginal primary schools in Negeri Sembilan involving 193 aboriginal children aged 7 to 12 years old between July to September of 2020. A validated aborigine school food environment semi-quantitative food frequency questionnaire (ASFE-SFFQ) was used to assess the food choices, dietary energy, macronutrients and micronutrients intake. WHO AnthroPlus software was used to calculate BMI-for-age (BAZ), and all the data was analysed using IBM SPSS Statistics software. The Pearson correlation, weighted kappa and Cohen's kappa showed an acceptable agreement and correlation between the nutrient intakes of ASFE-SFFQ and three days of non-consecutive diet recall. Most of the students were in normal weight status (61.1%), small proportion in thinness (4.1%), while others were overweight (18.7%) and obese (16.1%). For dietary energy, macronutrients and micronutrients intake, the energy (t=-2.526,p=0.012), carbohydrates (t=-2.347,p=0.020), protein (t=-2.237,p=0.026), fats (t=-2.675,p=0.008), saturated fats (t=-2.255,p=0.025) and phosphorus (t=-2.028,p=0.044) were significantly associated with the age groups but did not correlated with gender. There were minimal gender and age effects on the weight status. Vitamin A intake was significantly and directly correlated with BAZ after adjusted for age and gender (partial r=0.143,p=0.048) of aboriginal children in food choices, dietary energy, macronutrients and micronutrients intake. In conclusion, ASFE-SFFQ is useful as a basic tool for further dietary assessments among aboriginal primary school children in Malaysia. The results showed that the

provision of the school food should focus on food rich with micronutrients for an optimum weight status among Aboriginal school children.

Biography

Dr Vaidehi Ulaganathan is a senior lecturer attached to the Faculty of Applied Sciences, UCSI University located in Cheras, Kuala Lumpur. She has a Doctoral Degree in the field of Clinical Nutrition (2018) from Universiti Putra Malaysia. She initiated several studies among secondary school students to promote healthy eating and lifestyle and healthy food choice at home and school canteen to prevent chronic diseases in adulthood. Recently in 2021, she received the Global Nutrition Early Career Scholar Award in the field of Clinical Nutrition from American Society of Nutrition supported by Mondelēz International.

CONTENTS

CONTENTS

CONTENTS

CONTENTS

SL.NO **TITLES AND AUTHORS** **PAGE NO**

CONTENTS

SL.NO **TITLES AND AUTHORS** **PAGE NO**

CONTENTS

SL.NO **TITLES AND AUTHORS** **PAGE NO**

CONTENTS

CONTENTS

SL.NO **TITLES AND AUTHORS** **PAGE NO**

CONTENTS

CONTENTS

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CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

SL.NO **TITLES AND AUTHORS** **PAGE NO**

CONTENTS

CONTENTS

CONTENTS

SL.NO **TITLES AND AUTHORS** **PAGE NO**

CONTENTS

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ABSTRACTS

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Enhanced Survival of Spray-Dried Microencapsulated *Lactobacillus Rhamnosus* Gg in the Presence of Maltodextrin and Fructooligosaccharide as Wall Material

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PK Nema
Department of Food Engineering, National Institute of Food Technology Entrepreneurship and Management (NIFTEM), Kundli, Haryana, India.

Abstract
The survival of spray dried *Lactobacillus rhamnosus* GG (LGG) preparations encapsulated in maltodextrin (MD) - fructooligosaccharide (FOS) was examined. The feed solution composed of probiotic bacteria and various combinations of wall material such as MD : FOS (20:0; 20:2.5; 20:5). The spray drying inlet and outlet temperature was maintained as 170±5 °C and 75±5 °C respectively. After spray-drying small microparticles were recovered and further characterization was done. Physicochemical properties (moisture content, water activity and colour), and viability (CFU/gm and survivability of cells in simulated gastrointestinal digestion) were examined. The results showed that MD : FOS (20:2.5% (w/v)) produced the best results. The final product had acceptable moisture content (3.50%) and water activity (0.30). The l*, a* and b* values were 97.94, -0.34 and 2.716 respectively. The final microencapsulated probiotic powder was having 10^9 CFU/gm. Thus, the spray drying using above

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combination as drying agent produce probiotic powder with high viability levels after drying and with good physicochemical parameters.

Practical significance: The incorporation of FOS into the encapsulant formulation prior to spray drying improves the survival of LGG during simulated gastrointestinal digestion.

Biography

Dr. P. K. Nema (Professor) and Sachin Kumar (Research Scholar)
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Post-harvest Technology and Practices of Tropical Fruits: A Review

Tengku Halimatun Sa'adiah Binti T Abu Bakar
Universiti Malaysia Kelantan, Malaysia

Abstract

Demand of tropical fruits are increase in the global trade due to contain many mineral, nutrients and vitamin that required for human body. Unfortunately, in maintaining the quality of tropical fruits as the demand of world fresh produces become more challenging due to 40-50 post-harvest losses have been reported. Most of tropical fruit is perishable due to its climacteric nature, which decreases the quality and shelf-life. Hence, use of appropriate post-harvest technologies and practices play a significant roles to extend the crops shelf life in order to maintain the tropical fruits quality and reduce post-harvest losses. This review provides of an overview of various postharvest practices and technologies used to maintain the tropical fruit quality. Although the review on post-harvest technology has been intensively studied, however the focus on tropical fruit warrants more research.

Biography

Mrs Tengku Halimatun Sa'adiah T Abu Bakar is a lecturer at Faculty of Agro-Based Industry, Universiti Malaysia Kelantan (UMK), Malaysia. She graduated from Univesiti Teknologi MARA, Malaysia with Diploma, Bachelor and Master of Plantation Management. Her main research field are agriculture extension and social science.

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Food and Nutrition
23rd – 24th September 2021

Screening of Microplastics Contaminants on Cockles and Mussels' landings at West Coast Peninsular Malaysia

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Universiti Sains Islam Malaysia (USIM), Malaysia

Abstract

Currently, the Covid-19 pandemic has highlighted requisite role of plastics in daily life as usage of wrappers and food packaging being extensively used prior to food and packages deliveries. This triggered the disposal of the plastic waste therefore pose environmental threats when the plastics enter the food web and cause food toxicity. Degraded plastics that are less than five millimeters are called microplastics. Therefore, within this size range, filter feeders such as cockles and mussels are likely to ingest microplastics that sunk at the ocean's floor unintentionally. Hence, the samples of cockles, mussels and seawater samples were collected at different anthropogenic sites in Tanjong Karang, Selangor and Sebatu, Melaka, Malaysia to screen potential microplastics contaminant on the shellfish landings. Identification of potential microplastics were done using light microscope (magnification: 10x or 40x). Findings showed microplastics presence in the tissues of cockles and mussels with characteristics of thin, elongated filaments, irregular fragments and spheruloid-shaped pellets. Types of microplastics identified using FTIR analysis **(**4 cm^{-1} resolution**)** includes polypropylene, polystyrene and polyethylene. Information generated in this study are useful as food safety management and environmental monitoring health measures.

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Keywords:
Plastics, cockles, mussels, filter feeders, food safety

Biography:
Siti Nabilah Karim is a student in Food Biotechnology program at Universiti Sains Islam Malaysia whose study is focused on contextualizing the recent advanced food biotechnology and food safety. Her previous undergraduate research involves developing nutritional food product and evaluating the physicochemical and sensory attributes of the food. To build up her research career, her current research is focusing on detection of microplastics on shellfish landings at West Coast Peninsular Malaysia as part of food safety management.

Utilization of Banana Peels for Production of Edible Antimicrobial Active Food Packaging Film

Malvika
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Dr Nilambari Dave
PhD student Foods and Nutrition, Saurashtra University,Rajkot ,India

Abstract

Fast development in the field of agriculture and food technology has held to production of large amount of industrial residues without proper treatment. So, their disposal becomes serious environment issue for developing countries. In the present study, this issue was focused and agro industrial banana peel waste was utilised for production of value added , industrially important product such as antimicrobial edible active food packaging films. The study was conducted at Foods and Nutrition department of Saurashtra University Rajkot Gujarat – 365601 .Banana peels of (*Musa acuminata*) variety was procured from Saurashtra region of Amreli from which a novel product like antimicrobial edible active food packaging film was prepared. Biochemical, microbiological, sensory and statistical tests were performed for developed product. Significance of study was tested by T- test at 5 % level of significance with a t value of antimicrobial edible film was 2.45. After the complete analysis, it can be concluded that the present study was successful trial for utilization of agro waste for production of value added products. As conclusion , the produced films has promising applications for food packaging industry because of its high tensile strength and solubility or biodegradability .They can serve as an innovation to current food packaging industry because of their edible and antimicrobial nature.

Biography

Ms.Malvika, PhD Scholar in Foods and Nutrition ,Graduated from Delhi University in Food Technology ,Diabetes Educator and Nutrition Consultant from 8 years ,specialized in insulin pumps and C.G.M.S (Continuous Glucose Monitoring System).She qualified UGC NET in 2012 .She worked as a visiting Assistant Professor in Government Dairy Science Amreli ,Gujarat.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Development and Evaluation of Functional Cookies with incorporation of Banana Peel Powder rich in Phytosterol

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Vasantha Kumari
Assistant Professor, Department of Nutrition and Dietetics, Mount Carmel College, Autonomous. Bengaluru, India.

Abstract

Introduction: Around 35% weight of the fruit is occupied by the Banana peel and, approximately 36 million tonnes of it are generated per year, and it has been observed that about 33% urban and 25% rural Indians are hypertensive. Hence Banana peel was used to develop a new food product and its physical properties and proximate analysis and antioxidant property was performed. The aim of the study was to quantify the phytosterol and develop cookies from the Unripe-Banana Peel and assess the quality characteristic of Banana Peel powder and the cookies. The methodology for the same was that *Dwarf cavendish* banana peel was dehydrated in hot air oven and powder were formed from it. GC-MS Analysis was performed on the unripe banana peel powder to identify the phytosterol and the powder was used to incorporate to form cookies. The physical properties of both the powder (of ripen, semi-ripen and unripen Peel) and cookies were studied. The proximate analysis was performed, along with the estimation of Potassium. The nutritional properties- Antioxidant property by DPPH assay of the cookies were analyzed. The data collected was analyzed by SPSS method. The results revealed that the mean score for water absorption of the ripen banana peel powder, semi-ripen and for un-ripen banana peel powder was (4.1±0.10), (4.57±0.05) and (2.07±0.05) respectively, swelling index mean score was observed to be highest in the ripen banana peel powder (6.13±0.06) and the bulk density of the ripen banana peel powder, semi-ripen banana peel powder and unripen banana peel powder was (0.46±0.00), (0.51±0.01) and (0.50±0.00) respectively. Banana peel possess different phytosterols like ß-Sitosterol, campesterol, stigmasterol, cycloeucalenol, 24-methylene cycloartenol, and cycloartenol. The sensory evaluation selected the V2 as the best accepted formulated cookies with 20g of Banana peel incorporated in it. The physical Properties showed that the diameter of the control T0(38±1.00) and variant V2(39±1.00), thickness of T0(5.83±0.75) and V2(7.26±1.15) and spread ratio T0(6.55±1.00) and V2(5.42±1.00). It can be observed that the spread ratio of T0(6.55±1.00) and V2(5.42±1.00) and thickness was negatively correlated (-0.975). The proximate analysis showed that peel have moisture,

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protein, fat, crude fibre, total carbohydrate and energy content as 11g, 3.24g, 42.5g, 20g, 36.6g and 542.15kcal respectively and potassium with 52600mg being the most abundant mineral. Anti-oxidant analysis showed that V2 have IC Value 49.8 and have high anti-oxidant capacity in it. Hence, it can be concluded that as there is high content of phytosterol is present in unripe banana peel, and the optimal daily dose which can be considered to help in lowering the LDL levels are 2g to 3g of either phytosterol or phytostanols, a functional food product with incorporation of Banana peel will help to reduce the LDL cholesterol levels in a person, and high level of Potassium will also enhance the anti-hypertensive property of the cookies and avoid the elevation or chances of other related comorbidities. The formulated cookies can be consumed by people who have other co-morbidities as it is high in dietary fibre and complex carbohydrates.

Biography

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Formulation of *Vitex Negundo* Based Pasta

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S. Jasper Jane Sweety
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Abstract

Vitex negundo (Linn.) is one of the common plants used in traditional medicine and re-ported to have variety of pharmacological activities. It is a large aromatic shrub with typical five folio late leaf pattern. It is an important source of such natural drugs. It is a reputed medicinal herb and its parts have been employed as a traditional cure in Asian systems of medicine for a variety of disease conditions. The major objective of the study is to dehydrate the selected, to formulate the value added products and to find the acceptability of value added products. The *Vitex negundo* was cleaned, sun dried, pound into fine powder and packed in air tight container. There are three different pasta prepared in various proportions such as standard (V0), 1gm sun dried *vitex negundo* powder incorporated Pasta (V1) and 2gm sun dried *vitex negund* powder incorporated Pasta (V2). The 9-Point Hedonic Scale was used for the Sensory evaluation. The result revealed that the appearance, colour, flavour and Texture of the V1 show the best whereas the taste of V2 variation shows the best. Thus I conclude that among the three variations 1gm sun dried *vitex negundo* powder incorporated Pasta (V1) is highly acceptable.

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Biography:

Dr. J. Gracia Working as Assistant Professor in Department of Food Science and Nutrition and as a Coordinator in Department of Food Processing and Preservation, The American College, Madurai. Having a Teaching experience of 71/2 years and training experience as a Dietitian, Fruit and Vegetables Preservation and Nutrition. Received Young Scientist Award in the year 2020. 1 year of exposure as Research Assistant in ICMR Major Research Project. Have guided 6 UG, 9 PG project and 4 M.Phil Thesis. Published research papers in 10 Journals and 5 publications in proceedings. Presented around 25 oral, 24 poster presentation. Have organized 2 programs and acted as a resource person in 9 various events. Have been a PG Board Member in Department of Nutrition and Dietetics, Sadakathullah Appa College, Thirunelveli.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Valorization Strategies for Utilization of Citrus Waste Leading to Zero Waste: A Review

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Department of Food Engineering, National Institute of Food Technology Entrepreneurship and Management, Sonipat, Haryana, India

Abstract

Fruits belonging to the genus Citrus and family Rutaceae is one of largest class of fruits which are extensively grown, processed and consumed all over the globe. Citrus fruits are well known for their appealing taste, flavor, aroma and phytochemical components. After processing into juice, a large quantity of citrus waste is generated leading to environmental pollution, depletion of dissolved oxygen level in contaminated water and health related hazards. The amount of citrus waste worldwide exceeds approximately 110–120 million tons annually. However the effective utilization of citrus by-products could be beneficial in context to circular economy generation through extraction of essential oils, pectin, nutraceuticals, macro & micro nutrients, ethanol and bio fuel generation. Therefore, instead of calling it as waste, these could be a good resource of significant valuable components, in this way encouraging the zero-waste theory. Zero waste theory permits the efficient valorization of the agro-waste to value added products that could be utilized as natural antioxidant, colorants, additive, preservatives and many more. Different green extraction techniques such as microwave extraction, ultrasound assisted extraction, supercritical fluid extraction and combinational methods are used for extraction of bioactive antioxidants from citrus peel. Present paper reviews the state-of –the-art dealing with valorization of citrus fruit wastes using various green extraction technologies. Finally on the basis of reviews,

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recommendations for utilization of various byproducts of citrus fruits using green technologies have been proposed.

Biography

Dr. Anupama Singh has over 27 years of academic experience in the agri-food processing sectors. Her research interest includes Bio waste utilization, Sustainable food processing novel technologies, product development and value addition. Dr. Singh has received various accolades, recognitions and fellowships and awards at the national and international levels, including the prestigious Norman Borlaug Fellowship by USDA/ICAR and the National Fellow Award by ICAR, India.

Photograph

After a sterling career, spanning over 25 year, at GB Pant University of Agriculture & Technology, Pantnagar, Dr. Anupama Singh is currently Professor and Head at Department of Food Engineering, National Institute of Food Technology Entrepreneurship and Management (NIFTEM), India.

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Indian Ultra-Processed, Pre-Packaged Snacks - A Comparison of Energy, Fat, Sugar and Sodium Content to Global Nutrient Profiling Models

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Meena Godhia
Department of Foods, Nutrition & Dietetics, S.V.T College of Home Science, S.N.D.T. Women's University, Juhu Campus, Mumbai, India.

Abstract

FSSAI is considering the use of a Front-of-Pack Labelling (FoPL) model to encourage mindful consumption of ultra-processed, pre-packaged food. Food labels of 434 savoury snack products sold in the Indian market were studied for their calories, fat (total fat, saturated fat and trans-fat), sugar (total sugar, added sugar) and sodium levels (per 100g). Nutrient content of the products was compared to thresholds established by 3 global Nutrient Profiling Models – WHO Nutrient Profile Model (SEAR), UK Front-of-Pack Traffic Light Labelling and Chile's Front-of-Pack Warning Labels.

Median energy (kcal) was 521 kcals/100 g. Total fats was high (29.1 g), followed by saturated fat (9.6 g) and sodium (558 mg). Trans fat was absent, while total sugar (2.8 g) and added sugar (0.5 g) content was minimal. Most products (98.6% and 97.9%) were above the thresholds for energy (per 100g), established by WHO (230 kcal) and Chile (275 kcal) respectively. 94.9% products were above the WHO threshold of total fat (8.0 g) and 83.18% products were is the red zone of the UK model (>17.5 g). Majority products were above the WHO, UK and Chile thresholds for saturated fat respectively – 85.9% (2.6 g), 67.3% (5.0 g) and 72.3% (4 g). Similarly for sodium, 80.4% products were above the WHO thresholds (250 mg), 97.7% were in the red zone of the UK model (1.5 g salt) and 70.7% were above the Chile thresholds (400 mg).

Most Indian snacks are HFSS (high fat, sugar and sodium) as per global thresholds. Mandatory front of pack labelling, coupled with reformulation guidelines must be brought into effect immediately.

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Keywords :
Ultra-processed foods, pre-packaged foods, food labels, nutrient thresholds, HFSS (high fat, sugar, salt), front-of-pack labelling

Biography:
Rashida Vapiwala is the founder of LabelBlind®, India's 1st Food Rating System. She holds a Master's degree in Foods, Nutrition & Dietetics and is a PhD scholar studying the current scenario of the packaged food & beverage industry and consumer behaviour. She is awarded the Junior Research Fellowship by the University Grants Commission, India and the Dr K.U.Naram award for a distinguished performance in academics at post-graduate level.
Rashida has been felicitated with respectable certifications, like QMS 9001:2018 Internal Auditor, Micronutrient and Food Fortification Training Program (PHC, GAIN), Food Safety Supervisor (FSSAI) , Nutrition Research Methods (St John's Research Institute, Bangalore) and more. She has multiple research publication and is a speaker on many business and scientific platforms.

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23rd – 24th September 2021

Effect of Storage Conditions and Packaging on Indian Beet Spinach leaves in Retaining the Quality and its Functional properties.

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Abstract

Green leafy vegetables are rich in vitamins and minerals therefore are an important part of Indian diet. It is consumed by all sections of society. They are highly perishable in nature and records around 25% of post-harvest loses every year. Therefore it is required to be stored in proper condition to extend its shelf life. This study was done to assess the effect of storage and packaging on Indian Beet Spinach (Beta vulgaris cv. Pusa Bharati) leaves for retention of its functional properties. The crop was packaged in Low Density Polypropylene (LDPE; perforated and non-perforated) and banana leaf and stored further in three different storage condition- ambient (16±0.77°C, RH 49-53%), zero energy cool chamber (12.16±0.66°C, RH 92-95%) and cold storage (8.95±0.785°C, RH 85-89%) for 9 days. The quality parameter including physiological weight loss (PLW), firmness, total soluble solids (TSS) and organoleptic properties as well as functional properties such as ascorbic acid, total carotenoids and chlorophyll content were estimated at regular interval for 9 days. The results revealed that quality deterioration is lower in ZECC without packaging with shelf life of 6.5 days followed by cold chamber with 5 days and ambient condition with 2 days. ZECC showed the least PLW having good firmness and texture and also lower reduction in TSS, acidity, ascorbic acid and carotenoid was recorded in ZECC during the period of the experiment. Extending shelf life through ZECC, a low cost storage system can provide nutrition to underprivileged and undernourished individuals that cannot consume costly nutrition supplement. The results also revealed among all the combination of packaging and storage

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conditions, LDPE (non-perforated) in cold chamber showed least deterioration in quality and functional properties in comparison to other treatments.

Keywords:
Indian beet spinach, functional foods, zero energy cool chamber, storage, ascorbic acid, physiological loss in weight

Biography:
Srishti Chitranshi is a Ph.D. Scholar in Horticulture in Amity Institute of Horticulture Studies and Research, Amity University Uttar Pradesh, NOIDA, UP, India. She has done her post-graduation in horticulture post-harvest harvest technology with score of 9.27 cgpa. She keeps interest in healthy and nutritious foods. Her focus is on maintaining the quality and nutrition of fruits and vegetables with low cost techniques. The subject is vast and new technology research afoot; therefore she is continuously educating herself and eager to learn more.

Reception of and awareness about food colours among urbanized citizens in Kolkata, India.

Dibyangana Misra
Jadavpur University, Kolkata, India.

Abstract

While food continues to be one of our basic needs for surviving, colour in foods or coloured food is often met with scepticism by the public. The type of food colours used in high-selling brands is mostly regulated, but the same cannot be claimed for the local brands. Most people are not very aware about the legislations regarding food colours, probably, which is why they are uncomfortable with consuming coloured food products. Owing to sustainability in food, more emphasis is being put into using organic food colours, which are considered to be less harmful. Nevertheless, what really makes the public recognize whether the food colours are organic? A Google form was designed based on the aforementioned ideas and shared with 100 participants of different age groups and occupations based in Kolkata, India, who answered the questions on a Likert scale. This paper aims at discussing the methodology of the survey, along with the findings and the suggestive steps that could be taken to create more awareness about food colours among the general public. This work would be substantial in understanding the current perception of food colours in the general public and help devise ways in which it can be improved.

Biography:

I am a third year undergraduate student of Food Technology and Biochemical Engineering at Jadavpur University, Kolkata, India. Currently, I am doing a research internship with 'Project Cybele- an Integrated Geopark', a food sustainability project, based in Mauritius (till 31st August). I am very interested in food processing and preservatives and am willing to do more research in these areas, in the near future. In my free time, I also enjoy exploring healthy food and have hence opened an Instagram page called 'Foodit.' to share my knowledge with a wider audience.

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Comparison of Individual Quick Frozen (IQF) and conventional freezing of paneer

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Magdaline Eljeeva Emerald
Sr. Scientist, National Dairy Research Institute (SRS), Bengaluru, India

Abstract
An attempt was made to develop an Individual Quick-frozen paneer by freezing the paneer cubes with liquid nitrogen and comparing that with the conventional frozen paneer. For quick freezing of paneer, a cryogenic container was designed. Three different types of freezing viz., conventional, freezing with LN_2 vapors, and freezing with LN_2 dip were used to for freezing of paneer. The process parameters were optimized by using a one-way randomized block design by SPSS statistical software based on the time taken to reach the core temperature of -15°C, the size of the paneer cube, thaw time, thaw loss, and sensory attributes. The optimized normal paneer sample was 2 cm^3 frozen with LN_2 vapors within 2.46 minutes. The thawing by hot water was selected as the time taken for thawing was 2.1 minutes for the IQF paneer. The microstructure of the paneer analyzed by scanning electron microscope confirmed that the average pore size of the IQF paneer was 5.6 µm and 65.6 µm for the conventionally frozen sample at 1000X magnification. The physicochemical, microbial, textural, color attributes, and sensory analysis of the samples were monitored at the one-month interval, revealed that the IQF samples had a better quality when compared to the conventional frozen sample even after 9 months of storage.

Biography:
Myself V.Vijaya geetha, working as Assistant Professor in College of Dairy Technology, Sri Venkateswara Veterinary University. With a Ph.D. in Dairy Technology from National Dairy Research

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Institute, Karnal, and a proven record in educating students for 11 years and having industrial experience for 7 years have presented 9 posters, 30 seminars and conferences attended, 6 student tours conducted, the member in several committees at University, conducted 15 training programs to farmers, 6 radio talks, 9 popular articles, and 9 research articles.

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Development and Performance Evaluation of Percussion Based Machine for Non-Chemical Disinfestation of Milled Products

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Abstract

In order to develop a non-chemical disinfestation method for stored milled products, a machine was designed on the principle of physical disturbance i.e. percussion using AUTO-CAD software. The mechanics of percussion based machine mainly includes impact action. The rotor consists of two parallel plates which are attached with the help of various bars/pins. It is designed in such a way that material is guided to pass through these two horizontal plates through the opening in the upper plate. The whole assembly of rotor rotates at a high speed and the material strikes with a huge impact with these bars. The whole lot of material is passed through this rotor section. Speed of the rotor can be varied from 0-2800 rpm, so that it could be used for both milled as well as grains, guiding the material towards the outer periphery of the rotor due to centrifugal action. The developed machine was evaluated for milled products (wheat flour, maida and besan). The developed machine process parameters i.e. Operational speed (OS) of 2000-2800 rpm and Number of passes (NOP) (1-3) were optimized using response surface methodology (RSM). Optimization was done aiming at minimum maximum mortality % with minimum change in size, moisture content and colour. The optimized machine process parameters obtained for disinfestation of milled products, the optimized machine

parameters obtained were 2800 rpm with single pass for wheat flour; 2600 rpm OS with two pass for maida and 2650 rpm with single pass for besan In order to evaluate the efficacy of physical treatment, storage period and packaging material, the samples developed at optimized condition were stored in different packaging material (Steel, PET containers and PP bags) under ambient condition and were monitored for change in quality attributes at 15 days interval. Treatment followed by storage days and packaging material significantly affected ($p<0.05$) the quality attributes (moisture content, colour change, insect incidence, insect infestation, overall acceptability, protein, fat, carbohydrate content and microbial load of the samples. The machine treated samples packed in steel containers were adjudged to be the best in retaining quality of stored product at the end of three months. Overall the developed machine was found to be highly effective in controlling the stored grains and milled product insect-pests.

Biography:

Dr Mohammed Shafiq Alam, *Ph.D.* (Processing and Food Engineering), Punjab Agricultural University, Ludhiana. Presently, working as Principal Scientist-cum-Incharge of AICRP on Post-harvest Engineering and Technology, DPFE, PAU, Ludhiana, having 21 year's of working experience. Successfully handled and completed 30 Research projects on different aspects of Post Harvest Engineering and Technology. Supervised 8 Ph.D, 21 M.Tech and 18 B.Tech students as supervisor and published more than 250 papers in reputed national/ international journals etc. Editorial board member of many National and International Journals. He has received many prestigious awards and recognitions for his outstanding achievements.

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Development of Edible Starch Based Film cum Paper as a Food Serving Material

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Abstract

An investigation on utilization of corn starch and rice flour was undertaken for development of edible film. Various combinations were taken with corn starch, CMC, MC, LG, and glycerol. The combination of starch (3-8%), rice flour (3-22%) CMC (0.5%), MC (0.5%), glycerol (5- 30%) and LG (5%), the surface of paper prepared by 5 and 8% starch was non-uniform. The cracks were present due to lack of cross-linking. The glycerol of 15% showed good binding properties. The elasticity of the paper was increased. The cracks were reduced, but the surface was found to be very sticky. To remove stickiness the rice was incorporated. The packaging film with the incorporation of rice flour was found to be having rolling tendency and dryness can be observed with the crumbling effect. The edible paper prepared from the combination of starch (3%), rice flour (22%), sodium carboxymethyl cellulose (0.5%), microcrystalline cellulose (0.5%), glycerol (20%), liquid glucose (5%), and xanthan gum (1%) was showing the good physical, structural properties. The formed paper was having smooth and even in nature, texture was good which binds the components to form the single edible paper. The final physical and structural properties of the edible paper were found to be 138 ± 2 µm in thickness, having more solubility which is more degradable in nature. The results of SEM revealed that edible paper is rough, non-uniform and slightly heterogeneous in nature. The X-ray diffraction study confirmed that edible paper is amorphous in nature.

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Biography:

Dr Preeti Birwal holds graduation (2012) in Dairy Technology from ICAR-NDRI, master (2014) in FPEM from NIFTEM and Ph.D. (Dairy Engineering) from ICAR-NDRI. Recipient of MHRD (2008), Nestle India (2009), GATE (2012-14), UGC-RGNF (2014-18).

She's working in non-thermal technologies, fermented beverages, packaging, and technology of millet-based beer. Delivered lectures as **resource person** and invited speakers at various state and private platform. Received **outstanding reviewer** of the month by CRNF. AUTOCAD 2D & 3D certification. Received **Outstanding Scientist Award**" in the 7th International Scientist Awards on Engineering, Science, and Medicine.

She has more than **100 publication** including, **11 international CRC-Taylor and Francis edited book**, 11 book chapters, about 28 popular articles, and 5 conference papers and 56 abstracts, 2 editorial opinions to her credit. She is serving as **external examiner** for various Indian state agricultural universities. She is also serving as **editor and reviewer** of several journals.

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Scope of Edible Starch Based Paper in Food Industry

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Dr. Preeti Birwal
Department of Processing and Food Engineering, Punjab Agricultural University, Ludhiana, India.

Abstract

The evolution of the different kinds or types of food packaging materials is highly influenced by varied consumer preferences. A good packaging material must help the food product to extend its shelf life, should help in processing activity without harming the nutritional qualities of the food, preservation of the same. Paper-based packaging is a versatile and cost-efficient method to transport, protect and preserve a wide array of items. It is engineered to be sturdy, yet lightweight, and is customizable to meet product- or customer-specific needs. The nearest and cheapest available source of paper is newspaper which will be used in the packaging and wrapping of the hotel foods for the parcel of the Idli, Dosa, rice items, and used by the street vendors. The ink which is used will be having some toxic substances, so there will be a huge scope for edible paper in the market which helps in construction of safe future. Several biodegradable food packing papers has come in the market, but they are not edible. The consumer attention towards the manufacturing and usage of the biodegradable packaging materials is increasing day by day in recent years, as the usage of synthetic packaging materials lead to invention of these packaging materials. Trial on Starch-based film has been conducted in laboratory and significance results were found.

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Biography:

Ms. Chaitradeepa G Mestri holds graduation (2017) in B Sc Horticulture from CoH Sirsi- UHSB, Karnataka, Masters (2019) in Food Technology from Jain University and pursuing Ph.D. (Food Technology specialization Food packaging) from M S Ramaiah University of Applied Sciences.

She's a PhD scholar presently working on biodegradable food packaging material. Served as a assistant professor on contractual basis for more a year in government institute. She has published 2 book chapters as a coauthor

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Effect of Manothermosonication (MTS) on quality and microbial load in Kinnow Juice

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Abstract

Ultrasound is one of the emerging technologies of microbial inactivation that has been recommended as an alternative to heat treatments but the germ-killing efficacy of the process is comparatively low under atmospheric pressure and room temperature. Therefore, most investigators have tried to expand the efficacy of the process, either by increasing cavitation strength or by designing combined processes to improve the lethal effect. Mano-thermo-sonication (MTS) is a food conservation technology that efficiently combines the effects of pressure, heat and ultrasonic waves at an ideal level to reach the desired levels of food safety and stability while ensuring minimum adverse effects on quality of food material. It is a evolving technique proved for its enzyme inactivation and antimicrobial action preventing food spoilage without changing organoleptic properties of foods subjected to it. The objective of this work was to evaluate the effect of manothermosonication (MTS) on microbial inactivation in kinnow juice. The treatment was given with different combinations of conditions viz. temperature (40-80°C) and pressure (100- 400) kPa and time (5 – 20 min) at frequency of 40 kHz. The experiments for manothermosonication were planned in Box-Behnken design of Response Surface Methodology using design expert Software version 8.0.2 (Stat ease Inc., Minutesneapolis, USA, Trial Version) for the optimization of the parameters. The samples were evaluated for the effect of manothermosonication on microbial load, physicochemical as well as sensory score of kinnow juice. The result showed that juice samples treated at optimized conditions i.e. 60.40°C, 400 kPa of pressure for 5 min showed the

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maximum microbial inactivation. The results of this study showed that MTS treatment may be a promising alternative to traditional thermal juice processing methods.

Keywords:
Ultrasonication, pressure, temperature, microbial inactivation, quality

Biography:
Dr Sandhya, *Ph.D.* (Processing and Food Engineering), Punjab Agricultural University, Ludhiana. Presently, working as Senior Scientist in the scheme AICRP on Post-harvest Engineering and Technology, DPFE, PAU, Ludhiana, having 15 years of working experience. Her field of specialization is Post Harvest Technology with research interest in Image processing of agricultural produce. Published more than 20 papers in reputed national/ international journals etc. She has received many prestigious awards and recognitions for her outstanding achievements.

4th International Conference on
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23rd – 24th September 2021

Effect of Okara Particle Size on Fiber-Enriched Bread Quality

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Faculty of Food Science and Technology, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia

Abstract

Consumption of high-fiber food products has shown a growing trend over the past few years due to their effectiveness in protection against obesity and metabolic syndrome. Nevertheless, incorporation of fiber can negatively affect product characteristics. Manipulation of particulate size has been associated with regulation of functional properties of fiber, hence quality of final products. Therefore, in this study, okara flour at different particle size ranges of less than 600 µm (composite flour), 425-600 µm, 300-425 µm and 106-300 µm were incorporated at 10% (w/w) in bread making. Bread made without added fiber is considered as Control. Findings demonstrated that incorporation of okara produced bread with lower loaf volume, darker color and greater firmness. Large okara particles resulted in bread with higher loaf volume, L* values, moisture content and lower firmness. Incorporation of okara reduces the degree of bread retrogradation. This study concludes that blends of okara having different particles sizes is required in obtaining product with acceptable quality.

Keywords:

Okara, fiber, particle size, bread, loaf volume.

Biography:

Dr Nor Afizah Mustapha is a Senior Lecturer in Department of Food Technology, Faculty of Food Science and Technology, Universiti Putra Malaysia. Her research work focuses on improvement of fiber and starch functionalities for applications in food systems, via fermentation and physical techniques. Her works explore the relationship between molecular transformation, enhancement in functionalities and utilization in food systems. Her current works also focus on conversion of food processing by-products into high value-added ingredients.

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Stevia and other plants as a sweetener: A comparison

Latiffah Karim
Universiti Sains Islam Malaysia (USIM), Malaysia

Abstract

Stevia is a well-known sweetener used as a sugar substitute in food industry. It comes from Stevia rebaudiana plant's leaves. It has a naturally sweetening substance called stevioside and rebaudioside A which are being used mostly for those who want to lose weight as it has a low calorie. Common product that has stevia incorporated on them are chewing gum, diet soda and sugar-free products. Stevia has a lot of benefit other than low calorie as it come from a plant source. Stevia is not the only sweetener that come from plant as xylitol, monk fruit sweetener, curculin, are also from plant. The objective of this study is to compare stevia with other plant-based sweetener which are xylitol, monk fruit sweetener and curculin derived from Cucurligo latifolia plant in term of nutritional composition, processing method, regulatory perspective, and benefit of uses.

Biography:

Latiffah is currently works at Faculty of Science and Technology, Universiti Sains Islam Malaysia. Her research focuses on enzyme biotechnology and sustainable sugar from agricultural wastes.

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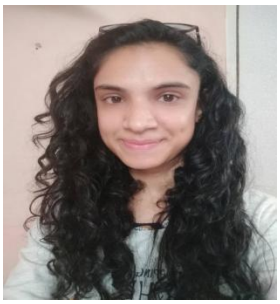
Interaction of Water with different Food components



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Abstract

Food ingredients can be divided into two main categories: macrocomponents and microcomponents. Macrocomponents consist of water, proteins,carbohydrates [both simple and complex] and lipids while microcomponents include minerals, vitamins, colorings, flavorings, preservatives, texture modifiers[gums and hydrocolloids], emulsifiers etc.Water is the main components of drinking water, beverages and most of foodstuffs.Water is used as a good medium to cook foods. In addition, steam is the basicworking medium of heat (as a feed for boiler) and power engineering in food processing.Water content of fresh fruits, vegetables, meats, and sea foods exceeds 50%.In food chains, water is not just a medium for reactions, but is also an active ingredient used to control reactions, food texture, and physical and biological behavior. Food may pick up moisture from the environment or lose moisture to the environment during storage. The percent of loss of fresh foods can be significantly reduced by controlling their water activity during storage.Water interacts with other food components by means of polar, hydrogen-bonding, and hydrophobic interactions. These interactions change the properties of water.In a simple assembly process, there can be interactions among macrocomponents , e.g., water-protein , protein-protein , protein –lipid, carbohydrate- lipid, carbohydrate –protein , and water- lipid interactions. In a similar manner there can be interactions between microcomponents, microcomponents and macrocomponents, and macrocomponent complexes. Conceptually, such interactions can be promoted by processing treatments, storage conditions, time, type of packaging , and the source of ingredients.

Keywords

ingredients, macrocomponents,microcomponents,texture,water activity

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Biography

I am pursuing my doctorate degree in Food Science and technology with research project entitled "Isolation,characterization and mitigation of biofilm formers for shelf life extension of farm fresh produce".Food technology is my area of interest from past 7 years.

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Impact of ozone treatment on brown rice germination and changes in quality characteristics.

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Guru nanak dev university, Amritsar, India.

Abstract

COVID-19 has emerged as one of the greatest pandemics. The disease is highly contagious which affects the immune system. Enough evidence exists among nutrition sector to suggest the role of certain nutrients in regulating the immune system. Nutritional food such as functional and nutraceutical foods prepared from germinated flour of cereal grains may help in combat with this situation. Traditionally chemical methods is used to improve brown rice germination have major limitations including being environmentally unhealthy and time-consuming. Application of ozone on seed germination has attained greater significance and its various potential applications in the food industry have started emerging. Ozone is a strong antimicrobial agent as well as a germination enhancer. Ozone, in limited quantity, enhances seed germination rate along with nutritional value Pandiselvam et., at (2019). Germination is one of the most effective way to minimise antinutritional factors along with enhance nutrition quality of the grains pal et., al. (2016). Quality changes in germinated brown rice determined by study of Physical characteristics, chemical and biological changes in before and after treatment in brown rice. This study mainly discusses the impact of ozone treatment on brown rice germination and quality changes accompany by the treatment.

Biography

Swasti Mudgal, I did my B.Sc.(H) from Delhi university in food science and technology. Currently, I am pursuing Ph.D. from Food Science and Technology Department, Guru Nanak Dev University, Amritsar. I have got prime minister scholarship in 2019. I am working under the eminence guidance of Dr. Narpinder singh. My core area of research is cereal science.

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Nutritional Quality and Sensory Properties of Nutribar Prepared Using Watermelon Seeds

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Abstract

Despite their high nutritional value and therapeutic benefits, watermelon seeds (WS) are generally considered agro-waste and are spit out. Watermelon seeds are potential sources of high proteins, vitamins, minerals and fats. However, the seeds are not routinely eaten with the pulp, they are simply thrown away. Hence, its recommended that it is the demand of time to explore its commercial potential. With this background, the present study was aimed to develop a watermelon seed bar (WSB) and to determine proximate content, free fatty composition and also sensory evaluation in-order to create awareness of its potential nutritional values and increase its consumption. The ingredients of WSB are watermelon seeds (100gm), jaggery (50gm), coconut flakes (15gm), sesame seeds (10gm) and ghee (5gm). Peanut bar (PNB) was also developed by replacing watermelon seeds with peanut which was used for comparison purpose. The proximate screening indicated that protein (15.72%) and

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carbohydrate content (57.91%) was high in WSB compared to PNB. The overall sensory evaluation showed that there was no significant difference between WSB and PNB.

The free fatty acid composition showed that linolenic acid, stearic acid and lauric acid of oil extracted from WSB were 51.15%, 10.65% and 6.49% respectively, while oleic and palmitic acid extracted from PNB were 38.11% and 14.62% respectively.

The study revealed that WSB is a rich source of protein and omega-3 fatty acid, which serve nutritional and medicinal purposes. It is therefore, advised that watermelon fruit be consumed along with the seed or seed can be used for nutraceutical purpose in oer to fully benefit from its nutritional and medicinal values.

Biography:

Myself Kavya Sekar studying M.Sc. Clinical Nutrition and Dietetics, 1 st year at Sri Devraj Urs Academy of Higher Education and Research Centre in Kolar. My area of research interest is development of nutraceutical food product by using underutilized crops, seeds, fruits and vegetables which is affordable to all groups of people and give them high nutritional quality and also provides health benefits including the intervention and treatment of a disease

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Novel Nutraceutical Ingredients for Modern Food Processing

Mahendra Mehta

Vice president -Food& Nutrition, Chemvera specialty -Food & Nutraceutical, India

Abstract

There is huge increase in Global Demand & Consumption of Processed Food. With increasing Consumer awareness regarding Food Nutrition Best value for Money is expected from Processed Food. Most of the Nutraceutical including various Vitamins being Heat labile get lost during Food processing. These Natural Nutrients (Ascorbic Acid, Beta carotene, Tocopherols, Vitamin B Group) are required to be added to the Processed food product in desired quantity. This technical presentation will focus on the importance of these Nutrients in Human Life and How to add these Nutrients effectively in the day to day consumed Processed Food like

a) Beverage- Protein, herbal extract , Vitamin & Mineral Fortification.
b) Confectionary- Multivitamin in HBC/Toffee/Lollipop
c) Instant Dry mix with Vitamin & Mineral Fortification.
d) Ice-Cream with Vitamin, DHA , Omega 3 and Probiotic & Prebiotic.
e) Sport drink with whey protein, Nutraceutical extract, Vitamin & minerals.
f) Nutraceutical Alcoholic Beverage with Herbal extract , fruit Juice cranberry .
g) Novel Nutraceutical Food Product with Innovative Ingredients (like Plant Sterol and Conjugated Linoleic Acid)

The presentation will contact detail of health benefit of all nutraceutical ingredient added to above food segment. The process parameter and clinical data of health benefit of market product with example will be presented.

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Biography

Mahendra Mehta is a Senior Food Technologist. Holds the degree of Food Technology from ICT (UDCT) & also a degree in Chemistry from the University of Mumbai.

He has been associated with food & Nutraceutical industry for past 33 years while working with leading corporate houses in the field of nutrition & food ingredient. He developed range of flavoring & products development concept particularly in confectionery, Biscuit, sport nutrition, high protein supplement, infant food, Soya based Beverage & supplement foods, Multisport performance formula & variety of specialized foods for specific medical conditions & weight management. Work in major company like Merck , Bayer , Symrise , Roha , IMCD …etc.

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Formulation and Acceptability of Blended Weaning Mix by Addition of Banana Peel Powder with Pearl Millet, Wheat and Ground Nuts

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Abstract

Weaning food is most important part of infant life stage. the most infants begin to eat complimentary semisolid foods. In emerging country like India hunger is one of the major problem due to lack of micronutrients like vitamins and minerals especially vitamin A, iron and zinc.

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Cereal gruel is the common supplementary foods in low-income countries, and it is usually low in energy and protein, thus increase in protein-energy malnutrition among deprived weaning aged children. In this perspective, the current study was conducted to formulate the weaning mix by partly adding banana peel powder with malted pearl millet, malted wheat flour, groundnuts with banana peel powder. Three weaning mix formulations were prepared by incorporating 5%, 10%, 15% of banana peel powder and by adding malted pearl millet, wheat flour and groundnuts, and were designated as WM001, WM002, WM003, WM004. The formulations were compared with non-germinated pearl millet, wheat flour and groundnut without banana peel powder weaning mix which was used as control sample (WM001). The three formulated weaning mix were compared with control sample with respect to their sensory attributes. Among three weaning mix accepted sample and control was analysed proximate composition by using association of official analytical chemist (AOAC) methods. The data revealed that among three weaning mix sensory acceptable formulated weaning food was WM002, which can be prepared by mixing 35% of pearl millet, 35% wheat flour, 5% sugar, 20% groundnut, 5% banana peel powder. With respect to proximate analysis sensory accepted weaning mix contain 10.52% protein, 64.7% carbohydrate, fat 15.40%, energy 443.4 kcal and in control sample 11.28% protein 64% carbohydrate, fat 15.77, energy 439 kcal respectively, there was no much difference was observed between control and accepted weaning mix sample with respect proximate analysis.

Key Words
Weaning Mix, Pearl Millet Wheat Flour, Sensory Attributes.

Biography
My self Rakshitha. N second year MSc student Department of Clinical Nutrition and Dietetics SDUAHER Kolar. My area of research in community nutrition and i have done project on weaning food formulation. I have presented a poster in the national e-poster competition on occasions of World Food Day 2020 conducted by department of Clinical Nutrition and Dietetics, SDUAHER and University of Horticulture Science Bagalkot.

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Development of Microgreens Masala Mix and Assessment of Organoleptic Properties of Products Prepared By Incorporating Microgreens Masala Mix

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Abstract

Microgreens have gained increasing popularity due to higher concentrations of bioactive components which are important for human health. Their shelf life can be extended by dehydration. Incorporating the mix of microgreens as flavor enhancers amplifies the nutritive value of prepared food products. This study was designed to develop microgreen masala mix, incorporate it in products, assess their organoleptic properties, and evaluate the Free radical scavenging activity of the standard and the most acceptable variation. Four varieties of microgreens -Spinach, Fenugreek, Coriander, and Amaranthus were cultivated, harvested, and dehydrated. A microgreen mix was prepared using 5 gms each of the dehydrated greens. A standard masala mix was prepared using different spices and Microgreen masala mix was prepared by replacing the standard masala mix with microgreen mix at 10%, 15%, and 20% (variation1,2,3). Masala rice and masala fry were prepared using standard masala mix and microgreens masala mix (Variation1,2,3). Sensory attributes of the developed products were evaluated by 15 semi-trained panelists using 9- point Hedonic scale. Mean sensory scores for overall acceptability for Masala rice and Masala fry indicated variation-1 (10% replacement)
of masala rice and Masala fry was comparatively higher than variations 2 and 3. The free radical scavenging activity of standard and Variation 1 was compared and expressed as a percentage of inhibition. Based on the concentration the % inhibition range for the standard masala mix was from 58.4 to 89.2 % and for microgreen masala mix (Variation 1) 61.1 to 89.2%. Standard and variation 1 shows the antioxidant activity with an IC50 value of 116.59 µg/ml 99.0 µg/ml. Comparison of IC50 value of both the standard and variation shows that the standard masala mix had weak antioxidant activity while the variation – 1 had comparatively higher antioxidant activity. Incorporating microgreens in regular recipes along with other spices and condiments will enhance the flavor and the acceptability of the food items and may also prove beneficial to maintain health.

Keywords:

Microgreens, Free radical scavenging activity, IC50 value, Product Development

Biography:

Sneha K S is a student of first year MSC at the department of clinical nutrition and dietetics, sri devaraj urs academy of higher education and research. Research interests- Product Development Clinical Nutrition And Dietetics Food Science

Effect of Incorporating Yellow Pea Flour as a Partial Replacement of Besan Flour on the Nutritional Composition of Traditional Snack Products

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Abstract

Yellow Peas are a valuable source of protein with a rich amino acid profile. With the increase in consumer demands for nutritious foods it has led to the development of foods with blended ingredients. However, developing new products by blending yellow pea flour generates concerns that pulse will impart off-flavors and affect texture. Hence, this study was undertaken with the aim of Partial incorporation of yellow pea into snack products which may help in improving the nutritive value of the food. Snack products, Dhokla – A steamed product and Boondi –A deep fried product were developed replacing besan flour with yellow pea flour at 5% level (variation-1) , 10% level (variation-2) and 15% (variation- 3). Standard Dhokla and Boondi were prepared with besan flour. Fifteen semi trained panellists evaluated the prepared Products (standards and variations) for the Sensory attributes and overall acceptability using 9- point hedonic scale. Standard and the most acceptable variations in each of the product were further estimated for their proximate composition and compared. The mean score for overall acceptability of boondi variation 1 was high (8±0.79). However, as the percentage of yellow pea flour increased to 10% and 15% the mean scores decreased due to dominant bitter taste. Mean scores for overall acceptability of dhokla variation 3
indicated a comparatively higher mean value of 8.4±0.63. This could be due to the steaming process which helps in removal of bitter flavour as the steam takes up the volatiles. A significant difference ($p=0.007$) was noted between the means of Standard and Variation 3 on Post ANOVA Analysis-Tukey method for pairwise comparison of the overall acceptability score for Dhokla. Hence, this variation 1 (boondi) and Variation 3 (dhokla) were subjected for evaluation of proximate composition and comparison. Comparison of proximates boondi between standard and variation-1 a significantly higher levels of total carbohydrates ($p=0.001$), calcium ($p=0.009$) and iron ($p=0.05$). Comparison of proximates between standard and variation-3 dhokla revealed a significantly higher levels of total fat ($p=0.04$), protein ($p=0.02$) and crude fibre ($p=0.03$) in variation 3. Food processing methods have also influenced the acceptability of the snack products. Hence inclusion of yellow pea flour in steamed snack product can improve the nutritive value and also does not affect sensory attributes as bitter flavour is removed.

Keywords:

yellow pea flour, product development, steaming.

Biography:

Sanjana Naidu M is a student of first year M.Sc at the department of clinical nutrition and dietetics, Sri Devaraj Urs academy of higher education and research. Research interests- Product Development Clinical Nutrition and Dietetics Food Science

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Effect of Ultrasonication on malting and nutritional value of Mung-Bean and its products

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Abstract

Malting is a biotechnological technique which involves the controlled germination of a cereal grain which aims at activating enzyme systems that catalyze the hydrolysis of polymerized reserved food materials, notably, proteins, starches and cell-wall substances, thus, extracting fermentable materials. Several methods like genetic modification, amino-acid fortification, malting, milling and fermentation have been generally adopted to improve the nutritional and organoleptic qualities of cereal-based foods. Germination is one of the most effective ways of preparing grain legumes for consumption. Because it involves the total or partial elimination of anti-nutritional compounds and is also one of the simplest methods of enhancing the palatability of grain legumes, thereby increasing their consumption as a valuable source of nutrition. Different varieties of mung bean were given ultrasonication treatment and germinated for further studies. Different chemical, physiological and rheological studies were performed to identify the best treatment. Highly nutritious products were prepared from the final germinated mung bean flour and further studies were performed.

Biography

Sidhant Banura is pursuing Phd in Department of Food Science & Technology in GNDU, Amritsar under the able guidance of Dr. Narpinder Singh since September 2019. He has done his Mtech from ICT, Mumbai in Food Engineering & Technology in 2016. He worked in Keva Flavours Private Limited, Mumbai for almost 3 years before pursuing his passion for research.

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Collagen Based Active Packaging Materials Enriched With Natural Antioxidants: Food Wrapping and Antioxidant Release Applications

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Abstract

The fish processing by-products are generally predicted as low-cost resources and used as feeds for aquaculture and fertilizers for agriculture. This study aimed to extract collagen type-I from fish discarded skin and their application for active food packaging. Extracted collagen were characterized by UV-visible, SDS-PAGE, FTIR, CD, and zeta analyzer. SDS-PAGE, FTIR and CD confirmed that the extracted collagen is type-I and is in native form. For films preparation carboxymethyl cellulose (CMC) was used as cross linker and *Berberis lyceum* root extract (BLRE), as antioxidants. Films prepared with BLRE presented outstanding features, such as high biodegradability, low transparent and high UV-vis barrier properties. In addition, BLRE loaded films showed outstanding antioxidant activities. The films exposure to different food simulants showed higher antioxidant release in acidic and alcoholic food simulant as compared to fatty food simulant. Additionally, these films were also used to wrap mushroom in order to increase their shelf life. Thus overall, the present study encourages the further collagen extraction from fish skin and their use as biodegradable food packaging.

Biography

I, Mofieed Ahmed a research scholar at department of biosciences, Jamia Millia Islamia, New Delhi. I completed my M.sc in zoology from Dr. Bhim Rao Ambedkar University Agra in 2014. I qualified CSIR-NET-JRF in life sciences in 2017, and GATE-2019. Presently, I am working as a Ph.D student in Jamia Millia Islamia, and my research work is volarization of fisheries by-products for active food packaging materials.

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Development and Sensory Quality Evaluation of Wheat-Based Chapattis by Incorporating Papaya Peel Powder

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Abstract
Consumption of natural active substance and dietary fibers promotes health benefits and defense against lifestyle diseases. Papaya peel is presently discarded waste leading to the environmental contamination, but it can good sources of dietary fiber, minerals and bioactive compounds with antioxidant and cardio protective properties. with this prospective the current study focused to utilize papaya peel powder for the development of chapattis and determine its acceptability by sensory attributes by substituting papaya peel powder into wheat chapatti were evaluated at different proportions (5%, 10%, 15% of papaya peel powder). Chapattis prepared with 100% wheat flour was

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served as a control. Total phenolic content was determined by Folin-Ciocalteu's reagent method, while flavonoids, carotenoids and proximate composition was analyzed. The chapatti with 5% blanched papaya peel powder was the most accepted. The papaya peel incorporated chapatti decreased total carbohydrate (54%), protein content (9.3%) and increased with Dietary fiber (8.3g), Fat (7.1g), Moisture (27.3g\100g) and Ash (2.7%) when compared with a control chapatti made with 100% wheat flour, total carbohydrate (58.8%), protein content (9.6%), Dietary fiber (6.2g), Fat (4.6g), Moisture (26.3g\100g) and Ash (1.1%) respectively. The beta-carotene, total phenolics and flavonoids of chapattis with 5% papaya peel powder contain 16%, 1.15%, and 0.19% respectively. our study concluded that the sensory quality and phytochemical content of papaya peel-based chapattis was rich in fiber, phytochemical and excellent nutritional value may improve the antioxidant and cardio protective properties.

Key Words
Papaya Peel, Phytochemicals, Total Phenols, Flavonoids, Antioxidants.

Biography
Myself Suma .N second year MSc student Department of Clinical Nutrition and Dietetics SDUAHER Kolar. My area of research in clinical nutrition and I have done project on Development And Sensory Quality Evaluation of Wheat Based Chapatti By Incorporating Papaya Peel Powder.

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Formulation Palmyrah Jaggery by Incorporating *Cassia auriculata* Aqueous Extract as a Natural Sweetener for Diabetic Patients

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Abstract

Cassia auriculata (*Avarai*) is one of the medicinal plant which acts as an antidiabetic in diabetic patients. Palmyrah jaggery is the natural sweetener and adjuvant which helps to maintain the blood glucose level as it contains low glycemic index. The aim of this study is to formulate a Palmyrah jaggery incorporated with *Cassia auriculata* plant extracts as a natural sweetener for diabetic patients. The fresh *Cassia auriculata* plant parts (leaves, flowers, bark, root, and unripen fruit) were collected from three Divisional Secretariat divisions (*Kaithady, Karainagar, Nunavil*) of Jaffna district, Sri Lanka. Palmyrah sap was collected from *Meesalai, Varani* areas in Jaffna Sri Lanka. *Cassia auriculata* plant materials were shade dried and oven dried and ground as a coarse powder. Incorporation of plant extracts were done by Aqueous Extract (AQ) (decoction) method. From the coarse powder 5g from each plant parts were weighed down and decoction (Aqueous Extract) were prepared at 70-80℃. From that 10mL and 30mL (AQ10 and AQ30) of decoction (Aqueous extract) were added separately into the Palmyrah sap. In the determination of invitro α-Amylase inhibitory assay, Antioxidant properties and proximate composition were carried out for different concentration of *Cassia auriculata* incorporated jaggery and control jaggery. Palmyrah jaggery without *Cassia auriculata* was used as a control. When comparing the α-Amylase inhibitory action Aqueous extracts (AQ30) exhibited significantly ($p<0.05$) highest enzyme inhibition than control jaggery (58.44±0.66 %). In the determination of total antioxidant activity Aqueous extract (AQ30) exhibited significantly ($p<0.05$) highest phenolic content

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79.53±1.79 mg gallic acid equivalent/ g dry matter, total flavonoid content of 24.08±0.59 mg catechin equivalent/ g dry matter and antioxidant capacity of 184.09±1.93 mg ascorbic acid equivalent/ g dry matter. Meanwhile proximate composition *Cassia auriculata* incorporated jaggery and control jaggery. It showed that *Cassia auriculata* incorporation does not cause any changes in proximate composition. From this study, it can be concluded that *Cassia auriculata* incorporated jaggery is more beneficial than artificial sweeteners, it act as a natural sweetener and therapeutic for diabetic
patients. Among those Aqueous extract (AQ30) incorporated jaggery can use as a natural sweetener for diabetic patients.

Keywords:
Diabetes, Natural sweetener, *Cassia auriculata*

Biography:
Abinaya Kannathas graduated from Faculty of Agriculture, University of Jaffna with specialization of Agricultural Chemistry (Food Science). Interested in Human nutrition and dietetics, Food processing and Food technology, in which I'm looking for opportunities to pursuing my postgraduate studies. As I'm interested in Nutrition and dietetics this research was carried out during final year project.

Preparation and Sensory Evaluation of Proso Millet Ready to Eat khakhra

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Maharana Pratap University of Agriculture & Technology/College of Community And Applied Sciences,Udaipur (Rajsthan), India.

Abstract

Proso millet is one of the most nutritious minor millets that is underutilised. Khakara is a popular traditional Gujrathi and Rajasthani snack made from proso flour that is popular among people of all age group. As a result, an effort was undertaken to develop Proso millet Khakara with enhanced value. Addition of proso millet flour into traditional khakhra makes is more nutritious and also helps in improving the keeping quality of the highest product. Since over consumption of wheat or its products are known for improper health condition like celiac disorder may overcome by substituting it with Proso millet which is rich in protein and a number of other minerals like phosphorus and magnesium. Finally obtained product is kept for sensory evaluation by using nine point hedonic scale. The treatment T2 (8.3) is most accepted by the judges. So use of 30% of proso millet flour is more acceptable than the other treatment combinations.

Biography

Swiny sandhvi (Born,11march1989 Bihar), Persuing Ph.D Scholar (Food Science and Nutrition) MPUAT, Udaipur. I have one year agriculture research project experiences in different organization. I have so many research publications in international and national journal. I am also life member of different Nutrition society.

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Development of Standardization Recipe for Nutraceutical Chocolate Bar by using Herbal Powder and Quinoa

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Abstract

In the modern era, people are being health conscious but the available food items are insufficient to provide the proper nutrients through claimed food items. Indian traditional medicine like herbal powder has very high effectiveness and vital source. Value addition to nutraceutical and immunity-related confectionary products is a resource for the development of new medicinal and functional food items. The purpose of this research project is to develop a nutraceutical chocolate-based confectionery product that will provide benefits other than that of the traditional chocolate product. Herbal has functional as well as nutraceutical food is used as rigid support to maintain health and to promote optimal healthcare and quality of life. There is a need to produce some innovative confection products other than traditional chocolates. The nutraceutical chocolate bar which has been manufactured is more nutritious and healthier due to its rare ingredients which also makes it a unique nutraceutical chocolate bar. The raw materials required for the preparation of this bar like herbal powder are moringa and quinoa along with dry fruits like apricots, pineapple, and nuts like almonds, cashew, etc. For the standardization of formulation, four test samples were prepared of different proportions of raw ingredients, among then one sample was selected by a sensory panelist based on the organoleptic evaluation. The bar was packed into aluminum foil wrappers. The approximate nutritional values obtained by analysis are particularly Protein, Fat, Carbohydrate, and Fibre. The storage conditions are studied at variable temperature conditions and store in a cool and dry place. The well-packed bars were studies for 4-5 months to determine their shelf life study.

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Biography:

My name is Rohan Ramesh Shah. I am from Pune, Maharashtra. I have done my B. Tech in Food Technology from MPKV, Rahuri University. Now, I'm pursuing M. Tech (Food Technology) from MIT School of Food Technology, MIT ADT University, Pune. I have to participate in many National as well as International Conferences. I have published two research papers in various journals. I have done one day and two days of training such as HACCP, FOSTAC, ISO, etc. I have also done 3 industry training. i.e- Varun Agro Pvt. Ltd, W.S Bakers and Nilons Enterprises Pvt. Ltd. Currently, I'm working on a new research topic in my M. Tech curriculum.

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Incorporation & Evaluation of Sprouted Green gram in selected bakery and Confectionary Products

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PSG College of Arts & Science, India.

Abstract

Sprouted Green Gram pose as a functional ingredient with superior antioxidant capacity. The main purpose of the study was to incorporate sprouted green gram in to the common bakery and confectionary products such as cakes, cookies and barfi and analyze its sensory, nutritional and shelf-life properties. The procured green gram was soaked (8 hours), germinated (24 hours), grounded and stored in airtight container for incorporation. Incorporation was carried out in the ratio of 25, 50 and 75 percentage. Incorporation of 25 percent in cakes and cookies; 50 percent in barfi was sensorily acceptable. Regarding the shelf-life, without the addition of preservative the product remained fresh for 3 days and with reference to nutritional profile increased in Vitamin C and Iron content was observed comparing with the standard product. In the modernized world the bakery and confectionary foods became the craving foods of the people. With such incorporation, the nutritional value of the products could be improved. The study shows the possibility of such nutritionally superior ingredients as a functional item in snack foods and also opens the gate for incorporation into other snack foods.

Biography:

This is K. Abarajitha, Assistant Professor, Department of Nutrition and Dietetics, PSG College of Arts & Science. My areas of interest are formulation of nutritionally superior products that could benefit and satisfy the present modernized food pattern of the society. I wish to learn and use my knowledge for the betterment of the people

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Immunity Boosting Through Therapeutic Traditional Herbal Foods

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Abstract

Nutrition and Immunity are interlinked. Malnutrition can be led to immunodeficiency. In the present scenario varied novel health diet paradigms emphasis the positive aspects of diet. Though miscellaneous diets came into existence, traditional food has its significance as it mostly includes herbs, which are very effective in handling certain circumstances. It can serve as nutritious food offering targeted nourishment to physiological systems. Traditional food includes herbs which are essential, natural, easily procurable and are of no harm. For example, some traditional food includes diverse herbs like turmeric, ginger, garlic, coriander, cumin seeds, cinnamon, fenugreek, and fennel seed which are occupied regular in our diet and so on. Traditional herbal foods are equipped with many therapeutic qualities due to antioxidant, antidiabetic, anticancer, antihypertensive, antimicrobial and immunomodulatory capabilities. They have curative properties and exhibit disease eliminating characteristics. They play a vital role in alleviating several ailments. In India especially in southern

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parts traditional herbs are extensively used in their day-to-day life. Nutrition and immunity are blended in their daily life through intake of food which helps to face the unexpected challenges like CORONA pandemic.

Biography:

PROF.M. BHASKAR, RFBCA(USA), CWF(UK), FZSI, FAPAS, Former Rector, S.V.University, Former BOS Chairman of zoology, UGC-Innovative Programme. Molecular Physiology. Biotechnology is the research area of interest. Doctor of Peace is awarded by Maharshi European Research University, Switzerland (2018), Lifetime Achievement Award in animal Biotechnology by Venus International Foundation (2017), A.P.State Best Teacher Award(2015).

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Effect of Maturity State and Heat Treatment on Antioxidant Level of Anacardium Occidentale Shoots.

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Mohd Ashraf Bikri Abdul manaf
Universiti Sains Islam Malaysia, Malaysia.
Hanis Nadia Yahya
Universiti Sains Islam Malaysia, Malaysia.
Norlelawati Ariffin
Universiti Sains Islam Malaysia, Malaysia.
Hafiza Yahya
Universiti Sains Islam Malaysia, Malaysia.

Abstract

Covid 19 has affected the world in many ways, especially in health. This study investigated the effects of boiling and blanching on the antioxidant level of Anacardium occidentale shoots at different maturity state. Total flavonoid content (TFC), total phenolic content (TPC), and DPPH free radical scavenging activity (DPPH) were used to quantify the antioxidant level. The highest TPC was found in raw mature shoots (15.57 ± 2.28 mg/g), the highest TFC was found in boiled mature shoots (10.86 ± 2.73 mg/g), and the highest DPPH was found in blanched mature shoots (92.87 ± 0.62 mg/g). A weak positive correlation between TPC, TFC, and DPPH of raw, boiled, and blanched shoots may be due to the presence of other phytochemicals such as ascorbic acid and pigments that effects the antioxidant activity. The TPC and DPPH activity showed no significant difference in young and mature shoots after boiling and blanching but had a significant difference in the TFC ($p \leq 005$). Boiling the shoots resulted in the highest TFC which makes it the better cooking option. Eating healthy with the

addition of shoots like Anacardium occidentale is an important initiative to protect and improve our general health.

Biography

Ainil Hawa Mohamad Fauzi is a Graduate Research Assistant and a PhD candidate at Faculty of Science & Technology, USIM, Nilai, Malaysia where she also finished her BSc. (Hons). She completed her MSc in Engineering at University of Malaya (UM), Kuala Lumpur, Malaysia. Her previous research work includes 'The effects of fat substitution using palm stearin on the physicochemical properties of cake' and 'Mixed culture polyhydroxyalkanoates (PHA) production using crude glycerol as carbon source'. Her publication 'Enrichment of PHA-accumulators for sustainable PHA production from crude glycerol' is published in the journal Process Safety and Environmental Protection (PSEP) in 2019.

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Ancient Traditional Indian Cuisine of Malwa Region: As Immuno Booster

Dr. Priya Trivedi
Compfeeders Aisect College of Professional Studies, Indore, India

Abstract

The history of Indian cuisine consists of a variety of regional and traditional food including spices and cereals which are unique and backdated approximately 8,000 years ago, leading to diverse cultures and their flavors found in modern-day India. Each cuisine and its flavors vary substantially with the diversity in soil, climate, ethnic groups, and occupations. Ancient traditional cuisines used locally available vegetable and fruits, spices, and different variety of herbs for preparing Indian recipes which is full of nutritive value. My paper describes about Indian Ancient traditional food the Malwa region, the "heart" of India which acts as an Immuno Booster and helps for recovering various diseases. Paper also includes the different varieties of seasonal vegetables and food product which provide health benefits and helps to build our immune system.

Biography

Dr. Priya Trivedi has completed her M.Sc. (Botany), specialization in Taxonomy from Holkar Science College, Indore DAVV M.P. She has completed M.Ed. and was Topper from Kawartara College, Mandleshwar , M.P. She has been awarded her Ph.D. degree from Botany in "Phytochemical Analysis of Bark Of Some Trees Under Different Ambient Air Pollution Conditions In Indore , DAVV. She has successfully completed her Minor Research Project of two years during Ph.D. research work funded by UGC, Bhopal. She started her career as Asst. Prof. in 2011 from P .M .B. Gujarati Science College , Indore where she taught U.G. and P.G. for eight years and was involved / incharge in various departmental and college activity. Presently, working in Compfeeder Aisect College of Professional Studies as Head, Academic and Department of Science. She has her credit of more than 10 research/review papers in various national and international Journal of repute, and presented more than 5 research papers in various Seminar & Conferences, and written articles in various Magazine related to environment and serving as Executive Editor of ISERS (International Society of Environmental Relationship And Sustainability, Reviewer of many Journals and Editorial Board

Member of several International Journal. She is also a Member of All India Council For Technical Skill Development and as a Life Membership in Botanical Survey of India and Vigyan Bharati Malwa Prant.

To Develop Low Cost, Protein-Rich Chunks Made from Horsegram (Macrotyloma uniflorum) and Barnyard Millet (Echinochloa frumentacea) for Strengthening Immunity

Suyasha Gupta
Amity University Haryana, India.

Abstract

Chunks or Wadi are a common savoury in India. **Millets**, the oldest and traditional food of India are coming back into the food industry as a **SUPER-FOOD** due to their **high nutritional value and excellent fibre content**. **Mutual Supplementation** has been used by combining **Barnyard Millet (Cereal) with Kulthi Dal (Pulse)** in providing **complete amino acids** and therefore, **high biological value protein from plant sources. Whey Protein** extracted from **milk** has been added to supplement the protein in the diets, which **vegetarians are not able to get.Spices** are essential ingredients as they **add taste** and also make the chunks more **digestible. Piperine extract**, taken out in the laboratory was added to increase the **Protein metabolism**. **High biological value proteins** build a **stronger immune system** so, these **Protein Rich chunks may help boost immunity.** It's **well suited for protein energy malnourished kids and type II diabetes mellitus patients** due to its high protein and dietary fiber content. It will prove to be a **low cost, easy to make cook, & store (non-perishable) food product**. It will be an **aid to the economically weaker sections of the society**. Such **Ready to Eat food products** help to achieve **Nutritional Food Security.**

Biography

I am a student of BSc Dietetics & Applied Nutrition, studying in Amity University Haryana. Me, along with my HOD Dr Luxita Sharma have done this research work on developing a protein rich food product that can be used to strengthen immunity. We have a filed a patent on this as well. I am interested in Food product development for the betterment of the society, to ensure food security that guarantees good nutritional status. Because a healthy population can prove to be an asset.

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Abundant Sources of Nutrients in Sea Buckthorn Juice to Develop Immunity and Promote Human Health

Sweety Kumari
Sharda University, India.

Abstract

Sea buckthorn plant is grown in cold and arid regions of world. The berries and its products of this wonder plant have been proven for usage in pharmaceutical and Cosmeceuticals industries. The berries of Sea buckthorn plant are affluent in various medicinal and nutrimental compounds like carotenoids, flavonoid, organic acids, amino acids, vitamins and minerals. Sea buckthorn berries exhibits vitamin C 15 times more than other fruits like orange. And because of high amount Sea buckthorn berry juice has become a substantial companion among food commodities for boosting immunity. Apart from vitamin C it also consists of vitamins A, B1, B2 and B6 and other bioactive compounds which plays vital role in building immunity in human body. This "superfruit" is loaded with instinctive necessary fatty acids like ω 3, 6, 7 and 9 which supports cellular activities, regeneration and production of collagen in bones, skin, and tendon. Sea buckthorn juice also helps in promoting good digestive system and improves urogenital lining. These bioactive compounds vary and depend on subspecies of plant, geographical and climatic conditions. The Sea buckthorn plant extract is rich in polyunsaturated fatty acids which develops and protects lubrication. And it may help in boosting the immune system of the body.

Key words

Sea buckthorn, immunity, fatty acids, vitamins, micronutrients

Biography

PhD scholar with Sharda University, Greater Noida in the field of Food Science and Technology. She is a post graduate in food science and technology, and had been an intern with FSSAI.

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Development of Immunity Boosting Recipe with Added Herbs

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Dr. Vishakha Singh
Department of Food Science and Nutrition, College of Community and Applied sciences, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan, India

Abstract

The leading challenge across the globe currently is COVID 19 pandemic. Only, sustainable way to survive in the current situation is to strengthen the immune system. In this context, a recipe which included immunity boosters like lemon, ginger and herbs like chamomile and long pepper was developed with three variations using honey, sugar and jaggery as sweetening agent respectively. Vitamin C in lemon helps boost health and fight disease. Gingerol, the bioactive compound in ginger has anti – inflammatory and antioxidant properties. Piperine in long pepper helps fight infections. Chamomile is an ancient medicinal herb, has a quintessential role in treating common cold, sore throat, cough and flu symptoms. All the three variations were standardized and tested for sensory evaluation on a Hedonic Scale by a panel of ten judges. The products were stored in clean sterilized bottles for a period of one month of study. The products developed are calorie dense and is rich in vitamin C content (17.69mg). On an average, the recipe using honey and jaggery as a sweetening agent scored 8 on the overall acceptability while the product with sugar scored 7 on a Hedonic Scale. Same procedure was followed for the preparation of all except the fact that the recipe which had honey was not given the heat treatment before bottling. Probably, due to this reason and presence of moisture was responsible for a fungal growth on the sample with honey, after a period of 14 days .The other two variations (with jaggery and sugar) showed no signs of spoilage and also had the same acceptability even after one month. Concluding, the products can be used for treating sore throat and dry cough. It can be enjoyed as a spread, chutney or as a relish.

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Keywords
lemon, ginger, chamomile, long pepper.

Biography
Ms. Payal Talesra is presently a Ph.D. Research Scholar in Department of Food Science and Nutrition, College of Community and Applied Sciences, MPUAT, Udaipur, India. She's a Gold Medalist in her masters and Graduation programme. She has worked as a chief dietician for a period of five years in NABH certified multi specialty hospital.

Dr. Vishakha Singh is serving as Assistant Professor in Department of Food Science and Nutrition, MPUAT, Udaipur, India. She has an experience of fifteen years of research, teaching and extension. She is a master trainer of Nuts and Oilseeds under the PMFME scheme of GOI.

Role of Holistic Nutrition and Wellness in Boosting Immunity

Sushma Gumma
Online Nutrition consultancy www.nourishiawellness.com , India

Abstract

The novel coronavirus has spread rapidly to multiple countries and has been declared a pandemic by the WHO. COVID-19 is observed to probably affect people with low immunity. Carbohydrates from whole grains act as T-cell antigens modulating adaptive immune responses. Proteins help in formation of antibodies that help in fighting against harmful microorganisms. The fatty acid composition of the membranes of immune cells seems to be easily modulated under the effect of dietary fats generating functional effects on these cells. Vitamins and minerals regulate T-lymphocytes, antibodies, and cytokines formation that enhances the immune response.

Plant-based foods increase the intestinal beneficial bacteria. This improves overall gut microbiome health which makes up to 85% of the body's immune system thereby boosting immunity.

Proper hydration helps our cells to oxygenate that helps them protect the body from any infectious agents.

Regular exercise increases the levels of WBCs and antibodies.It also prevents formation of blood clots, which have been a symptom for some COVID-19 patients. Stress releases hormones like cortisol that suppresses the action of white blood cells and increases inflammation.

Good sleep helps in releasing cytokines that fight off any infection.

Biography

Sushma Gumma holds MASTERS in Holistic Nutrition and is now doing PhD in the same with a working experience of more than six years.

She is the founder of Online Nutrition consultancy www.nourishiawellness.com

She has authored three published books on Nutrition in Telugu.

Her Nutrition articles have been featured in THE HINDU, TIMES OF INDIA,EENADU,ANDHRA JYOTHI and B POSITIVE magazine.

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She delivered talks at various schools,colleges,corporates like Toyota,HPCL and also got featured on media like Etv news, Doordarshan,Josh talks,All India Radio,Eenadu FM and Radiomirchi.
She's been awarded for Outstanding services to the community and as Nutripreneur of the year 2020 by NEP Mumbai.
She received Sadhana Young Nutrition Entrepreneur award from Honorable Telangana's Governor Dr.Tamilisai Soundarajan.

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Nutritional and Antioxidant constituents of Orange Fleshed Sweet Potato (*Ipomoea batatas*) flour

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Dr. Sarla Lakhawat
Department of Food Science and Nutrition, College of Community and Applied Science, Maharana Pratap Agricultural University and Technology, Udaipur, Rajasthan , India.

Dr. Manoj Kumar
Agricultural mechanization division, ICAR-Central Institute of Agricultural Engineering, Nabibagh, Berasia Road, Bhopal, Madhya Pradesh , India.

Abstract
Orange Fleshed Sweet Potato (OFSP) is an improved breed of sweet potato with an excellent source of ß-carotene and is generally well accepted by the people of the world. This crop is gaining importance, as it is the cheapest source of antioxidant and having several physiological attributes like anti-oxidation, anti-cancer that may help in protecting against liver injury and coronary heart disease. Predominantly, ß-carotene (Pro-vitamin A) is converted into vitamin A in the intestine of human body, which is essential for a strong immunity, healthy skin, good vision and eye health. The present investigation was carried out to analyze the nutritional and antioxidant constituents of OFSP flour. The Gauri variety of OFSP was used in this study. The tubers were processed into flour and analyzed for nutritional and antioxidant constituents using standard methods. The moisture content of fresh OFSP tuber was 71.84%, whereas, the crude protein content of OFSP flour was observed as 6.33%, fat content (1.41%), ash (4.64%), crude fibre (4.43%), total available carbohydrate (77.38%) and energy

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(347.55Kcal/100g). The calcium, iron and phosphorous content of OFSP flour were quantified as 126.59mg/100g, 2.14mg/100g and 115.00 mg/100g respectively. The ß-carotene, total carotenoid and antioxidant activity of the OFSP flour was 3.58mg/100g, 9.66 mg/100g and 125.03mgTE/100g respectively. Thus, OFSP is well suited for nutrient interventions, because they are a naturally rich source of ß-carotene. Hence, promotion of OFSP as a functional food in India will definitely prove to be a successful strategy for eliminating vitamin A deficiency.

Biography

Dr. Gitanjali Chaudhary is working as Assistant Professor cum Scientist, Department of Food and Nutrition, College of Community Science, under Dr. Rajendra Prasad Central Agricultural University, Pusa, Bihar. She had her Ph.D in Food and Nutrition from Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan. She has 14 years of teaching and research experience in the field of food and nutrition. She has published many research papers, book chapter and popular articles.

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Immunity Boosting foods, Nutrients, Supplements and Practices

Dr. Sadhna Agarwal

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Abstract

Currently Covid-19 Pandemic is a leading challenge across the globe. A nutritious diet can ensure that the body is in proper state to defeat the virus. Our food choices affect our health so, we must choose a diet which is healthy, nutritive and useful for our body. This article explores the importance of nutrition to boost immunity. It is quite simple to eat healthy and balanced diet, just by incorporating all food groups and focusing on home cooked wholesome meals, which is key to good health. Good quality protein sources are very important to supply our daily dose of calcium and protein specially for kids, pregnant ladies' people who are involved is heavy duty work.

Spices and herbs e.g., turmeric, garlic, asparagus, green tea, black cumin, liquorice, tulsi, ginseng, ashwagandha have anti-inflammatory properties which can enhance immunity.

Water is needed for all the cellular functions and detoxification processes. Consumption of the variety of foods in correct and balanced proportion makes up a healthy body. These substances keep a person alive, also aid the growth and development regulate the body processes and boost the immune system that protects the body form diseases.

Biography

My self is Dr. Sadhna Agarwal, Assistant Professor with fifteen years of experience in Govt. Girls Degree College D.L.W Varanasi (U.P).

Basically, I belong to Agra so, I completed my schooling as well as higher studies from their only, Institute of Home Science Agra University, securing first position with Gold Medal. I also qualified I.C.A.R. Senior Research Fellowship. To avail this, I joined Agriculture university M.S. Baroda for doing Ph.D. Course. Ten National and Four International research papers have been published in various journal and magazine. I also participated in about Forty National and International workshops. Two of my books published on human development.

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A Review on Immune Enhancers and Weakening

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Akshay Alawani
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Shunmukha Priya. S
Research Supervisor and Faculty, Institute of Nutrition and Fitness Sciences, Platinum Square, Pune, Maharashtra, India

Abstract

Introduction: Immune system involves a complex network of cells and biochemical reactions. The main function is to enable the host's defense against infectious agents and thus protecting the body from diseases. Immunity is broadly classified into natural and/or acquired. In the current scenario, immunity draws attention and the focus is on adding immune enhancers, which is the last line of defense. Unfortunately, factors inhibiting immunity were getting ignored during this scenario. This paper provides an over-review of the immune weakening as well as immune-boosting.
Methodology: We performed literature searches using keywords (1) Immunity, (2) Factors boosting immunity, (3) Factors weakening immunity, (4) Immune boosters, lifestyle factors, (5) Immune system. Results were screened for relevance and only human studies were considered.
Conclusion: Immunity plays an important role in disease prevention. When we think about immune boosters, we must also check on immune weakening. The complex system of immunity has to be finely balanced with a focus on making long-term changes and building positive habits in our lifestyle rather than the addition of immune-boosting supplements, especially over the counter. Increasing immunity through physical exercise, consuming balanced nutrition, and taking care of factors like sleep, hydration and stress should be the big picture focus.

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Biography:

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Holds an INFS Expert Certificate and ESS certification and has been training online in Fittr since two years. He is also faculty at INFS and has contributed to the books and curriculum of various courses at INFS.
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A medico (BDS) with postgraduate in Human Nutrition (UoSurrey, UK) with seven years of experience in nutrition and exercise consultation and education. Currently Faculty Head at INFS, has contributed to books and curriculum of courses at INFS.
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Holds M.Phil and Ph.D in Food Science & Nutrition, and is also UGC NET qualified. Has published in journals and presented papers in national and international conferences. Life member of Nutrition Society of India, currently serving as Research Supervisor at INFS

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Unused portion of vegetables can void malnutrition

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Department of Food Science and Nutrition Management, J. D. Birla Institute, Kolkata, India

Abstract

Nutritional deficiency is a major health problem from decades in many developing countries due to insufficient affordability of food among low socio- economic people. Reports shows that worldwide three-quarters of children died of malnutrition related problems whereas about 1.3 billion tons of food is lost or wasted starting at the production stage and ending at the consumer domain in every year. In India as well as Southeast Asia, Cauliflower, Turnip, Radish and Peas are widely used vegetables and grown abundantly. But the leaves and pods of these vegetables are generally discarded. In this study, unused portion of vegetables (mainly leaves and pods) were used to develop a product, which can combat the nutritional deficiency of the low-socioeconomic population. Different variations of product were prepared by using unused leaf of cauliflower, turnip, radish and pea pods. Chemical analysis of organoleptically acceptable product showed that they were rich in calcium, iron, vitamin A, vitamin C, polyphenol and have strong antioxidant property. Product with radish leaves showed highest content of Vitamin A &C. whereas; product with turnip leaves showed highest content of calcium and iron. Phenol content and antioxidant property were found highest at product made with radish leaves. So, it can be concluded that the product, which was made using unused portion of vegetable are nutrition dense, low-cost and can combat nutritional deficiencies.

Biography:

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Dr Manika Das (presenter) is the Assistant Professor of the Dept of Food science & Nutrition Management, J.D. Birla Institute (Affiliated to Jadavpur University), Kolkata, India.

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A study to assess the impact of indigenously produced RUTF supplementation on the antioxidant and oxidative stress biomarker levels in Severe Acute Malnourished Children.

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Divya Ananthasubramanian
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Abstract

Background: Malnutrition was a major public health challenge before the pandemic. COVID-19 pandemic has further exacerbated the problem of malnutrition due to disruption in food supply and nutritional programs services by the government- mandated shutdowns, loss of incomes and rise in food prices. Dietary deficiency of protein in Severely Acute Malnourished (SAM) children results in impairment in the synthesis of plasma albumin, antioxidant enzymes and reduces concentration of

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antioxidants in the tissue, thereby resulting in a compromised antioxidant status. Furthermore, severe dietary deficiency leads to increased oxidative stress in acute malnutrition. This leads to compromised immune system putting them at a greater risk of contracting infections like COVID-19. Antioxidants protect the body from damage caused by oxidative stress. Ready-to-use Therapeutic Food (RUTF) is considered a gold standard in management of SAM and contains antioxidants.

Aim: To compare the changes in antioxidant and oxidative stress biomarker levels in SAM children receiving Indigenous produced RUTF i.e. MNT and Standard Nutrition Therapy (SNT).

Methods: This open randomized controlled trial enrolled 60 children between 6-60 months, diagnosed as SAM by WHO criteria. Subjects were divided into two groups that received MNT or SNT for 8 weeks. Outcome measures were mean changes in the levels of Vitamin C, Glutathione (GSH), Malondialdehyde (MDA) and Zinc.
Result: Biochemical assays were done in 30 SAM children. The mean (SD) vitamin C levels improved to 0.62 mg/dl (± 0.23) in MNT in comparison with 0.37 mg/dl (± 0.09) in SNT; the differences in the mean increment was statistically significant (P = 0.0000).The mean (SD) GSH levels improved to 22.8 umol/L (±7.8) in MNT group as compared to15.21umol/L (±8.05) in SNT; the differences in the mean increment was statistically significant (P = 0.0001).The mean (SD) reduction in the MDA values was -6.38umol/L (2.54) in the MNT group and was -4.62 umol/L (3.40) in the SNT group; the differences in the mean reduction was statistically significant (P = 0.02). The mean (SD) Zinc Levels increased to 83.9 mg/dl (±30.6) in MNT in comparison with 26.1 mg/dl (±13.9) in SNT group; the differences in the mean increment was statistically significant (P = 0.0000).

Conclusion: The difference observed in the antioxidants level between post and pre measurement was significantly higher in MNT compared to SNT. MNT was found to be more efficacious in improving the antioxidant levels and reducing the oxidant level in SAM children. MNT can be used in emergencies like pandemics to tackle issues like food insecurity as well as to improve their nutritional status/immune system by enhancing their antioxidants levels and reducing oxidative stress.

Biography

Ms. Lavina Fernandes is working as Dietitian and RUTF Production Incharge at Nutrition Rehabilitation, Research and Training Centre (NRRTC), Dept. of Pediatrics, Lokmanya Tilak Municipal General Hospital, Mumbai, Maharashtra, India. She has been working in the field of malnutrition and Infant and Young Child Nutrition for the past 9 years at NRRTC. NRRTC is the Nodal centre in Management of Malnutrition located in the amidst one of the Asia's largest slum Dharavi, Mumbai, India. Lavina has won several prizes for her research on malnutrition.

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4th International Conference on
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23rd – 24th September 2021

Study of the antimicrobial activity of leaf and flower extracts of *Sphagneticola trilobata*

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G. Bhupesh
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Abstract

The field of nanotechnology is one of the most active research areas in modern materials science. The present research is one such attempt with a novel green procedure for the production, characterization, biomedical applications and thermal disintegration studies of silver nanoparticles using *Sphagneticola trilobata* aqueous leaf and flower extracts under ambient circumstances. In the present study, the Silver nanoparticles (AgNPs) were produced through green route using leaf and flower extracts of *Sphagneticola trilobata*. The aqueous silver ions were condensed into AgNPs as mixed with the *Sphagneticola trilobata* leaf and flower concoction. Synthesized AgNPs were characterized by UV–visible spectroscopy and phytochemistry. Further, the results of the Silver nanoparticles on antimicrobial assay infer that there is a significant broad spectrum, antibacterial activity against *E.coli, Coryne bacterium, S. aureus* and *P.aeruginosa.* Among the above four bacterial strains: *E.coli* and *Staphylococcus* exhibited the highest zone of inhibition than the rest of the strains.

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The phytochemistry analysis of *S.trilobata* indicates that bioactive secondary metabolites such as Flavonoids, Phenols, Saponins and Tannins are present. The mechanism of synthesising Silver nanoparticles is due to the presence of above bioactive components.

Biography

Area of Research: Biotechnology, Molecular Physiology, Bioinformatics, Molecular Genetics, Ethanopharmocology. He completed 26 years of teaching and 34 years of research experience.

Research Accomplishments: Guided 23 PhD's, 7 M.Phil's, Authored 3 books, contributed chapters for 7 books and published 168 research papers in National and International reputed Journals. He has presented his research works in International Conference on Acidic Precipitation held at Toronto, Canada during Sept. 1985 and Federation of American Societies for Experimental Biology Annual Meeting in USA (1988), besides presented his Research works in more than 100 papers in conferences. Selected for Indian Govt. Fellowship to study at USA (1986-89) and received Rockefeller Foundation Biotechnology Career Award, USA in 1993.

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23rd – 24th September 2021

Evaluation of anti-microbial properties of Flax Seed Extract (*Linumusitatisimum*, L.)

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Karuna Singh
Professor, School of Allied Health Sciences, Sharda University, Greater Noida, India.

Abstract

Flax seed with scientific name *Linum usitatissimum* belongs to *Lineaceae* family the linseed plant have blue flowers which give small, flat seeds ranging in color from golden yellow to reddish brown color. In the present study the analysis of the Flax seed extract was analyzed for having different phytochemicals like alkaloids, tannins, phenols, proteins/amino acids and terpenoids. Calculation of phenolic content in ethanolic extract was done using calibration curve of Gallic acid using equation as (Y=0.0109x + 0.0403 and R = 0.9973) which was estimated to be 53.65 mg/ 100gm of gallic acid equivalent per gram extract. Total Flavonoid content of flax seeds extract was found to be 3.98 ± 1.45µg QE/mg. Anti-microbial effect of flax seed extract was studied against different micro-organism strains. Results indicated that flax seeds extract was found effective against gram positive bacteria i.e. *Staphylococcus aureus* and gram-negative bacteria i.e *E. coli*, *P. aeruginosa* and fungi *Candida albicans* with zone of inhibition 20±0.46 mm, 8.15±0.25mm, 28±0.62mm and 23±0.58 mm respectively, while on comparison with standard drug. Thus flax seeds anti-microbial was found positive to claim the positive effect on human health.

Key Words

Phytochemicals, Gallic Acid, Flavonoid, Anti-microbial, Human health

Biography

Myself Dr Bushra Shaida, I have done my B.Sc. from AMU and Masters from Lucknow University and completed my PhD from Amity University. My research area is Nutrition, Food Science and Public Health. Working as Assistant Professor in Sharda University from last 7 years .

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Role of Vitamin B12 in Cognitive Development

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Salim Siddiqui
Professor, SAS, Sharda University, India

Abstract
The cognitive impairment due to nutritional deficiencies and neurological diseases are increasing abundantly with the span of time. These disorders are not only limited to elders but also impacting the other ages as well and causing a remarkable proportion of global burden. A good nutrition establishes a positive co-relation in brain functioning. Studies have found a strong association in vitamin B12 deficiency and impaired cognitive functioning. Supplementation of vitamin B12 and folic acid have found a marginal decline in cognitive impairment. However, role of vitamin B12 alone in treating and improving the symptoms of neurodegenerative diseases are still inconclusive. Vitamin B12 plays a key role in homocycteine to methionine conversion, which then be utilized for nucleotide synthesis and methylation. In this article, we will discuss the role and functions of vitamin B12, in overall development in all age groups and its key mechanism for prevention of cognitive impairment and later neuropsychatric behavior.

Keywords
Cognitive impairment, Vitamin B12, neurodegenerative diseases, nucleotide synthesis, methylation.

Biography
Myself Mayuri Rastogi, B.Sc, M.Sc(Food and Nutrition, 2007)and pursuing PhD. I am working as assistant Professor in Sharda University from last 4 years. Prior to this I worked for 7 years in multispecialty hospitals as clinical Dietician. My area of interest is micronutrients role and intervention studies.

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Boosting Immunity with Wheatgrass Juice

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Abstract

The new coronavirus disease (COVID-19) outbreak caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is affecting an increasing number of people around the world. The host's immune response to SARS-CoV-2 plays an important role in illness severity and clinical symptoms. Wheatgrass, which is high in phytochemicals, vitamins, minerals, and antioxidants, can be utilized as an immune booster. The phenolic profile of wheatgrass showed that it has high amount of ferulic, p-coumaric and protocatechuic acid. The phenolic compounds boosts immunity to invading infections through a variety of mechanisms. These phenolic acids play major role in antioxidant potential of the wheatgrass. The TFC content showed major contribution of quercetin and rutin. The higher chlorophyll content of wheatgrass had positive correlation with antioxidant potential. The FRAP values for the wheatgrass showed higher ferric reducing ability. These biologically active components can interfere with nucleic acid or spike proteins of the virus and produce protective effect.

Keywords:

Phytochemicals, Antioxidant potential, Phenolic profile

Abbreviations Used: TFC (Total Flavonoid Content), FRAP (Ferric Reducing Antioxidant Power)

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Effect of Raw vegetables Juice therapy on Nutritional status of HIV Positive patients

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Shyama, M. S
Department of Food Science and Nutrition, Karnataka State Open University, Mysuru, India.

Abstract

HIV/AIDS accounts for 84.5 million Disability Adjusted Life Years which is closely linked by Nutrition. Immune impairment as a result of HIV/AIDS will contribute to malnutrition. Nutritional deficiencies can be reversed by timely and adequate nutritional therapy. The study aims to assess the nutritional status of HIV positive patients and to evaluate the impact of a nutrition intervention through raw juice and diet therapy. Demographic profile, Anthropometric profile, clinical assessment and dietary assessment were done using standard procedures and biochemical parameters (CD4 count and hemoglobin) were noted from hospital records. Nutrition intervention was done through structured meal pattern and Raw juice formulated by Vegetables and Fruits. Nutritional supplementation showed significant impact on improving the anthropometric measurements of experimental group. Weight, waist and hip circumferences and mid upper arm circumference increased significantly at the end line ($p<0.05$). Post intervention percentage of subjects belonging to malnourished or 'at-risk' category as determined by 'Mini Nutritional Assessment' (MNA) declined and there was an increase in number of subjects belonging to normal category. Supplementation also showed significant improvements in the knowledge, attitude and practices (KAP) scores of experimental group subjects while overall KAP score decreased for the control group subjects.

Biography

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Dr. Hemalatha, M.S. is working as Assistant Professor at Department of Food Science and Nutrition, Karnataka state Open University, Mukthagangothri, Mysuru. She Completed her Ph.D. from CSIR-Central Food Technological Research Institute, Mysuru. She was awarded Research fellowships from BARC and DST. She has more than 10 years of research and teaching experience. She has published many research papers in peer reviewed journals and authored Book Chapter. She has presented research abstracts in many National and International Conferences and also been awarded for Best Research Papers.

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Phytotherapeutic Immunomodulators

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Abstract

COVID-19 is a contagion, caused by severe acute respiratory syndrome corona virus-2 (SARS-CoV-2). It became a health-related hazardous issue of this decade. It is widely accepted concept that medicinal plants are nature's gift, valuable, inexpensive and contain various phytoconstituents which can be used for the treatment of infectious disorders. Phytochemicals have been used as antiviral agents against a large number of viral diseases. The mechanism of action occurs at different levels of virus multiplication. The inhibition of viral activity can be achieved by the antiviral agents such as medicinal plants or phytochemicals. A special emphasis has been given on immunomodulatory medicinal plants such as *Withania somnifera*, *Tinospora cordifolia*, *Curcuma longa* and *Azadirachta indica*. The extracts of these plants showed significant antiviral activity *in vitro* and *in vivo*. In traditional Ayurveda, single drug or formulation of the cited plants was used from ancient time onwards. These plants can be useful under phytotherapy approaches during this distressing pandemic situation.

Biography

Dr Sheeja T Tharakan, HOD and Assistant Professor, Department of Botany at Vimala College (Autonomous), Thrissur, is a Doctoral degree holder in Biochemistry. She is also recognized as a research guide and has more than 17 years teaching experiences in Botany. She has worked as Research Intern at MD Anderson Cancer Centre, Houston. She also got Research Award for the Best Paper in the discipline of Natural Products. She has to her credit 6 books and 33 research publications in National and International peer-reviewed journals. She is a member of the editorial boards and reviewer of international and national journals.

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Role of Glutamine in Immunity

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Abstract

Glutamine which is generally considered a non-essential amino acid becomes essential during a catabolic state. In catabolic stress conditions like burns, sepsis, and trauma, glutamine is converted to glutamate which is then converted into TCA cycle intermediates and used as energy precursors by lymphocytes and macrophages. Glutamine is involved in immune cell development by involving in purines and pyrimidine synthesis. Phagocytosis, an important immunological response to neutralize identified foreign substances is reinforced by the presence of glutamine. Here, glutamine is converted to arginine, and arginine is used for nitric oxide production that is essential for phagocytosis. Glutamine is also involved in the synthesis of glutathione, which has antioxidant activity. Thus, glutamine also prevents cellular damage. The functions of glutamine in immunity are not only restricted to the production of energy, purines, and nitric oxide but also glutamine is also involved in gene expression, signal transduction, and repair regulators metabolism. Thus, glutamine plays a significant role in both innate and adaptive immunity. Therefore glutamine supplementation will improve the disease-fighting capacity of critically ill-immune-compromised patients.

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Biography

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Development of Antioxidant Astaxanthin Gummy Bear supplements


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Abstract

The aim of this research is to develop gummy bear candies supplemented with antioxidant Astaxanthin (AST). In recent times, consumers have switched to value-added organic foods. Natural Astaxanthin (3,3'-dihydroxy-ß, ß'-carotene-4,4'- dione) is the main keto-carotenoid produced in Haematococcus pluvialis. Astaxanthin is an effective antioxidant compared to beta-carotene, lycopene, lutein, and vitamin-E which activates cellular antioxidant defense system through Nrf2/ARE signaling pathway. Gummy bear is composed of hydrocolloids which adds to the gummy nature of the product. Agar-agar is a flavourless, thickening agent from seaweed which provides a unique chewy texture which replaces gelatin. AST used in Gummy candy preparation showed maintaining basal levels of intracellular ROS in H2O2-induced oxidative stress in L6 skeletal cells measured using probe 2′,7′-dichlorofluorescin-diacetate proving its antioxidant potential without pro-oxidant capacity unlike other carotenoids. Almond oil is used as an effective dispersing agent for lipophilic Astaxanthin enhancing organoleptic property. Hydrocolloid and almond oil can slowdown AST degradation and improve shelf life. This is a comparative study to evaluate texture and sensory characteristics with natural sweeteners like agave, honey, and sugar. Effects of processing parameters on physicochemical properties of AST gummy candy were evaluated. Hydrocolloids and additives used in Gummy Candy act as a source of low calorie and used as an appealing encapsulating matrix supplementing the nutritive value.

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Key words:

Natural Astaxanthin, keto-carotenoid, antioxidant, Agar-agar, Almond oil, Hydrocolloid, Gummy candy

Biography:

1] Archana K S, born on 26-10-1999, currently pursuing fourth year B.tech Biotechnology at Kumaraguru College of Technology, Coimbatore.A passionate content writer in a start up called Young Ones and in a studio named iconic studios. A Biotechnology student who is inquisitive in gaining knowledge, skill and experience in the field of research and looking forward to build a great profile and career.

2] Shilpa S born on 08-March,2000.Currently pursuing fourth year B.Tech Biotechnology at Kumaraguru College Of Technology, Coimbatore. Awarded for two consecutive years with MG (Mahatma Gandhi) scholarship award for the year 2019 and 2020. A dedicated student who is curious to explore in the field of Biotechnology to enhance knowledge and skills . Hoping to develop a prominent career.

Developing Immunonutrition with the Help of Micronutrients

N.Sasirekha

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Dr.S.Kowsalya

Registrar, Professor, Department of Food Science and Nutrition, Avinashilingam Institute of Home Science and Higher Education for Women, Coimbatore, India

Abstract

The recent pandemic has been one of the major disease outbreaks. At present the research community is investigating all the scientific resources to prevent and to defeat the coronavirus. The interrelationship between nutrition and immunity has been increased lot of attention in this pandemic. A healthy immune system is essential to help the body fight against various infections and attacks by viruses and bacteria. The best way to build up your immunity is the food based approach. Immunonutrition helps in modulating the activity of immune system by nutrients or specific food items consumed in required quantities (RDA). Prevalence of malnutrition is more in patients hospitalized and higher in patients admitted in the ICU during Covid-19. Bioactivity of the foods we eat also play a major role in providing immunonutrition. Micronutrients act on the layers of immune system. The results have been shown in COVID patients that 25% of Vitamin A, D, and C has increased the generation of antibodies. 20% of Zinc is itself an inflammatory and involved antibody production and maintenance of immune tolerance. 20% of Vitamin D& Vitamin K are the crucial factors. Other micronutrients (35%) helps in maintaining cellular immunity. Low levels of some of the nutrients such as Vitamin A, D, and zinc were associated with prolonged hospital stay and increased mortality or the intensive care support for the patients. The present observations in this study seeks to answer the role of immunonutrition in enhancing the immune system in patients affected by covid-19 and also focusing on the healthy individuals to converge towards a healthy lifestyle in developing immunity and maintaining throughout life.

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Biography

My name is N. Sasirekha, and I am a PhD Research Scholar, I am an accomplished researcher and I enjoy using my skills to contribute in the exciting field of research. I completed my under graduation in Home science with specialization in Food science and Nutrition continued Post graduation in 2019 with distinction and also received Pratibha award. I like to share knowledge so developed myself as a content developer and creating awareness on health and nutrition on social media. In my free time I like to travel, taste various foods and play badminton.

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Health Functions and Safety of Red Yeast Rice

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Abstract

Red yeast rice, made by growing *Monascus* on rice, has been widely used as food materials in China, Japan, and Taiwan. Food materials made from red yeast rice have been utilized as medicinal foods and natural coloring agents for yellow and red colors. In recent years, the health function of red yeast rice has attracted attention and being used as supplements. *Monascus* produces a wide variety of secondary metabolites. Monacolin K has a sharp cholesterol-lowering effect. Furthermore, azaphilone pigments are reported to have anti-obesity effects and preventive effects against Alzheimer's disease. The use of red yeast rice that produces monacolin K and azaphilone pigment is expected to be useful for food that has various functionality. On the other hand, *Monascus* produces citrinin, a mycotoxin that causes nephrotoxicity and the use of red yeast rice that produces

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citrinin should be avoided. Therefore, *Monascus*, that safety and health functions have been studied, is recommend to be used in functional foods.
We have previously reported on the health functions and safety of red yeast rice. In this presentation, we introduce our latest findings, focusing on health functions of red yeast rice in cholesterol-lowering and comparative genomic analysis and safety of red yeast rice.

Biography:

Master of Science, Osaka University, Osaka, Japan. 2016. Doctor cours of Science, Nara Institute of Sceience and Technology. 2020 ~ current. Kobayashi Pharmaceutical Co., Ltd. Central Research Institute Researcher. 2016 ~ current. Majors: Structural Biology, Analytical Chemistry, Natural Product Chemistry, and Lipid Metabolism. Research theme: Study of health effects in the lipid metabolism area of *Monascus*. Mail address: y.higa@kobayashi.co.jp

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Nutritional Quality of Millets and their Value Added Products with the Potential Health Benefits: A Review

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Abstract

Raising population at global level needs solving the problems related to food and health due imbalance use of fast foods of high calories. The problems of obesity, diabetes, cardiac arrests, porous bones, depressions etc. are so called general diseases of modern era. So many cereals are available which economically feasible and tasty but not healthy. At present people are very conscious with health. Millets are one of the best solution to found highly nutritious and health benefits in pandemic era. Researchers are proving that millet has a better option to other cereals. It contains

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energy, protein, vitamins, minerals and phytochemicals. Value added products of millets are possible to solve negative effect of agriculture and food security. So the review focused on millet nutritive value, health benefits, processing techniques with their value added products to enhance consumption of health.

Key words
Millet, Processing, Nutritive value, Value added products, Health benefits

Biography
I am currently Project Fellow in NIHEP-CAAST-NC Project, CSAUAT, Kanpur. She has completed Ph.D in Food Technology, Post graduation in Food Science and Nutrition from Bundelkhand University, Jhansi. Graduation from C.S. Azad University of Agriculture &Technology, Kanpur. She has 04 years teaching experience and 03 years in research work. She has published 10 research and review paper in national & international journal and also presented 10 research and review paper. One Book and three chapters published. As a reviewer of Current Journal of Food Science International.

Duckweed as a Future Food: Evidence from Metabolite Profile, Nutritional Analysis and Antioxidant Activity

Nazariyah Yahaya

Food Biotechnology Programme, Faculty of Science and Technology, Universiti Sains Islam Malaysia (USIM), Negeri Sembilan, Malaysia

Abstract

Duckweed species have high nutritional value and potential to be used as future food. In this study, we report an untargeted Gas Chromatography-Mass Spectrometry (GC-MS)-based metabolomics approach for comprehensively discriminating between *Lemna minor and Wolffia globosa* of duckweeds species. Ten differential metabolites level were tentatively identified between *L. minor* and *W. globosa*. Relative to *W. globosa*, *L. minor* appeared to enrich with 5-Hydroxyl-L-tryptophan, Tocopheryl acetate, Naringenin, α-linolenic acid and glutamic acid. Furthermore, antioxidant activity of *L. minor*, the nutritional value and microbial analysis of ice cream formulated with dried duckweed were investigated. The result of nutritional analysis shows that, relative to the ice cream without dried *L. minor* (0%), the ice cream with 2% dried *L. minor* had significantly increase of protein, fiber and ash content throughout the 30 days of experiment. In addition, total plate count (TPC) for microbial analysis of duckweed ice cream was performed and the result suggested that the small amount of bacterial (6.67 x 10^3 cfu/g) was traced in formulated ice cream with 2% of dried *L. minor*. Overall, the metabolite analysis, nutritional value and microbial analysis of food used *L. minor* plant indicates that duckweed is a good candidate for future food.

Biography

Nazariyah Yahaya is a senior lecturer in Food Biotechnology Program, Faculty of Science and Technology, University Sains Islam Malaysia. She has Ph.D in Plant Science from University of Sheffield, United Kingdom, MSc in Molecular biology and BSc in Genetics, which both from National University of Malaysia (UKM). Currently, she actively do research on related to duckweed plants as an ingredient for future food and also as a biological model to study plant-microb interaction. In addition, she also involves in research related to cucumber disease, which related to plant-pathogen interaction.

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Incorporation of Oyster Mushrooms (Pleurotus sajor-caju) in Flour-Based Foods Ameliorating the Postprandial Glycemic Response of Healthy Individuals

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Universiti Sains Malaysia, Malaysia

Abstract

Presently, the prevalence of non-communicable diseases (NCDs) is increasingly growing with the number of diabetic people expected to increase from 171 million in 2000 to 366 million in 2030. An increase in the quantities and varieties of fibre-containing foods may prevent or treat many of the NCDs. The typical recommended intake of dietary fibre levels is 20-35g/day. Nevertheless, the usual intake for dietary fibres among particularly Malaysian populations is low, which is only 16g/day. Theoretically, the dietary fibre enhances the glycemic response by raising the rate of absorption of glucose in the small intestine, thereby lowering the glycaemic index (GI) value. Our research reveals that incorporation of agro-residual materials from the oyster mushroom in a few processed food products such as cookies, pasta, cakes, muffins and flatbread already successful and scientifically proven in improving the composition of dietary fibre and other essential nutrients. Besides, addition of oyster mushroom in some bakery products has resulted in lowering the GI values while not jeopardizing the sensorial acceptability. In brief, low-grade grey oyster mushroom exhibits similar functionality as its premium grade and easily added into various selected food products which are not only tasty but also nutrify and healthful.

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Biography

Our research activities include the development of functional foods which are containing dietary fibres and low glycemic index (GI) products for health-conscious consumer and diabetes individuals. The strategy is focuses on the total concept of food, which uses all parts of edible items of natural products including vegetables. We also investigate the ability of oyster mushroom as a functional food ingredient; cucurbit fruits as anti-hyperglycemic and prebiotic agent; brown-rice and brown-rice based products as an alternative staple food to reduce obesity and diabetes. With regards to the publication, we have published more than 110 journals in various international journal.

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Bacteriocin Production by Lactobacillus Rhamnosus Cw48 and Its Biopreservative Efficacy

Dr. Harshada Joshi
Department of Biotechnology, Mohanlal Sukhadia University, Udaipur, India

Abstract

Bacteriocins are proteinaceous compounds that exert antibacterial activity against pathogenic organisms which justifies their biotechnological potential. Bacteriocins have wide applications including food preservation and therapeutic purposes. In the present study bacteriocin production by *Lactobacillus rhamnosus* CW48 along with the microbiological and physicochemical properties were examined in the skim milk during refrigerated storage. *L. rhamnosus* CW48 was isolated from cow milk and was identified by molecular and biochemical methods. The isolate showed significant antibacterial activity against *Bacillus cereus* and *Escherichia coli.* The antibacterial activity was retained even after treatment with protease enzyme which confirmed the production of bacteriocin activity. *L. rhamnosus* CW48 produced fairly high titer of bacteriocin (2048 AU/ml) at 37˚C in MRS broth with an intial pH 7.0 after 48h of incubation period. The isolate maintained good viable count in skim milk at 4°C and -20°C upto 10 days of storage. The titrable acidity and protein content of ***L.*** *rhamnosus* CW48 in skim milk was 2.7 % and 28 mg/ml respectively at 4°C after 20 days. The results indicate that the bacteriocin of *L. rhamnosus* CW48 could be promising candidate for future application in food preservation.

Biography

Dr. Harshada Joshi is Associate Professor in Department of Biotechnology, Mohanlal Sukhadia University, Udaipur (Raj.) India. She did her M.Sc. in Biotechnology in 2000, worked as CSIR- NET JRF & SRF and subsequently was awarded Ph.D. degree from the same University in the year 2004. She is actively involved in teaching and research in Biotechnology from last 15 years. She has taught Microbiology, Genetic Engineering and Fermentation Technology both at Post Graduate and Under Graduate levels. Her research interests include Molecular and Applied Microbiology & Environmental Microbiology. Six students have been awarded Ph.D. under her supervision and five are working. Dr. Harshada has been awarded and successfully completed three research projects funded by different government agencies. She has authored six books and has published more than 60 research articles in

journals of national and international repute. She has presented her research findings in several conferences and symposia in India and abroad. She has visited France, Belgium and Netherlands in connection to academic pursuance. She is member of several professional and academic bodies.

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Effect of Supplementation of Multigrain Laddo for Malnourished Children under 3 to 5 Years

Dr. Rosy Kumari
Patna Women's College, Patna University, India

Abstract

Malnutrition is one of the greatest single threats to the world's public health among children in developing countries according to World Health Organization. It affects the child at the most crucial period i.e. stage of development, which can lead to permanent impairment in later life which includes reduced work capacity, growth retardation, and poor social and mental development. Half of all child deaths in India could be prevented if this one issue is tackled. Almost 11 million children die before they reach the age of five, four million of them in the first month of life. It is a significant public health problem described as a silent killer, silent emergency and invisible enemy affecting those who cannot express their voice and have to depend upon others for their advocacy. The main objective of this study is to determine the effect of supplementation with the selected product on the nutritional status of the selected malnourished children. A baseline survey was conducted in four villages of Allahabad District, U.P. A total number of 382 respondents were selected (187 girls and 195 boys) for the present study. They belong to age group of 3 to 5 years. Four products were prepared with the help of incorporation composite flour. For each product, the basic recipes (control T0) have three variations T1, T2, T3 respectively, were incorporated at different levels. The products like Laddo, Biscuit; Mathri and Chakli were developed. After supplementation, it is evident to note that there was a statistically significant improvement at one per cent level and it was observed in the experimental and there was no increment in the weight of the selected subjects in the control group.

Keywords

Supplementation, Nutrition, Intervention

Biography

I am Dr. Rosy Kumari from India. I have done B.Sc. in Clinical Nutrition and Dietetics from MDDM College, M.Sc. in Food Nutrition and Dietetics from Allahabad Agriculture College and Doctorate in Food and Nutrition from SHUATS, Allahabad, India. I have published various research papers associated with my work in UGC approved journals. I have presented my papers associated with research work in national and international conferences. I had experience of working as Joint Secretary for RUSA Sponsored National Seminar. Currently I am working as an Assistant Professor in P.G Department of Home Science, Patna Women's College, Patna, Bihar, India.

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23rd – 24th September 2021

Germination efficacy of adzuki bean (Vigna angularis) and the associated changes in the nutritional and functional properties of adzuki bean flour

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Abstract

Adzuki bean (*Vigna angularis*) is an annual bushy crop which belongs to the *Fabaceae* family and commonly consumed in South Asian countries. In India, its consumption is limited to local communities of Himalayan and North-east region. The aim of the present study was to investigate the changes in the physical (radical length, germination efficiency and weight loss), nutritional (protein, crude fiber, carbohydrates and minerals) and functional (water holding capacity, oil holding capacity) properties of adzuki bean germinated for 24, 48 and 72 h, respectively. Germination efficiency increased significantly ($p \leq 0.05$) from 77.34 ± 1.26% for 24 h germinated beans to 98.55 ± 0.48 for 72 h germinated samples. Similar trend was also noticed for radical length and weight loss of grains which increased significantly ($p \leq 0.05$) with the germination period. Further, the protein and crude fiber content of adzuki bean increased while carbohydrate content decreased significantly ($p \leq 0.05$) with the germination time. Mineral (Ca, Fe and Zn) content of germinated flour was significantly ($p \leq 0.05$) higher as compared to ungerminated counterpart. Significant ($p \leq 0.05$) improvement in water holding capacity and oil holding capacity was also observed for adzuki bean flour upon germination. In conclusion, germination is an effective processing strategy for modifying the properties of adzuki bean flour.

Practical significance: Germination process can be utilized as a natural bioprocessing method for obtaining flour with modified nutritional and functional properties which offers opportunity for its further application in development of functional food product.

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Biography

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4th International Conference on
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23rd – 24th September 2021

Neolamarckia cadamba (Kadamba) - An Underutilized Plant with Multiple Health Implications

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University of Calcutta, India

Abstract

The link between economic progress and environmental devastation and the coexistence of poverty, malnutrition, and their related impacts are the main challenges today. Economic development has failed to maintain the population's nutritional level, resulting in a search for inexpensive and healthy foodstuffs that are wasted due to ignorance. The incidence of malnutrition can be minimized to a certain extent if they are used properly. Numerous plants have been used medicinally for several millennia. Kadamba is a tropical evergreen ayurvedic medicinal plant found in South Asia and Oceania and is described in numerous ancient medicinal texts. The bark of the plant is said to have bitter, sweet, acrid, pungent, astringent, febrifugal, digestive, constipating, and carminative, anti-inflammatory, diuretic, expectorant, and antiemetic effects, and is used to treat fever and eye infection. Flowers are used as vegetables among different tribal populations. Although the leaves are mildly aromatic and have an unpleasant flavour, the decoction of the leaves is beneficial for healing wounds, treatment of ulcers, and metrorrhagia. Additionally, it is beneficial for treating snake bites. Thus, the paper aims to throw light on all existing literature on the various components of *N. cadamba* by referring to their traditional applications, chemical and phytoconstituent composition, physicochemical features, and a summary of their numerous nutritional and medicinal benefits.

Biography

Imana Pal, a Research Scholar in the Department of Home Science (Food and Nutrition), University of Calcutta, Kolkata, India. She has teaching and research experience in the field of Food and Nutrition for about 10 years. Her research papers were published in several national and international journals. She has presented papers at various national and international conferences. She can be reached at imana.pal09@gmail.com

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Quantitative Analysis and Identification of Total Polar Compounds in Frying Oils Used by Local Snack Retail Shops in Delhi, India

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Dr. Aparna Agarwal
Assistant Professor, Department of Food and Nutrition, Lady Irwin College, University of Delhi, New Delhi, India
Anjana Kumari
Assistant Professor, Department of Food and Nutrition, Lady Irwin College, University of Delhi, New Delhi, India

Abstract

Cooking oils when exposed to high temperature for deep frying process coupled with repetitive heating deteriorate the quality of oil and release toxic products that are readily absorbed by the food material. In this study, average number of 20 cooking oil samples were collected and analyzed for major physicochemical parameters like total polar compounds, free fatty acids, peroxide value, insoluble impurities and specific gravity to determine the extent of degradation. These oil samples heated under different conditions to prepare various food products. In addition, a structured questionnaires were administered to the food vendors where the general characteristics and frying oil usage practices were recorded. All these parameters were conducted according to the standard procedures. The higher range of values was observed when compared to standards such as Codex Alimentarius 2001 codex standard for named vegetable oils
cx-stan 210 – 1999 and FSSAI Regulations 2011. The key determinant the total polar compounds were in the range of 27.5- 32.2 % in different samples of oils that exceed 25 % to an intolerable limit in vegetable oils according to FSSAI regulations 2011 due to inappropriate frying oil usage practices. The

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guidelines, government policy and principals should be formulated to keep a check on quality control and to inhibit the distribution of degraded oil based fried food products.

Key words
deteriorate, physicochemical, questionnaire, standards

Biography
My names is Ratnika Prakash, Msc (scholar) from Lady Irwin College, Delhi University. I have completed my masters in Food and Nutrition with specialization with food science and processing. I am a certified food safety supervisor and a food science professional. I have experience in nutrition analysis, food safety and quality control, nutrition therapy and research writing. I am a keen participator and volunteer. I am dedicated towards social service, as community nutritionist with Sahayata Foundation, Bangalore to benefit the public health nutrition and healthcare among the vulnerable groups. Currently, I am working in a corporate wellness company as a Consultant Nutritionist to motivate people and formulate diet plans lead a healthy lifestyle with a holistic and sustainable approach.

Effect of Diet in relation to cardiovascular disease

Disha Santwani
Jiwaji University, India

Abstract

A healthy diet not only lowers your risk of cardiometabolic diseases, but of many more disorders such as cancer, bone fractures, and depression. Adopting a healthier diet has no adverse side effects and improves your physical and mental wellbeing .When talking about a dietary pattern, it includes the combination of foods and drinks that are habitually consumed by an individual, over a longer period of time. It includes main meals such as breakfast, lunch and dinner, even ordinary snacking. All foods and drinks act together to produce health effects. Plant based diet can definitely be a great idea comparative to animal based. It's important to consider the level of intake and processing of these foods. Adding salt, sugar, and trans fatty acids and destroying dietary fibres is not a good idea. A well-known dietary pattern that is often promoted for cardiovascular health is the traditional Mediterranean diet. Let's us evaluate how effective these diet plans are and for what kind of people.

Biography

I am an Indian, I have completed MSc in food technology and trying to gather more and more knowledge in the field of Nutrition as I have a keen interest in it. Learning with the help of few authorized books, research papers and few online classes, and would love to explore as more as I can.

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Development and Organoleptic Evaluation of Chocolate Coated Multi-Millets and Oilseeds Recovery Bites for Athletes

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Karuna Singh
Department of Nutrition and Dietetics, School of Allied Health Science, Sharda University, Knowledge park III, Greater Noida, Uttar Pradesh, India

Abstract

Recovery after heavy training is important to alleviate fatigue and decrease the incidence of injury. Nutrition plays an important role in muscle glycogen and protein resynthesis post- training. Millets, nuts, and seeds are rich in macronutrients, micronutrients, and phytochemicals and help in reducing the oxidative stress that can be caused by strenuous training for a long duration. The bites were formulated using different millet flours (bajra, jowar, and amaranthus), soybean flour, nuts (almond, walnut, cashew nut, and black raisins), and oilseeds (white and black sesame seeds, pumpkin seeds, flaxseeds, and melon seeds). Jaggery and maple syrup was used as the sweetening agents. The bites were later coated with a mixture of cocoa powder, chocolate syrup, and dark chocolate and freeze. Nutritional and organoleptically evaluated was done for the developed bites. The organoleptic assessment was done using the 9-pointer hedonic scale revealed that the bites were liked very much for colour, taste and appearance. The overall acceptability was found to be 8.1±0.3 by maximum panelists. The nutritive value per 100 g for energy, protein, carbohydrates, fat, iron, zinc and calcium was 1707±20.7 kJ, 11.3±2.3 g, 49.6±4.9 g, 17.8+1.3 g, 4.2+0.8 mg, 1.8 ±0.32 mg, and 141.3±1.4 mg respectively. Therefore, the developed recovery bites were well accepted and can be recommended for the athletes between the window period of recovery as the bites were found rich in protein and other minerals which help in recovery process along with energy fulfillment.

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Keywords
Athletes, energy bites, millet, nuts and oilseeds, organoleptic evaluation

Biography
Post graduation from Institute of Home Economics, University of Delhi
Pursuing PhD (Nutrition and Dietetics) from School of Allied Health Sciences, Sharda University.
Work experience of more than 5 years Certified diabetes educator
Certified ISAK Level -1 anthropometrist Certified sports nutritionist

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Sensory and Nutritional Analysis of Ready to Cook Food Product for the Elderly People

Vyoma Agarwal
IIS (Deemed to be University), Jaipur, India
Ila Joshi
IIS (Deemed to be University), Jaipur , India

Abstract

With ageing the ability to chew decreases because of a lowered functioning of the tongue, decreased saliva and weaker biting due to loss of teeth. There is reported increase in the risk of an inadequate nutrient intake because of these difficulties. The present study was undertaken to develop ready to cook traditional Indian sweet snack, sweet pudding (halwa) mix for the elderly people, by incorporating foods rich in protein, micronutrients, antioxidants and fibre. The value addition of the control recipe was carried out in two stages – Value addition Stage I which included processing of cereals and pulses (malting of wheat, finger millet and green gram whole) and combining their flours in varied proportions. Value addition stage 2, where processed fruits, nuts and oilseeds were added to the control sweet pudding mix to make it micronutrient rich. The developed sweet pudding, having combination of finger millet and green gram (45%) and whole wheat flour (55%), respectively was found to be the most acceptable on the basis of 9-point hedonic scale in value addition stage 1. This variation was then treated as control for Value addition Stage 2. In this stage, the variation at 30 per cent was found to be the most acceptable organoleptically. The developed sweet pudding mix consisted of jaggery and fruit sugar as the sweetening agent and was reconstituted with addition water and heating. The final selected sweet pudding mix was analyzed for its nutrient content and assessed for its shelf life.

Biography:

I am working as Assistant Professor in Department of Home Science, IIS (Deemed to be University), Jaipur for the past 5 years and have a total experience of 8 years. I am a lifetime member of Indian Dietetics Association and Nutrition Society of India. I have published 8 papers in peer reviewed journals. I have applied for two patents. I have guided students for their M.Sc. dissertation.

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23rd – 24th September 2021

Arrowroot Bagasse Flour Nutritive Analysis and Its Products: Chewy Cookies and Brownies

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Marinduque State College, School of Business and Management, Philippines

Abstract

Arrowroot (*Maranta arundinacea L.*) often called as indigenous plant in the West Indian Island which also grows in the Philippines. In Marinduque, a heart shaped island located south of the Luzon region, arrowroot gained economic importance and values known for arrowroot cookies which became a favorite delicacy among locals as well as food gift/souvenir for tourists and visitors of the province. The arrowroot starch is pure, highly soluble and gluten free starch that is mainly used in the production of the well-loved arrowroot cookies.

The arrowroot starch is extracted from the fresh rhizomes; however, a big percentage of the rhizomes called bagasse go to waste and is not being utilized. Converting the grinded rhizome or bagasse into flour foresees a competitive advantage considering its nutritional value and is a viable substitute from other existing flour for the preparation of pastries like cookies and brownies.

Results of proximate analysis of arrowroot flour were comparable to arrowroot starch. Carbohydrates were found higher as compared to wheat flour & all-purpose flour with significant level of potassium. There is also high level of dietary fibre and is comparable with fibre present in coconut flour. While as compared to oatmeal, arrowroot flour has slight difference in calories, higher in carbohydrate, lower in protein and sodium but higher in calcium and potassium, with no fats, less sugar and has allot of dietary fiber. Both the Arrowroot chewy cookies and brownies have shown sufficient level of calories. Whilst carbohydrates, calcium and dietary fibre are among the elements with higher value from these products.

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Biography

Mr. Carlo Magno Castro is a faculty of the School of Business and Management of the Marinduque State College and teaching subjects in Entrepreneurship and Tourism Program. He also specializes in food processing, baking and product development and manages his own bakery business.

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Effect of Natural UVB Irradiation on Vitamin D2 Content of White Button Mushrooms

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Ila Joshi
IIS (deemed to be University), Jaipur, India

Abstract

Button mushroom (*Agaricus bisporus)* is one of the most important commercially cultivated mushrooms in the world. High concentrations of ergosterol are present in the cell walls of Button mushroom. When exposed to UV radiation through natural or artificial source, ergosterol in the cell wall is transformed to pre-vitamin D2, which is then thermally isomerized in a temperature-dependent process to ergocalciferol (vitamin D2). This study aims to understand (i) the effect of natural UVB irradiation on the white button mushroom powder in enhancing the vitamin D2 content. (ii) the effect of sun exposure on the nutritive value of the prepared button mushroom powder.

Freshly harvested button mushrooms were sliced and divided into two groups. The first group was irradiated with natural UVB radiations from sunlight on a sunny day for three hours and the second group was left untreated. Button mushroom powder was prepared after drying the slices in hot air oven. Vitamin D2 as well as other nutrients were estimated using standardized techniques in triplicates. Vitamin D2 content in irradiated Button Mushroom Powder (IBMP) was significantly higher ($p \leq 0.05$) compared to non-irradiated button mushroom powder (NIBMP). A significant increase ($p \leq 0.05$) was noted in the moisture, ash and fibre content in IBMP. There was no significant difference between the mean protein, calcium and iron content of IBMP and NIBMP.

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Biography

I am Simran Singh, Assistant Professor in Department of Home Science, IIS (deemed to be University) Jaipur. I have been teaching Food Science and Nutrition in various colleges of repute from past 15 years. Besides MSc. In Food and Nutrition, I have done courses in Public Health, Bariatric Nutrition and Food Safety. My research interest lies in Food Product development, Clinical Nutrition and role of nutrition in non-communicable diseases.

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Maternal Dietary Protein Intake Adequacy, Exclusive Breastfeeding and Malnutrition among Infants below 24 Months

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UCSI University, Malaysia
Vaidehi Ulaganathan
UCSI University, Malaysia

Abstract

A high prevalence of maternal dietary deficiency and exclusivity of breastfeeding are most commonly evaluated in terms of growth as well as other functional outcomes such as immune response and neurodevelopment. Proteins are vital for the growth and development of every infants and the only way to obtain adequate protein was through the breastmilk especially among infant who were exclusively breastfeed. This study aimed to assess the association between maternal dietary protein intake adequacy, exclusive breastfeeding and malnutrition among infants below 24 months. This analytical cross-sectional study was conducted among 445 mothers and infants in selected health clinics in Petaling District, Selangor Malaysia. All data were analysed using SPSS. The prevalence of exclusive BF was 57.7%. The prevalence of wasting was 12%, stunting was 30.2%, underweight was 42.2%, thinness was 15.9% and overweight was 15.5% among the infant below 24 months. The prevalence of stunting among non-exclusively breastfeeding mother was 40.7% (X^2= 6.61, p = 0.010). Mean dietary protein intake of mothers was 80.04g per day; 83.31g per day in exclusively breastfeeding mothers and 76.70g per day in non-exclusively breastfeeding or formula feeding mothers. A higher proportion of mothers have insufficient dietary protein intake. There are 67.1% of infants were stunted among mothers with insufficient dietary protein (X^2 = 13.62, p <0.001), while 68.6% of infants were overweight among mothers with insufficient dietary protein (X^2 = 4.52, p = 0.034). In conclusion, Maternal protein inadequacy adversely affects the growth of the infants, and prolonged exposure may further impair the immune function, in turn increase their risk of infectious episodes.

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Biography

Kughaneshwary Silvermany is a Postgraduate student, currently on her 1 st year in Master in Science (Applied Science) at UCSI University located in Cheras, Kuala Lumpur. She has a Bachelor Degree in Nutrition (Hons) from Management and Science University. The current study she is working on is 'Development Of E-Learning Module to Promote Healthy-School Food Environment Among Adolescents in Secondary School (Shine-Module) (School: Healthy & Improved Nutritional Environment E-Module)'. And previously during her undergraduate studies she have done a research on 'Mother's Feeding Choices and the Effect on Infants Growth Status in Petaling District, Selangor. She also had actively presented her research data orally at Nutrition Society of Malaysia: 34th Scientific Conference, 10th National Pediatrics, Research Conference, 13th Asian Congress of Nutrition (Acn) 2019 and poster presentation at 14th edition of its International Medical, Pharmaceutical, Cosmeceutical, and Health Science Symposium.

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Development & Nutritional Evaluation of Extruded Products from Quality Protein Maize (Zea mays L.)

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Asha Kawatra
Professor, Department of Foods & Nutrition, I.C. College of Home Science, Chaudhary Charan Singh Haryana Agricultural University, Hisar (India)

Abstract

Globally maize is the third most important cereal crop after wheat and rice. It not just provides nutrients for humans and animals but also serves as a basic raw material for the industrial production like starch, oil, food sweeteners like corn syrup, protein, alcoholic beverages, and, also fuel. The growing population throughout the world and the growing demand for processed and value added foods that are rich in energy and other nutrients has provoked substantial interest in the cultivation of maize crop whose full potential is yet to be exploited. Two extruded products viz. vermicelli and pasta were prepared from normal white maize HM-5 and white quality protein maize (QPM) Shaktiman-1. The formulated products were evaluated for their organoleptic attributes on the 9 Point Hedonic rating scale by a panel of ten judges. The products that were most acceptable were selected for nutritional composition analysis for proximate composition, *in-vitro* starch digestibility, *in-vitro* protein digestibility and anti-nutrients. The crude protein content, *in-vitro* protein digestibility of QPM products was significantly higher than normal maize products and control products. In terms of anti-nutrients the content of phytic acid was high in maize based extruded products while total polyphenols were lower. The nutritional advantages of quality protein maize *vs.* common maize and refined wheat flour are of a magnitude that must be exploited for the advantage of population in maize-consuming poor countries.

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Biography

Dr. Vishakha Singh is serving as Assistant Professor in Dept of Food Science and Nutrition at MPUAT, Udaipur, (Rajasthan), India. She has an experience of more than 15 years of research, teaching and extension. She has developed about 9 technologies and guided many Masters and PhD theses. To her credit she has about 20 publications in peer reviewed indexed journals, many book chapters and monographs, delivered talks and lectures as a resource person, attended many international and national seminars / conferences. She has successfully organized many refresher courses, FDPs and webinars.

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Role of Nutrition Education in achievement of nutrition security

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Abstract

Nutrition security is the most precious possession and key to success in life which has to be earned by individual efforts. A person is said to be nutritionally secured when he or she is physically, mentally, socially well and free from any diseases which can be achieved by taking all necessary nutrients in proper amounts. Availability of food is necessary but not the sufficient condition to get nutrition security. Nutrition Security of a person is influenced by so many factors such as storage, preservation, utilization of nutrients from food, personal hygiene, knowledge of sanitation, clean drinking water practices etc. All these other factors can be influenced by giving a person nutrition education and training. Tharu tribe of West Champaran district of Bihar were selected for study because Tharu women were mostly illiterate. Illiteracy was the root cause of poor health of their children. Apart from this, poor income of their family also affected their nutritional status. Thus two hundred samples (Tharu Women) were selected for giving nutrition education and training. Nutrition Education regarding personal hygiene, correct cooking methods, sanitation, role of nutrients in health etc., were given for six months. They were also trained for making jam, jelly, pickles etc., to increase their income for six months. To evaluate the role of nutrition education in achievement of nutrition security, data regarding health of their children (children of Tharu Women) were collected before and after giving nutrition education.

Key Word

Nutrition Education, Nutrition security, Preservation, Hygiene, Sanitation

Biography

Prof. (Dr.) Renu Kumari, Professor, University PG Department of Home Science, B. R. A. Bihar University, Muzaffarpur, Bihar, PIN-842001. 25 years of teaching experience, Supervised 10 Ph.D students, Published more than 20 Journal papers.

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Makhana (*Euryale ferox*), an Aquatic Herb with Tremendous Health Benefits

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Saleem Siddiqui
Professor, School of Agriculture Sciences, Sharda University, Greater Noida, India

Abstract

Euryale ferox or Gorgon Nut or Fox Nut is an important aquatic cash crop found in East Asia to China and northeast India. It belongs to the family Nymphaeaceae and in India commonly known as Makhana. It has excellent medicinal and nutraceutical properties that promote overall health conditions. It is a good source of carbohydrates, crude fibers and micronutrients such as calcium, magnesium, iron, and phosphorus. It is also an excellent source of bioactive compounds like, flavonoids, polyphenols, essential amino acid, vitamin E etc. Because of plenty of antioxidants present, it helps in reducing the risk of several chronic diseases including cancer, diabetes, and heart-related problems. Euryale Ferox pops are widely used as traditional medicine to treat various ailments like leucorrhea, kidney and spleen problems, and severe diarrhoea. There are reports it helps in maintaining blood pressure due to high amount of potassium and a low amount of sodium present in it. Thus, Makhana can be considered as a good super food, which contains almost all the important components which help to have positive effect on human health. It can serve as an excellent raw material for food and pharmaceutical industries.

Key Words

Nutraceutical, Nymphaeaceae, antioxidants, flavonoids, polyphenols, *pharmaceutical*, leucorrhea,

Biography

Myself, Zoobiya Islam I have done my B.Sc. and M.Sc. from Bundelkhand University and pursuing PhD from Sharda university . My research area is, food product and development, Food safety, Food Science and Nutrition. Working as Assistant Professor in Sharda University from last 3 years

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23rd – 24th September 2021

Associated Factors of Dietary Pattern and Nutritional Status of Lactating Mothers Living In an Indian Settings

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Monika Thakur
Amity Institute of Food Technology, Amity University, Noida, Uttar Pradesh, India

Abstract

Lactating mothers were considered as nutritionally vulnerable group and it increases among low-income group. The nutritional status of women post pregnancy has a great significance on their own health and on the health of their neonates. Women are prone to a series of deficiency as compared to men due to several factors like socioeconomic status, reproductive age , low purchasing power and education status resulting in a high maternal mortality. This study was conducted with an objective to find out dietary pattern, nutritional knowledge, nutritional status among 300 low-income group, lactating mothers having 0-12 months of child by random sampling in Bisrakh Block of Noida, Uttar Pradesh conducted at Anganwadi. Collection of data was done via structured questionnaire to elicit data regarding socio-demographic parameters, nutritional knowledge, dietary pattern, food frequency and consumption of different food groups, dietary diversity etc. Anthropometric measurements and 24 hr dietary recall methods were used to collect data . The result depicted that majority of the subjects had low knowledge scores. The results for nutritional attitude showed that most of the subjects having low to medium attitude scores. Low practice scores appear to directly reflect the poor nutrition status of lactating women. Majority (59.8%) lactating mothers consume some galactagogues or specific food after delivery or during lactation. The dietary diversity score was found to be low as it come out to be 4 out of 14 food groups. The prevalence of underweight was found to be 23%, also severe stunting was found among 9 % mothers. There were significant correlations found between BMI, energy,

carbohydrates, fat and protein intake ($p<0.05$). Identification of key questions predicting maternal practice guides future interventions with mothers. On the basis of result obtained preparation of functional food (nutrimix) using natural ingredients were formulated which fulfil the requirements were formulated for the lactating mothers.

Keywords
Lactating mothers, Nutritional status, Nutrient Intake, functional food

Biography
Dr. Karuna Singh is at present a Professor (Nutrition and Dietetics) and Associate Dean in the School of Allied Health Sciences, Sharda University. Before joining Sharda University, she worked for 9.5 years at Amity Institute of Food Technology, Amity University, NOIDA. Dr. Karuna has done her BSc (Honours) Foods and Nutrition and M.Sc. (Foods and Nutrition) from Vanasthali Vidyapeeth, Rajasthan. She has done her PhD for CCS University in 2008. Dr. Karuna has a teaching experience of 17 years. She has guided 40 M. Sc (FN), M. Tech. (Food. Tech.) and B. Tech (Food. Tech.), 01 M. Phil and 4 PhD students. She has authored more than 35 research papers in journals of national and international repute.11 chapters in books and presented more than 40 papers in conferences. She also handled projects awarded by government agencies like DST, BIRAC. She also worked on various industrial consultancies. She has also work actively in organizing FDP, conferences and webinars. She is the life member of various reputed professional bodies like NIN, Mushroom society of India, Science congress etc.

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Estimation of Nutritional Composition and Sensory Evaluation of Fero Nutri Bars Developed Using Euryale Ferox (Makhanaseeds)

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ISBN: 978-81-951120-0-5

Abstract

Euryale ferox salisb also known as fox nut or gorgon nut are edible starchy white seeds which are locally known as makhana. The commercial value of makhana seeds lies in their popped form they tasty, good source of carbohydrate (starch), protein, minerals and many other nutritional ingredients. In spite of the unique properties Euryale ferox seeds, consumer awareness about the seeds and their nutritional benefits is very meager. Hence the study was designed to develop a fero Nutribar using Euryale ferox (Makhana Seeds) and estimate its nutritional composition and sensory properties. Development of Standard nutribar using oats, fero nutribar Variation I- partial replacement with Euryale ferox (makhana) 50% and fero nutribar Variation II- complete replacement with Euryale ferox (makhana) 100%. Sensory attributes (color, texture, aroma flavor and overall acceptability) of the developed products were evaluated by 15 semi trained panelist using a 9-point Hedonic scale. Mean sensory scores for preference given by the panelist to the sensory attributes such as color, texture, aroma, flavor using 9 point hedonic scale revealed that the sensory scores for all the sensory attributes ranged from like moderately to like very much as preferred by the panelist for all the Standard nutribar, fero nutribar Variation-I, fero nutribar Variation-II. Fero nutribar Variation-II had a higher mean score of 8.2±1.20 indicating a high overall acceptability.

Proximate composition (moisture, ash, carbohydrate, protein, fat, iron, calcium) of the standard nutribar, fero nutribar variation-I, fero nutribar variation-II were estimated. Comparison of proximates between standard nutribar and fero nutribar variation-II revealed a significantly higher concentration of crude fiber ($p=0.033$) and iron ($p=0.005$) in fero nutribar Variation II. Comparison of proximates between fero nutribar variation I and II revealed a significantly higher concentration of total fat ($p=0.01$) and calcium($p=0.005$) in fero nutribar Variation I, While fero nutribar (variation-II) contributed significantly higher levels of iron($p=0.005$). Makhana seeds have a promising future as a value -added alternate gluten-free protein supplement and potential nutraceutical and pharmaceutical source. The research findings suggest that popped Makhana seeds can be blended with the other food ingredients and recipes to enhance the nutritive value and taste of the products.

Keywords

Makhana seeds, nutribar, nutritional composition of eyurale ferox

Biography

Sahithi G is a student of first year M.Sc at the department of clinical nutrition and dietetics, Sri devaraj urs academy of higher education and research. Research interests- Product Development Clinical Nutrition And Dietetics Food Science

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Nutritional Composition and Sensory Evaluation of Cakes Prepared from Different Varieties of Locally Available Bananas

Shravani KA
Sri Devaraj Urs Academy of Higher Education and Research, India

Abstract

For herbaceous plants of the genus Musa and for the fruit they produce, banana is the common name. Many studies indicate that banana is the richest source of various nutrients that are beneficial to human health. Three banana varieties were studied for their chemical and nutrient compositions. In Rasakadali (23.2 Brix), TSS was found to be more, followed by Robusta (22.8 Brix) and Red banana (21.60 Brix). In Rasakadali , maximum acidity was noticed (0.71 percent). The highest carbohydrate content (30.73g/100g) was found in the Rasakadili variety, where the protein content was higher in the Red Banana variety (1.34g/100g). The overall mineral content of the banana varieties varied from 0.17g to 0.70g/100g and the maximum amounts of Na and K were found in varieties such as Rasakadali (260 mg/100g). The calcium level varied from 0.35-1.35 mg/ 100g for the chosen banana varieties. Using a 9-point hedonic scale, the sensory parameters were tested for market acceptability of the cake prepared using the banana Varieties locally available and the sensory findings were found to be important (5 percent level of confidence) among which the cake prepared using Robusta found more acceptable.

Biography

Myself Shravani KA, a 21 years old student from Sri Devaraj Urs academy of higher education and research, Karnataka, India. I'm perusing my master's degree in clinical nutrition and dietetics. I'm interested in research and I've done some studies on **Nutritional composition and sensory evaluation of cakes prepared from different varieties of locally available bananas** I would like to present it in the international conference.

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Shelf Life Study of Gluten Free and Sugar Free Jackfruit Seed Laddus

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Dr.B.M.N College of Home Science under S.N.D.T University, India

Abstract

A study was undertaken to standardize an innovative nutritious product and to see its customer acceptability. 'Jackfruit Seed Laddus' was the name of the product designed and its shelf life was studied for a period of 1 month. This multi nutrient food product was gluten-free and sugar-free. The main ingredients were jackfruit seeds, jaggery and coconut. This product was rich in carbohydrates, protein, B-vitamins and fibre. Shelf life study was done using a 5 point hedonic scale. Sensory evaluation was done on sensory attributes like appearance, aroma, taste, sweetness and texture/mouthfeel of the product by a scoring method on a 5 point hedonic scale. The other aspects studied were packaging, budgeting, nutritional labelling and marketing. The product was marketed using social media platforms. This product can prove to be beneficial for diabetes patients and can aid in improving gut health. The budget of the product was pocket friendly and can be a profitable venture. As per the conducted sensory evaluation for one month, this product lasted for 4 weeks if (refrigerated) stored in a cool dry place.

Biography

"Ms. Sakshi Mhatre is a first year master's in clinical nutrition and dietetics student at Dr.B.M.N. College of Home Science which comes under the S.N.D.T University, Mumbai. She did her bachelor's in Food Science and Nutrition from the same institution where she is popularly known for her leadership and literary skills. She aims to make the correct use of her education to make India free from malnutrition. She is interested in research which has led her to work on important areas such as immunity rich foods, military nutrition, nutrition education for special children and food habits of women during COVID-19"

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Nutritional and Medicinal Potential of Bottle Gourd: A Mini Review

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Malaysia-Japan International Institute of Technology, Universiti Teknologi Malaysia, Kuala Lumpur, Malaysia

Abstract

Bottle Gourd (Lageneria Siceraria) has widespread use as a vegetable in different parts of the world. It is extremely advantageous resource because it comprises lots of nutritional properties that are required for nourishment and which are necessary for health. Approximately it contains: Moisture: 94.5±0.06; Protein: 1.2±0.06; Fat: 0.2±0.02; Carbohydrate: 3.75±0.03; Fibre: 0.7±0.01; Ash: 0.5±0.01; Energy: 15±0.12. In addition, bottle gourd is rich in minerals like calcium, phosphorous and have good source of dietary fibres. Recently, the concentration on bottle gourd has been increasing as a nutritional element/health supplement in the diet due its action in the prevention and control of the diseases like indigestion, ulcers, stress, depression, and premature greying of hairs. Furthermore, bottle gourd also acts as remedy for diseases like insanity, epilepsy and nervous disorders and fibres present in it helpful in reduction of coronary heart diseases and diabetic occurrence. It contains high choline level which metabolites/metabolic precursors for brain function and vitamins, minerals and amino acids that are helps in synthesizing of neurotransmitters. In this review an insight is present on the effective properties, health related and other significance of bottle gourd in various food products as well as in pharmacological products.

Keywords

Bottle Gourd; Processing; Nutrition; Medicine

Biography:

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BTech in Civil engineering, Aligarh Muslim University (A.M.U), India
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23rd – 24th September 2021

Nutritional Efficacy for Recovery of Covid -19 Patients

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Abstract

The novel human coronavirus, (SARS-CoV-2), since its inception has infected humans in all age groups through communities at an alarming rate. Recent studies have shown that improper handling and processing may lead to surface contamination of the food and packages but till date there is no evidence that it can transmit through food. To support the immune system a good hygienic practice and healthy diet are highly required.

Our study is based on dietary efficacy for the prognosis of Covid 19 recovered patients of different age groups between 20-80 years. The data was collected from city hospitals in Kolkata, West Bengal continuously for 28 days after detection of Covid-19 infection in patients after ethical clearance from Department of Health, Govt of West Bengal. The data obtained categorized according to age, sex and different levels of comorbidity, analyzed statistically to observe the category of food that helps in faster recovery of the patients and compared to a group of healthy Covid negative adults for voluntary support with the same diet chart. The patients were informed about the study in their familiar language and data was taken through an approved questionnaire only from those patients who gave the written consent for the study. Beside food profiling Covid specific serum antibody levels were also collected in few cases where consent was given by patients after 28 days of recovery period.

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Biography

Presenting author, Dr. Susmita Chandra working in the field of Clinical Nutrition is currently a faculty of Department of Food technology, Techno India (TMSL). Her inhouse collaborator is Dr. Aditi Roy Chowdhury, Faculty of the same department. Among other collaborators Dr. Saptarshi Banerjee, is from NMHP, Mental Health Branch, Swathya Bhawan, Govt of WB is a state consultant in community medicine and Ms. Sankalita Satpathi, from Department of Health and Family Welfare, Govt of WB.

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Immunity Boosters against COVID-19 through Selected Micronutrients which also Protects from Adverse Pregnancy Outcomes.

Emi Grace Mary Gowshika. R
Women's Christian College, Chennai, Tamil Nadu, India

Abstract

The immune system has been negatively by coronavirus (COVID-19). This has been observed to significantly affect pregnant women causing adverse effects in them. This is found to be linked with micronutrient deficiencies along with the infections from coronavirus during pregnancy, leading to complications. The risk of micronutrient deficiencies is due to the malabsorption of selected micronutrients caused by COVID-19 infections. Therefore, immune functions are compromised either through micronutrient deficiency due to malabsorption or poor micronutrient consumption which ultimately makes the pregnant women much prone to COVID-19 infections and leading to pregnancy complications. The competency of the immune system are based on selected micronutrients like Vitamin A, C, D, E and selected minerals like Selenium (Se), Iron (Fe) and Zinc (Zn) which also play a significant role in protecting pregnant women from adverse complications. Adequate intake of these micronutrients in the form of diet or supplements could improve the pregnancy outcomes as well as strengthen their immune system. As a link is clearly visible between micronutrients, pregnancy outcomes, immunity and viral infections, this review is conducted to throw light on boosting immunity through these selected micronutrients to reduce adverse pregnancy outcomes among COVID-19 infected expectant mothers.

Biography

Emi Grace Mary Gowshika. R is a PhD Scholar from Women's Christian College, Chennai, India. She is also a Certified Pregnancy Nutritionist and is currently working as Consultant Nutritionist in Healthifyme Wellness Company and as Consultant Pregnancy Nutritionist in Shebirth. She had published few articles in Peer-reviewed International Journals relating to Nutrition.

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Prevalence of Malnutrition and Analysis of Related Factors in Elderly Patients with COVID-19

Anam Golandaz
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Vinny makhijani
Masina Hospital, India
Dr Chandan choudhary
Masina Hospital, India

Abstract

Introduction: The prognosis and recovery of elderly patients suffering with Covid- 19 were worse than that of young and middle-aged patients due to the poor nutritional. Therefore the aim pf the study was to evaluate the prevalence of malnutrition and its related factors in elderly patients with COVID-19.

Method: This was a prospective cohort study conducted on 102 elderly patients affected with covid-19 and admitted at Masina Hospital between July 2020 to October 2020. Mini nutritional assessment (MNA) were used to assess nutritional status of the patients. Patient's symptoms and biochemical parameter were also noted. Regression analysis was conducted to screen for risk factors for malnutrition.

Result: Majority of the patients 58.82% were male. The average age of the patient was 66.72±6.45 years. As per MNA grading, 47.05% were at risk of malnutrition, 24.50% were malnourished and 28.43% were having normal nutritional status. The most common symptoms observed were fever (89.21%), loss of appetite (70.5%), and change in sense of taste & smell (60.78%) and weight loss (77.45%). There were statistical differences in the incidence of co morbid diabetes mellitus, weight loss, length of hospital stay, albumin, hemoglobin, lymphocyte counts, C- reactive protein, D-dimer, Interleukin-6 and ferritin among the three groups (<0.001). Further regression analysis suggested that combined diabetes, and low albumin were independent risk factors for malnutrition.

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Conclusion: The prevalence of malnutrition in elderly patients with COVID-19 was high, and nutritional support should be strengthened during treatment, especially for those with diabetes mellitus and low albumin.

Keywords:
Nutritional status, Covid -19, Malnutrition, Mini nutritional assessment

Biography:
Anam Golandaz is Clinical Dietician working with Masina Hospital, India. She received a bachelor's degree in Food Science and Nutrition as well as a master's degree in Clinical Nutrition and Dietetics from SNDT University, India. She is a Certified Diabetes Educator. She published two research papers in Nutritional journals. Her area of Interests include nutrition therapy for oncology, dysphagia, geriatric nutrition, critical care nutrition and medical nutrition therapy for various diseases.

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23rd – 24th September 2021

Shift in Food Consumption Behaviour Due to Coronavirus (COVID-19) Pandemic

Abhimanyu Agarwal
MBBS Intern, Sardar Patel Medical College, Bikaner, Rajasthan, India
Dr. Nidhi Agarwal
Associate Professor (Food & Nutrition), Government M S College for Women, Bikaner, Rajasthan, India

Abstract

The novel coronavirus disease (COVID19) is a public health issue. It is a challenge that the world is called upon to face without any prior knowledge and preparation. With the new surges devastating the world and an increase in mortality and morbidity rate, the life of people has shattered. Subsequent lockdowns and social distancing measures imposed by the government authorities have forced the people to stay indoors. Education, employment, business, travel, healthcare, food purchase and eating behavior all have been largely impacted. The present survey was conducted online using snowball sampling technique, to study the impact of changes during pandemic in household activity, psychology and financial state on eating behavior and body weight. A total of 286 people responded including 100 females and 184 males while two of them didn't prefer to disclose their sex. Majority of the participants were vegetarian (87.4%) with a large number consuming three meals per day. Three-tenth of the responders (30.4%) reported an increase in their food intake during the pandemic times, 15% stated a decrease while a little more than half (53.1%) reported their food intake to be the same as before. Similarly snacking between the meals also increased for nearly one-third of participants. The data indicated that the pandemic has affected the life, psychology, and food intake of people to a great extent. The most important findings were increase in time spent on doing household activities (72.4%), impact on work/job (72.7%), decrease in feeling of financial security (30.42%), feeling of hopelessness (50.3%), loss of interest in daily activities (56.3%), increase in household conflicts (17.5%), and gain in body weight (29.7%). A significant association was observed between food consumption and feeling of hopelessness, household conflicts, enjoyment of happy moments happening in life, increase in body weight ($p<.001$), loss of interest in daily activities, feeling of being financially secure ($p <.01$) and change in household activity ($p <.05$). Increase in snacking habit and change in body weight ($p<.001$)

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also showed association. In the current scenario, lockdowns and social distancing protocols are important life saving measures needed to safeguard public health, but results indicate that they might cause significant changes in day to day activity, psychology, financial security and food behaviors.

Biography

Abhimanyu Agarwal, MBBS Intern, Sardar Patel Medical College, Bikaner, Rajasthan, India is presently doing one year compulsory rotation. With a keen interest in the field of research, he has two research publications to his credit. Recently he presented a poster at the international conference Experimental Biology 2021.

Dr. Nidhi Agarwal, Associate Professor, Government M. S. College for Women, Bikaner, Rajasthan, India has done her Masters in Food and Nutrition and a Ph.D. She has 25 years teaching experience. She has authored two books, published 6 research paper and presented paper/poster in 6 international and 12 national conferences.

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23rd – 24th September 2021

Dietary Choices and Consumption Patterns of Pro and Anti-Inflammatory Foods of Indian Women during the COVID-19 Lockdown

Madhavi Sathe
Smt. Maniben M.P. Shah Women's College of Arts and Commerce, Mumbai, India
Dr. Leena Raje
Smt. Maniben M.P. Shah Women's College of Arts and Commerce, Mumbai, India
Dr. Bharati Shah
Department of Food Science and Nutrition, SNDT Women's University, Mumbai, India
Dr. Shobha Udipi
Medical Research Centre- Kasturba Health Society, Mumbai, India

Abstract

An online survey was conducted during the lockdown in March-May 2020 on 1545 women residing in India, aged 18-81 years. The aim of the survey was to determine whether food choices, and consumption of pro and anti-inflammatory foods were altered by the lockdown. The respondents who were recruited by snowball sampling, were grouped into three age categories: young, middle aged and elderly and into seven occupational categories. Changes in meal patterns were reported during the lockdown: 37% respondents started consuming home cooked food for all meals, ordering food via delivery apps decreased greatly from 49.9% respondents before lockdown to 2.1% respondents during lockdown. Percent respondents consuming processed packaged foods decreased from 25.8 % to 11.4%. 48.4% women reported increased consumption of anti-inflammatory foods like vegetables and fruits. 40% women reported a decrease in consumption of foods such as candies, chocolates, cakes, desserts, Indian sweets, "chaat" and fried items. 59.6% reported an increase in water intake. Guidelines of AYUSH e.g., using spices in daily cooking, drinking warm water throughout the day, drinking "Golden" milk at least once a day were followed by 80.3%, 52.9%, 37.2% of women across all age groups,

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respectively; with no significant difference between age groups. The consumption of pro and anti-inflammatory foods and the changes in the choices were scored. The maximum score possible was 112 and a higher score indicated a favourable change. Data was analysed using the Kruskal-Wallis test. Scores obtained by the respondents varied between 6 to 90. Scores for purchase and consumption of specific foods were significantly higher for the elderly group (median score: 18 and 22 respectively) than the young adult group (median scores of 13 and 18 respectively) and middle age group with median scores of 16 and 19 respectively. In all three age groups diet pattern during lockdown differed significantly ($p < 0.05$) from women pre lockdown diet pattern.

Biography

Mrs. Madhavi Sathe is an Assistant Professor with the Department of Home Economics- Nutrition and Meal Management at the Smt. Maniben M.P. Shah Women's College of Arts and Commerce with 30 years of teaching experience. She is a Nutrition Consultant with the Committed Communities Development Trust (CCDT) an NGO working with HIV/AIDS affected women and children from the last 15 years. She is the IQAC coordinator at her institute.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Role of Micronutrients on Immune System Supporting to Fight against the COVID-19

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BR Abha Ayushree
Department of Food and Nutrition, College of Community Science, Dr. Rajendra Prasad Central Agricultural University, Samastipur, Bihar, India

Abstract
COVID-19 could be a severe illness that caused by the virus SARS-CoV-2, that is well transmitted to humans. However there aren't any vaccines or medication discovered to regulate its transmission and to avoid the illness. Therein case, it's vital to invention the strategies of preventing and dominant the illness COVID-19. The immune system is often energetic however if an individual becomes infected then the activity of immune system is raised to fight against the virus and obtain higher the body from infection. Through diet, adequate intake of micronutrients (vitamins A, B-complex, C, D and zinc, selenium, copper, iron) will facilitate to boost up the immune system as every of the nutrients that named higher than has roles in supporting antiviral and bactericide defense. It's necessary to produce the proper quantity of supplements once assessing the nutritional process standing of every individual as supplementation of micronutrient have some adverse effects whereas the supplementation of micronutrients will be given. Hence, it's recommended to follow a healthy diet to stop COVID-19 and conjointly assess the organic process standing of COVID-19 patients before prescribing treatments.

Biography
Jyotirmayee Sahoo, Ph.D. Research scholar, Department of Food and Nutrition, College of Community Science, Dr. Rajendra Prasad Central Agricultural University, Samastipur, Bihar,
BR Abha Ayushree, Ph.D. Research scholar, Department of Food and Nutrition, College of Community Science, Dr. Rajendra Prasad Central Agricultural University, Samastipur, Bihar, 8

ISBN: 978-81-951120-0-5

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Impact of Lockdown on Dietary Habits during Covid-19

BR Abha Ayushree
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Jyotirmayee Sahoo
Department of Food and Nutrition, College of Community Science, Dr. Rajendra Prasad Central Agricultural University, Samastipur, Bihar, India

Abstract
For optimum health and nutrition, a balanced diet is essential. Optimal nutrition can enhance well-being and may reduce the risk and morbidity associated with coronavirus illness 2019 (COVID-19), which is caused by a coronavirus combination that causes severe acute metabolic process syndrome (SARS-CoV-2). Access to fresh food has been limited since the start of the COVID-19 epidemic due to lockdown, and people are spending more time indoors and limiting their physical activity. Mainly, more time at home, on the other hand, may have resulted in some beneficial behaviors, such as an increase in cooking. In India, the COVID-19 epidemic has prompted modifications in conventional food purchase patterns and dietary habits. Due to the lockdown, people have become increasingly reliant on cheaper meals (e.g., more rice with less meat, eggs, vegetables and fruit) and food "handouts," as well as a surge in the purchasing of packaged goods (e.g., instant noodles), fast restaurants, online shopping, and convenience stores. Simultaneously, some people are eating more home-cooked meals when at home. This poster contains all the effects of lockdown on food habits and dietary recommendations to help people maintain healthy dietary habits during Covid-19.

Keywords
Covid-19, lockdown, dietary habits, optimal nutrition.

Biography

BR Abha Ayushree, Ph.D. Research scholar, Department of Food and Nutrition, College of Community Science Dr. Rajendra Prasad Central Agricultural University, Samastipur, Bihar
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Food Quality in India during Covid-19 Pandemic: An Exploratory Survey

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Bollu Sai Sruthi
Department of Food and Nutritional Sciences, Sri Sathya Sai Institute of Higher Learning, Andhra Pradesh, India

Jhinuk Gupta
Department of Food and Nutritional Sciences, Sri Sathya Sai Institute of Higher Learning, Andhra Pradesh, India

Abstract

Quality of food is directly related to the nutrition and health of the consumers. Ensuring availability of high-quality food is a challenge, especially in developing countries like India. The year long lockdown, shortage of manpower, restriction on transportation during the Covid-19 pandemic are anticipated to significantly impact the food supply chain in India, which may further lead to decrease in food quality and increase in food fraud. To add on, discrete incidents have been reported about people falling sick after consuming poor quality food served in the food camps and community kitchens run by voluntary organizations. Therefore, it is highly important to find out the real scenario of food quality in India during the Covid-19 pandemic.

In this project, an exploratory survey was carried out to record the consumers' experiences about the quality of food before and during the pandemic. Randomized sampling technique was used for the purpose. Responses were collected from all over India by circulating questionnaires through social media and conducting telephonic interviews. Findings of this survey not only help the regulatory agencies to handle the issue more efficiently, but also create awareness amongst common people about food adulteration and make them more vigilant.

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Biography

Katta Sanvika and Bollu Sai Sruthi are Master's students in Sri Sathya Sai Institute of Higher Learning, India pursuing their M.Sc. in Food and Nutritional Sciences with Specialization in Food Technology. Dr. Jhinuk Gupta is an Assistant Professor in the Department of Food and Nutritional Sciences, Sri Sathya Sai Institute of Higher learning. She obtained her PhD from National University of Singapore and has 6 years of postdoctoral research experience in the USA in the field of Grain and Food Science. Currently, she is working in the area of food safety, food adulteration: detection and control.

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Nutrition and Immunity: Lessons for Defence against Covid 19

Dr Archana Ainapure
Symbiosis Skills and Professional University, India

Abstract

The respiratory manifestations brought about by Covid 19 ranges from normal cold to flue to serious pneumonia. This article covers the impact of aging, low muscle mass, weight, micronutrients and the gut micro biota on the human immunity framework and talk about this with regards to SARS-CoV-2 disease and Coronavirus.

The activity of immune system increases in case of any infection. Along with this metabolic rate, requirement of energy also increases. All the regulatory molecules are derived from diet. In reduction of risk of infection and strengthening of immune system vitamins and trace minerals play very important role. Zinc and Selenium are particularly important. The Gut micro biota also plays a role in regulating and monitoring defense system

Immune system is benefitted by dietary approaches and healthy micro biota. If respiratory epithelium gets infected, it causes Acute Respiratory Distress Syndrome. Many evidences show that n-3 fatty acids can control cytokine storm while treating ARDS. So it is worth studying the relationship

Biography

PhD , Food Science and Nutrition, Director Symbiosis Skills and Professional University Over 35 years of cross cultural experience as Professor, Nutritionist & Dietetic Consultant and Manager responsible for Administration, Brand Promotion, Client Relationship Management and inter disciplinary Coordination in a multinational company in Dubai, Bahrain and India. Vast experience in research and paper and book publication.

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COVID 19: Assessment of Knowledge and Creating Awareness among Fisherwomen

Dr. Kayalvizhi Balamurugan

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M.Sushmitha

M.Sc Food service Management and Dietetics,PG and Research Department of Home Science,Bharathidasan Government College for Women (Autonomous), Puducherry, India

Abstract

There is a new world health crisis threatening the public with spread of COVID-19 (Corona virus Disease-2019). Since December 2019, when Covid-19 emerged in Hunan seafood market at Wuhan, South China and rapidly spread throughout the world, the virus outbreak has been declared a public health emergency of International concern by World Health Organization (WHO).Human civilizations are facing threat for their survival and livelihood. In this regard, this study attempted with the major objective of assessing the knowledge on causes, symptoms, diagnosis, prevention and vaccination on COVID-19 among selected fisherwomen in Pillaichavady, Kalapet region of U.T.Puducherry. A total of number 100 respondents were covered by using convenience sampling procedure. Interview schedule via google form was used to collect data. Interview was conducted over mobile phone for a period from 25-04-2021 to 10-05-2021 according to the convenience of the respondents. The findings of the result of the study was analysed. This paper will provides in-depth information on knowledge regarding COVID-19 among fisherwomen and also highlights the individual counselling adopted to create awareness. The study concludes that currently the disease has caused thousands of infections and deaths in Puducherry. Ideally, the spread of the ailment calls for rapid awareness programme, strong investigation, isolation protocols, vaccination and individual counselling to avert additional spread.

Keywords

COVID 19, Fisherwomen, Knowledge Assessment, Awareness

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Biography

Dr. Kayalvizhi Balamurugan M.sc, M.phil, PhD. is currently working as a faculty of PG and Research Department of Home Science, Bharathidasan Government College for Women (Autonomous), Pondicherry University, Puducherry. She is the Coordinator, Entrepreneurship Development Cell since its inception 2018. She has initiated Health & Nutrition Club (First of its kind) in the campus. Her Research topic was Stress Management. She has got around 19 years of teaching experience in Pondicherry Administration. Prior to this, she was having 10 years of experience as Lecturer in Nutrition, Sree Balaji College of Nursing, MGR Medical University, Chennai, Home Science Teacher in Selvan Public School, Gurgaon. She is a certified Infant and Young Child Feeding Counselling Specialist and National Trainer, Pranic Healer, Landmark Graduate. She is a member in various Professional Bodies. She has compiled a book on "Nutrition for Optimum Health". She has participated, presented and published papers and also served as a Resource Person in various International, National and Regional level Conferences, Seminars, Workshops and Training programmes. She has also organised National level conferences, seminars, Webinars, Workshops, and training programmes.

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Impact of Lifestyle on Immunity and Susceptibility to COVID

Hemali Malavia

Headnutritionist and lifestyle expert at LCHHS and Head Mentor at LSI institute, India.

Abstract

Our immune system plays pivotal in protecting our body against pathogens (foreign bodies). There are several factors that impact one's immunity. Lifestyle is one of the biggest contributors, along with a deficiency of vitamins and minerals, sleep deprivation, pollution, and consumption of excess sugar. Chronic stress increases inflammation and impacts CD8 marker and t-cell activity. Low Vitamin D and processed food adversely affect gut health and worsens immunity. Better lifestyle choices, exercise, sleep, and vitamin and mineral-rich food help to boost the immune system, fight infection, and decrease its susceptibility to COVID.

Keyword

lifestyle, immunity, inflammation, CD8 marker, Tcells

Biography

Hemali Malavia has an unparalleled experience of being a professor for 20 years and practicing nutrition for the last 10 years. She pursued her M.Sc. in Microbiology and Post-Graduation degree in Clinical Nutrition and Dietetics. Her journey started as a head coordinator at Biotechnology National college, followed by a stint as a nutritionist at Abbott Nutrition, where she counseled and prescribed nutritional plans for post-surgery patients and cases like epilepsy and bipolar disorder.

At LCCHS, Hemali excels in managing conditions like diabetes, kidney conditions like IgA nephropathy, nephrotic syndrome, hydronephrosis, clients on dialysis, and endometriosis. She has successfully helped patients safely wean off thyroid and TB medication and conceive successfully. Her patients with autoimmune disorders have also shown remarkable improvements in their health. Hemali has tremendous experience working with cancer patients between the age of 10 to 80 years.

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Her expertise also lies in conducting practicals, research, meal planning for sports nutrition, conducting nutrition camps, training nutritionists, and driving performance.

She has designed the IBCP syllabus for Integrative Nutrition end-to-end for Classes 11 and 12. She is now extending her knowledge to school-going kids through a health and lifestyle course, too.

Hemali has played an instrumental role in devising the Integrative Nutrition syllabus for LSI and training and upskilling new faculties.

She believes that this course is exactly what other experts have learned through years of field experience. It presents and passes down this valuable knowledge as an educational course to future generations. She says, “Everyone has the right to education, but the right to correct education is the need of the hour. With the internet being the first resort that people rely on for every problem, it becomes the moral responsibility of a health care practitioner to share correct knowledge and practices. Not all the information shared on the internet is incorrect, but as the saying goes, half information is more lethal.”

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Impact of COVID on Child Malnutrition

Indu
Rajendra Agricultural University (RAU), Pusa, Bihar, India

Abstract

In this paper, we analyze the possible impact of Covid-19 on child malnutrition. We argue that Covid-19 has greatly impacted all four pillars of food security: availability, access, stability, and resource utilization. Food has become scarce during the pandemic due to a shattering of the traditional supply chains. Lockdowns have driven up the cost of the produce. Reduced employment and availability have led to people buying less food, eating fewer meals, and relying on cheaper less-nutritious food. Mass migration of workers during the pandemic has led to labor shortages which has affected food production and distribution. Restrictions on mobility, including closure of roads and cargo as well partial port operations, have further affected availability of nutritious foods, especially in rural and semi-urban areas. Foods imports have also stalled, worsening availability. Women are being disproportionately affected since a) they tend to be lower within a household's food ladder, and b) they are largely employed in the informal sector which has been particularly by the pandemic. Undernourished pregnant and lactating mothers pass their deficiencies to their babies. The pandemic has also disrupted the Anganwadi, ASHA, and midday meal schemes, free immunization programs and routine health outreach services, and has also restricted access to clean drinking water and sanitation for many. This could exacerbate slide towards malnutrition. Once India emerges from the pandemic, a determined approach would be needed both on part of the government as well as the civil society to avoid devastating short-term and long-term consequences.

Biography

Indu is a postgraduate in Home Science Extension Education from Rajendra Agricultural University (RAU), Pusa, Bihar (India). She was previously a guest lecturer in the faculty of Home Science at RAU. Her teaching and research interests lie in issues surrounding home science, food, and nutrition.

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Potential Health Benefits of Functional Foods in COVID 19

Ruchu kuthiala
Symbiosis Skills and Professional University, India

Abstract

COVID 19 pandemic has been a global challenge to all the nations and has really affected the sense of normalcy in the lives of People. It has been a sense of awakening that has made people realise the role of Immunotherapy in fighting against such situations. It has been observed that the strong Gut Associated Lymphoid Tissue (GALT) which accounts as a dominant role in the Immunity has a very important role to play in strengthening the Immune System. Dysbiosis could be a major cause of many health disorders and immune suppressants diseases. It was strongly observed that patients with compromised immune system badly affected in Covid 19. In this review we are trying to find out the assosciation between functional foods like Probiotics, Prebiotics and various other Nutraceuticals in strengthening the Immune system and its potential benefit to act as preventive medicine in curbing down incidence or management of COVID 19.

Biography

Professor Ruchu Kuthiala -A passionate clinical and Sports Nutritionist with 13 + years of Industrial and Academic Experience.
Currently working at Symbiosis Skills and Professional University and recently presented "Nutraceuticals and Organic foods" in National Conference held at Delhi organised by Modi Ji.
Designation: Assistant professor
Masters In Foods and Nutrition with specialization In Clinical Nutrition (Gold Medallist)
B.Sc. Honour's in Home Science specialization in Nutrition(Gold Medallist)
U.G.C NET Qualified
Diabetes Educator (BMJ, Fortis hospital)
Certified Ketosis Health Advisor
International Diploma Holder in Dietary Supplements
International Diploma Holder in Gut Health
Lifetime member of Indian Dietetic Assosciation

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Nutrition and Immunity in Relation to COVID-19

Dr. M.V.V. Murali Mohan
Civil Surgeon Epidemiologist (Retd.), Visakhapatnam, India

Abstract

The role of the immune system is to protect the individual against pathogenic organisms. Nutrition is one of multiple factors that determines the immune response and good nutrition is important in supporting the immune response. The adverse impact of poor nutrition on the immune system, including its inflammatory component, can be one of the explanations for the higher risk of more severe outcomes from infection with SARS-CoV-2 seen in older people.

Studies of individual micronutrients including vitamin D and Zinc suggest roles in reducing severity of infection with SARS-CoV-2. Good nutrition is very significant in promoting a diverse gut microbiota, which in turn supports the immune system. The importance of nutrition in supporting the immune response also applies to assuring robust responses to vaccination. There are many lessons from the study of nutrition and immunity that are relevant for the battle with SARS-CoV-2. Nutritional status of individual is affected by several factors such as age, sex, health status, life style and medications. Optimal nutrition and dietary nutrient intake impact the immune system, therefore the only sustainable way to survive in current context is to strengthen the immune system.

Consequently, individuals with weakened immune systems are at increased risk of becoming infected and of infections being more serious, even fatal. The unprecedented COVID-19 pandemic has thrown a challenges on excising life styles and eatery habits of mankind.

Key Words

Immune system, Nutrition, Pathogens, Vitamins.

Biography

Name: Dr. Mavuru Venkata Veerabhadra Murali Mohan
Qualification: MBBS, Diploma in Public Health
Present Position: Civil Surgeon Epidemiologist (Retired)
Previous work experience:
Worked as medical officer in various PHCs from 1990-2007.
Worked in tribal area for more than 10 years.
Worked as medical officer in TB unit and rendered service to TB patients.
Worked in Integrated Disease Surveillance Program Cell from 7th February, 2020. Participated in preparatory arrangements for COVID-19 hospitals.
Trained various sections of people on COVID-19 including Judicial officers, Police officials and the Public
At present working in Surveillance and Testing Committee for COVID-19

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23rd – 24th September 2021

Importance of Diet in improving Immunity during Covid-19

Sumitra Chhotaray
College of Community Science, OUAT, India.

Abstract

DCovid-19 pandemic is a leading challenge across the world. More than 210 countries globally affected due to this Covid Pandemic. There are about 211,730,035 confirmed cases of COVID- 19, including 4,430,697 death cases reported to World Health Organization till Aug 2021.In India till mid of Aug, active cases are about 3,19,551 and 3,17,20,112 recovered and 4,35,110 death cases are reported. This COVID-19 is a Virus having no. of tentacles or with a crown- like grooves attached to the surface. Its diameter is approximately 60–140 nm. It is transmitted through respiratory droplets from coughing and sneezing and enters to the body via eyes, mouth or through nose and starts replicating. The immune system of human body is made up of various organs, cells, and proteins. It has a vital role in protecting from extraneous harmful substances, germs etc. so that it fights against the pathogens like viruses, bacteria, fungi and remove them from the body. The individual with high immunity is less susceptible to covid and those with less immunity and having co-morbidity they are prone to covid even death rate is more among them. So, diet plays a great role in improving immunity before, after & during Covid. People prefer to take vitamins like Vit -A, Vit-D, Vit-C, Vit-E & Vit-K in the supplementary form along with dietary intake. Similarly, minerals like Zinc, Selenium, Iron, Magnesium have significant role in the enhancement of immunity power of body. Hence a diet rich in protein should have top priority because it has properties to produce immunoglobulin and antiviral activity. Different pulses, white meats, milk & milk products, eggs, and fish should be consumed. Saturated fat, red meat, more than 5 g salt per day, and industry processed food etc. should be avoided. In a regular meal, individuals should eat a balanced diet along with that 8–10 cups of water should be drunk daily. Too much caffeine, sweetened fruit juices, fruit juice concentrates, syrups, and still drinks must be avoided. Along with diet, regular physical exercise is quite necessary to boost the immune system.

Key words

Immunity, Pathogen, Vitamins, Virus, Selenium

Biography

This is Sumitra Chhotaray; Working as Research assistant in PG Dept. Of Food and Nutrition, College of Community Science, OUAT. I have keen interest in clinical nutrition, and analysis of food samples. I have completed Ph.D Coursework and recently going to submit my thesis entitled as " Development of baked product using composite flour". I have also taught 5 yrs. in traditional degree college on the subject Home Science at Banki (A) College and visiting faculty in SRI SRI University, Odisha..

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23rd – 24th September 2021

Covid 19 Pandemic and Its Effect on Nutritional Status of Young Children of India

Trushna Parth Joshi
Indira Gandhi National Open University (IGNOU), India.
Manisha Vyas
Indira Gandhi National Open University (IGNOU), India.

Abstract

COVID-19 pandemic has influenced nutrition status of population; especially of young children, who are highly susceptible to acquiring bad eating habits. After infancy this is the second stage of growth spurt. Young children with poor dietary habits increase their subsequent risk of degenerative diseases. Our aim was to study nutritional status during COVID-19 pandemic in adolescents aged 10 to 18 years, compare them with their usual diet and dietary. During pandemic, and identify variables that may have influenced changes. Data were collected by an anonymous online questionnaire on food intake from Gujarat, India. The results show that COVID-19 did influence their dietary habits. In particular, 51.25% (n=41) of participants were underweight. Whereas 41.25% (n=33) were having normal weight and 5% (n=4) participants were overweight. 1.25% (n=1) participants were reported pre-obese, while 1.25% (n=1) participants were categorized as type II obese. It was seen that 26.3% of participants skipped their meals during lockdown. 25% of adolescent skipped their breakfast during lockdown and 35% skipped it after lockdown.

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Biography

I have an experience of 8 years in the field of Nutrition; with a special interest in clinical and pediatric nutrition. I have completed my BSc in Dietetics and Post Graduate Diploma in Pediatric Nutrition from SVT college of Home Science; Mumbai; India. I am currently pursuing my MSc in Nutrition and food service management from Indira Gandhi National Open University. I have worked as a pediatric dietitian in TATA Memorial Hospital; Mumbai. Working over there gave me an opportunity to plan total parental nutrition, enteral nutrition and tailored diet for each child as per their medical condition and nutritional status.

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4th International Conference on
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23rd – 24th September 2021

Nutrition, Immunity and Covid -19

Dr. Sarita Srivastava
IGNOU, New Delhi, India

Abstract

The pandemic of Corona Virus Disease, 2019(COVID-19) generating a global health crisis. The state of food security and nutrition was already alarming before the outbreak of COVID -19. According to the "state of food security and nutrition in the world (FAO, IFAD,UNICEF,WFP and WHO, 2019 an estimated average of 821 million people were undernourished between 2016 and 2018 and majority of world's hungry people live in low- income countries, where 12.9 % of the population is undernourished. Poor nutrition causes nearly 45% of deaths in children under five. These figures are expected to aggravate as a result of COVID-19 pandemic. The most affected are the vulnerable segments of population, that have less ability to adapt the crisis.

COVID-19 Pandemic is already affecting food system directly through impact on food supply and demand, and indirectly through decrease in purchasing power, the capacity to produce and distribute food and the all of these have differentiated impact and will more strongly affect the poor and vulnerable.

Currently COVID-19 is a challenge across the world. It is mandatory to attain and maintain good nutritional status to fight against virus. Optimal nutrition and dietary nutrient intake impact the immune system, therefore the only sustainable way to survive in current context is to strengthen the immune system. A proper diet can ensure that the body is in a proper state to defeat the virus. However along with the dietary guidelines the food safety management and good food practices is compulsory. In this context the present study explores the importance of nutrition to boost immunity and gives dietary guidelines about nutrition and food safety to withstand COVID-19.

ISBN: 978-81-951120-0-5

Biography

I, Dr.Sarita Srivastava is presently engaged in Evaluation work ,IGNOU, New Delhi. I have worked on the Research topic entitled "Impact of nutritional supplementation on the nutritional status of adolescent girls" .My vision is to create and share knowledge to ensure safe and healthy life and service to society.

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Relationship between physical activity pattern and dietary intake of athletes during the second Covid-19 lockdown in Tamil Nadu

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Research scholar, Department of Clinical Nutrition, SRMIST, India
Dr. K. Silambuselvi
Research guide, Department of Clinical Nutrition, SRMIST, India

Abstract

Background
Among the multitude ways in which COVID -19 pandemic has impacted the athletes, the change in physical activity and dietary pattern seems to be of utmost importance.

Purpose
The aim of the current study was to assess and compare the physical activity pattern of male and female athletes during the second COVID-19 lockdown and study its correlation with the dietary pattern of athletes.

Methodology
A cross sectional descriptive online survey was conducted among physical education students studying in different colleges and universities across Tamil Nadu. The data was collected from 270 athletes belonging to the age group of 18-35, during the second lockdown in May 2021. The physical activity pattern of the athletes was assessed using the International Physical Activity Questionnaire – Short form (IPAQ – SF). The excel file for the automatic calculation of data from IPAQ created by Andrea et al., was used to analyze the physical activity levels of the male and female athletes. The dietary pattern was assessed using the scoring system. The data was then statistically analyzed using SPSS software.

Results
It was found that 46% of athletes had moderate level of physical activity, 39% of athletes had high level of physical activity and only 15% of athletes had a low level of physical activity. Significant differences were not observed in the physical activity levels between male and female athletes. The dietary scores

of majority of athletes were found to be satisfactory and there was no significant differences in scores between male and female athletes. A significant correlation was observed between the physical activity levels and the dietary scores.

Conclusion

The dietary pattern of majority of athletes was satisfactory and their physical activity levels were moderate or high. Significant differences were not observed among male and female athletes with respect to the physical activity levels and dietary pattern. There is also a significant correlation between the dietary score and physical activity pattern of athletes.

Key words

Athletes, physical activity, dietary pattern, COVID-19 pandemic

Biography

J. Sai laavanya is a full time Ph.D Research scholar at the Department of Clinical Nutrition, SRM Medical College Hospital and Research Centre, SRMIST. She has completed her Masters and M.Phil in Food Science and Nutrition and has served as a lecturer in the Department of FSMD, Cauvery College for Women.

4th International Conference on
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23rd – 24th September 2021

Immunity, Nutrition and Covid-19

Hetal Tejas Shah
Indira Gandhi National Open University, India

Abstract
In developing countries like India, there is a great need to assess the nutritional status of individuals through timely interventions, especially during the situation of pandemic like Covid-19 where there is a high risk of malnutrition in people. It has a severe effect on the immunity levels and nutritional status of people at such critical period of time. The immunity levels majorly vary across intake of various food groups and other socio demographic aspects like age, gender, education and income This study accesses the assess the association between Food Security and various food groups such as Cereals, White tubers and roots, Vitamin A rich Vegetables and Tubers, Meat, Eggs, Fish and seafood, Legumes, nuts and seeds, Milk and milk products, Oils and fats, Sweets, Spices, condiments, beverages and the nutritional status of adults through anthropometric measurements, measures dietary diversity score, for households above 18 years through the House Hold Dietary Diversity Score(HDDS) in the rural areas near Anand district and thereby access immunity levels of households with the help of Household survey questionnaire. The mean weight calculated determines that the mean weight is negatively associated with immunity levels of households and dietary diversity score calculated from the consumption of different food groups, reveals that the people were comparatively food secured and they consumed a majority of food groups including green leafy vegetables, fruits and other food items. The study reveals that age, gender, education, income, decision making plays an important role in the Nutritional status of Households.

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Biography

I am a student at the IGNOU, New Delhi, currently pursuing my masters in Dietetics and Food Service Management (DFSM) through distance learning, completed my graduation in Food science and Quality control in the year 2001 at the S.M Patel College of Home Science, V.V Nagar, Gujarat in first grade.I have recently done a Study on the topic, "Gender Differences in Food security perceptions among male and female Households in the rural areas near Anand city during Covid-19". I found the topic of the conference similar to the study conducted by me and found the conference informative and would benefit a lot through participation.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Role of Breastfeeding and Complementary Feeding in enhancing immune response against Gastrointestinal infections and Antibiotic Usage in Infants of Rural Areas of India amid COVID -19

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Manipal Academy of Higher Education-(MAHE), Karnataka, India.
Dr. Asha Hegde
Manipal Academy of Higher Education-(MAHE), Karnataka, India.
Dr. Mamatha Ballal
Manipal Academy of Higher Education-(MAHE), Karnataka, India.
Dr. Ankur Mutreja
University of Cambridge, UK
Dr Asha Kamath
Manipal Academy of Higher Education-(MAHE), Karnataka, India.
Dr. Meenakshi Garg
Manipal Academy of Higher Education-(MAHE), Karnataka, India.
Dr. Vijay Kumar
Manipal Academy of Higher Education-(MAHE), Karnataka, India.

Abstract

Background: Optimum nutrition has the potential to boost immunity and decrease disease susceptibility. Current COVID-19 crises demand a robust immune system. With reference to infant nutrition, WHO proclaims breastmilk as the perfect alimentation for new-born infants considering it to

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be protected, pure and containing antibodies that impart security against various radical early life diseases. Moreover, IgA antibodies with reactivity to the COVID-19 infection have been distinguished in breastmilk (Nidhi & Dr. Neetu, 2021). Microbiome in human milk have found to possess immunologic and metabolic factors that aid in diminishing early life intestinal inflammation. Appropriate complementary feeding with balanced micro and macronutrients plays a pivotal role in delivery of immuno-protective components/elements to the infant in the first 1000 days of life.
Exclusive breastfeeding, appropriate complementary feeding are modifiable protective factors that may impact the diversity and functional capacity of the gut microbiome.
The aim of this research was to investigate the role of exclusive breastfeeding and appropriate complementary feeding in preventing gastrointestinal infections during infancy in a rural Indian setting.
Methods: A prospective cohort (pilot) study was conducted with a sample size of 200 mothers of 6-12 months old healthy infants in rural areas of Udupi, Karnataka. Data collection was done by in-depth interview using a semi-structured questionnaire to collect information on duration and exclusivity of Breast Feeding (Exclusive-EBF, Formula-FF and Partial -PBF), type of Complementary Foods (Homebased-HCF, Commercial-CCF, Mixed-MCF) given, episodes of vomiting, diarrhoea, Upper Respiratory Infections (URTI) and antibiotic exposure. Pearson's chi-square tests were performed using SPSS version 16 for statistical analysis.
Results and discussions: EBF was observed in 50.5% (101) of infants, PBF in 49% (98) and FF in 0.5% (1). As it is almost negligible; FF group was not considered for statistical analysis. On EBF for 6 months, 3% of infants had vomiting and 1% had diarrhoea, whereas on PBF, 5.2 and 3% (p=0.6) of infants had vomiting and diarrhoea, respectively. There were no instances of diarrhoea or vomiting in infants who received HCF. While 4.8% and 2.4% of infants on MCF had vomiting and diarrhea respectively (p=0.27). Antibiotic exposure was reported in 36.4 % of HCF and 51.8 % of MCF infants (p=0.267) respectively, primarily for URTI.
Also, due to excellent health education, number of mothers using commercial formulas and processed baby foods exclusively was low (0.5%). This could also be one of the reasons for low incidences of GI infections in this study.
Conclusion: COVID-19 has made us re-learn the concept of "prevention is better than cure". It would be wise to provide infants the best start in life with the first vaccination of colostrum, followed by EBF for 6 months and appropriate complementary feeding from 6 months till and continued BF for 2 years of life, to ensure a robust immune system. A population-level awareness regarding this, could lead to decreased incidences of gastrointestinal infections and associated mortality. This would be of considerable public health significance in rural and urban communities, thus reducing the load on already burdened health care system of the nation.
Keywords: Breastfeeding, complementary-feeding, Vomiting, Diarrhea, Antibiotics.

Biography

Vidya Rajesh,I am currently working as a Clinical Nutritionist, at Dr. TMA Pai Rotary Hospital, Rural Training center, Manipal Academy of Higher Education -MAHE (*An Institute of Eminence Accorded by MHRD)*, Karnataka, India, since the past 5 years after earning my MSc in Dietetics and applied Nutrition from WGSHA, MAHE. I am also pursing my PhD degree focused on Infant Nutrition. It is a multidisciplinary study with inputs from Dr. Ankur Mutreja, Senior Scientist, Cambridge University, UK. I have 3 research Publications; my recent publication highlights the radical effect of nutrients on immunity pertaining to COVID-19 crisis.

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Influence of Emotional Eating on Weight Status of University Students during Covid-19 Pandemic

Syeda Amena Banu
Osmania University, India
Dr Shruti kabra
Osmania University, India

Abstract

COVID-19 pandemic had an impact on student's mental health owing to the closure of colleges indefinitely, causing sudden changes, through home-isolation and social-distancing which led to changes in the lifestyle and eating behavior. This study investigates the influence of Emotional Eating (EE) behavior on the weight status of university students during the covid-19 pandemic in Hyderabad. Specifically, it investigated perceived changes in eating behavior compared to usual before COVID-19 and compared it with self-reported response during the same period. A total of 211 university students between 17-27 years residing in Hyderabad filled an online survey which included questions about general information, nutritional information, pandemic specific questions and emotional eating scale (EES). Data were analyzed using SPSS (26.0). The results showed perception of weight gain was observed in 51.4% of respondents(n=113) during the pandemic but there was no correlation between perceived weight change and EE. There was a correlation between BMI and emotions like happy (p=-.157), sad (p=.151), nervous (p=.144), and under-pressure (p=.196) and between exercise and negative emotions such as sad (p=-.147), depressed (p=-.147), angry (p=-.161) and frustrated (p=-.174). In conclusion, Emotional eating was associated with weight status as there was a correlation between BMI, physical activity and EE

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Biography

Syeda Amena Banu is a student currently doing her masters in Nutrition and Dietetics from department of food and nutrition, University college for Women, Osmania University, India. Her research examines influence of emotional eating on weight status of university students during the covid-19 pandemic. She received her BSc (ANBC) from St Francis College for women, Hyderabad, India. She is interested in public heath, community nutrition and social welfare.

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4th International Conference on
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Concept of Rasayana: Unique Ayurvedic Approach in Preventing Infectious Diseases with Special Emphasis on Covid-19

Dr. Amulya Murthy Aku

KLE Academy of Higher Education &Research's (KAHER, Deemed-to-be-University) Shri B. M. Kankanawadi Ayurveda Mahavidyalaya, Shahpur, Belgaum, Karnataka, India

Abstract

AIn India, a variety of endemic communicable illnesses pose a severe public health threat. India is in the midst of a transitional age, both epidemiologically and demographically. Life expectancy has grown, resulting in an increase in aging-related diseases and unhealthy lifestyles. Nonetheless, communicable diseases continue to be prevalent and are serious public health concerns. Communicable illnesses have become a severe hazard to society in our growing country due to low socioeconomic standards, inadequate sanitary conditions, and population increase. Rasayana therapy is especially beneficial in the treatment of such a problem in which immunity and infections play a major role. According to Ayurvedic principles, a person's immunity can be boosted by following a healthy diet and lifestyle, as well as using Rasayana correctly. Rasayana is the process of increasing the core of each Dhatu, beginning with Rasa. Taking Rasayana can assist to boost a person's immunity and keep him safe from infectious infections. There are two types: Urjaskara (which boosts general immunity) and Roganuta (which boosts particular immunity and used in particular disease conditions). There are numerous Rasayanas that are used to strengthen immunity and heal diseases, but in this presentation I will focus on the notion of Rasayana and a few instances that have a strong focus on infections, such as COVID 19.

Biography

- Name : Dr. Amulya Murthy Aku
- Current job title: 2nd Year MD Scholar (Doctor of Medicine in Ayurveda - Department of Swasthavritta – Ayurvedic Public Health and community Medicine)
- Relevant achievement or accomplishment

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1. **Prizes:** more than **10** prizes in essays and oral presentation, poster presentation, Shloka recitation etc.
2. **Paper presented:** more than **10** national and international
3. **Attended:** more than 150 national and international Webinars and Workshops attended
4. **Co-ordinator:** Total **5** as a co- co-ordinator in events conducted by department of Swasthavritta (KLE BMK)
5. **Projects:** Currently handling two Departmental projects
6. **Paper publications:**
    a. 2 papers published in international conference proceedings
    b. 3 papers under process of review
    c. 2 papers under process

Your skills and areas of expertise: Obesity, Ayurvedic Diet and lifestyle, wellnes

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23rd – 24th September 2021

A Study on Traditional Assamese Cuisine and Ethno-Medicinal Remedies with Special Reference to Middle Assam

Leena Laskar
Department Of Anthropology, Cotton University, Guwahati, Assam, India

Abstract

Food Is Our Basic Need. It Is An Essential And Fundamental Part Of Human Society. It Represents The Identity And Cultural Richness Of A Particular Society. This Paper Is An Attempt To Study The Traditional Assamese Cuisine And Ethno-Medicinal Remedies, Food Habits, Specials Foods, Food Restrictions And Food Taboos Among The Assamese People Of Middle Assam. The Staple Food Of The Assamese People Is Rice. Apart From Rice They Use To Take Fish, Meat And Different Types Of Vegetables. The Study Is Based On Primary Data Collection From The Field By Using Methods Like Interview Method, Observation Method And Photographic Method During The Month Of January, 2020.

Key Word:

Assamese, Cuisines, Ethno-Medicinal Remedies, Middle Assam

Biography:

Post-Graduate In Archaeological Anthropology From Cotton University, Guwahati, Assam, India In The Year 2019. Life Member Of *"The Indian National Trust For Art And Cultural Heritage (Intach),"* New Delhi, India. Life Member Of *"Inspira Research Association (Ira),"* Jaipur, Rajasthan, India. I Have Two Publications '*An Ethnography Of Food Among The Khasis Of Wahmaw-Lyngdiar Locality Of Mawsynram Village, East Khasi Hills District, Meghalaya'*. ***Society Today: Compiled Essays In Contemporary Anthropological Research,*** Kalpaz Publications, Delhi. ISBN 9789353242435**.** *'Ke-Che-Cham Or Lord Shani Puja Among The Hill Karbis Of East Karbi Anglong District, Assam'*. ***Inside Society, Culture And Public Health: Readings In Anthropology,*** Kalpaz Publications, Delhi. ISBN 9789353242756.

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23rd – 24th September 2021

Cafeteria Sihat Accreditation: The Effectiveness of Nuteen Intervention to Promote Healthy School Environment in Selected Secondary Schools in Kuala Lumpur, Malaysia.

Shashikala Sivapathy
Nutrition and Wellness Program, Faculty of Applied Sciences, UCSI University, Malaysia.
Vaidehi Ulaganathan
Nutrition and Wellness Program, Faculty of Applied Sciences, UCSI University, Malaysia.
Mirnalini Kandiah
Nutrition and Wellness Program, Faculty of Applied Sciences, UCSI University, Malaysia.

Abstract

Schools offers many opportunities to promote healthy dietary and physical activity patterns for children and are also a potential focus point for engaging parents and community members to tackle nutrition related problems. Schools can play an important role in shaping the eating behaviour of students by improving the adequacy of nutrient intake through reducing the availability of high energy-dense foods and beverages sold in school canteens. The aim of this study is to evaluate the effect of the NuTeen intervention on accreditation of Healthy School Canteen. A quasi-experimental study design was used and 4 schools were selected randomly. Intervention was administered in 2 school and the other 2 schools served as control school. The canteen intervention was developed following the guidelines for Accreditation of Healthy Cafeteria (Kafeteria Sihat) by the Ministry of Health. This healthy canteen will be able to offer nutritious, safe and hygienic foods following the principles of MOH guidelines. Once all these criteria and specifications were fulfilled, the canteen operator could apply for accreditation. For the intervention schools two compliance checks were conducted by MOH nutritionists. To be eligible for accreditation, the canteen should obtain 86 points and above in order to be given the accreditation for a year. Trainings and support were provided by nutritionist from Nutrition Division, Ministry of Health. The total score obtained by the school canteen after the intervention was 96.54% and 93.88% respectively. The control schools showed no difference in the score retaining 60% and 54.5% each which do not meet the criteria for Healthy Canteen Accreditation by

Ministry of Health, Malaysia. In intervention schools all canteen operators had undergone the food handling training as well as healthy canteen training. Intervention schools strongly adhered to healthy canteen criteria for food groups compared to control schools in terms of increasing cereal based food, usage of less oil for fried foods, increased fruits and vegetables, avoiding usage of coconut milk in food preparation, incorporation of vegetables in meals, increased sales of legume based food and nuts as well as fresh milk. Intervention schools avoided use of MSG and adhered to healthier food preparation by adding more vegetables in foods, reducing salt and sugar in food and beverages and sold plain water. In terms of scores pertaining to sale of prohibited food and beverages, the baseline score was 20 and improved to 100 scores after 3 months of evaluation. Scores also improved for food groups which saw improvement from 18 to 44 scores. In the category of healthy food preparation and healthy eating promotion there was improvement in scores from 12 to 20 and 10 to 34 scores respectively. In summary, these results demonstrate that a short term intervention can promote substantial changes in the canteen environment. Canteen environment will serve as an important factor in influencing adolescents' dietary behaviour.

Biography

Shashikala Sivapathy is currently a Lecturer at the Department of Food Science and Nutrition, Faculty of Applied Sciences, UCSI University and working since 2010. She holds a PhD in Nutrition focusing on adolescent obesity and school canteen environment from UCSI University, her Master of Science (Community Nutrition) from Universiti Putra Malaysia and Bachelor of Science (Hons) in Nutrition and Community Health from Universiti Putra Malaysia. She is a member of the Nutrition Society of Malaysia (NSM), Malaysian Association for the Study of Obesity (MASO) and American Society for Nutrition. Her research interest are on children, adolescent obesity and school nutrition environment.

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Āyurvedic Science of Diet and Nutrition

Dr. Pallabi Dutta
Pragjyotish College, Guwahati (Assam), India

Abstract

Ayurveda, the oldest medical system of India deals elaborately with measures for congenial living during the various phases of life. The Suśruta-saṁhitā has been considered as the most authentic treatises of the Āyurveda. It emphasizes on the promotion of health and prevention of diseases through a balanced diet, which is especially relevant in modern days. COVID-19 has definitely created multidimensional crisis demanding for people to step up and follow certain measures to ensure safety and good health. Nutrient density has now become a global concern due to the pandemic of Covid-19. The Suśruta-saṁhitā teaches us that the intake of only proper diet can give proper nutrition and restore balance of tridoṣas (vāta, pitta and kapha), which is essential for maintaining health. The twelve classifications of food substances given by Ācārya Suśruta provide us profound knowledge of food items, their source, quality and requirement by human being. The Suśruta-saṁhitā also gives us a plentiful description regarding the properties of cooked and prepared food, drinks and potions, seasonal diet etc. In the present paper our endeavour will be to discuss the concept of diet and nutrition as envisaged in the Suśruta-saṁhitā and its essentiality for all ages.

Biography

Dr. Pallabi Dutta : Scholar, researcher, has published research papers in several leading journals. Currently working as Assistant Professor in the Department of Sanskrit, Pragjyotish College, Guwahati (Assam) with three years of teaching experience as Guest Faculty at Gauhati and Cotton University. She received her doctorate in Sanskrit from Gauhati University. She passed UGC NET examination in 2010.

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4th International Conference on
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23rd – 24th September 2021

The Burden of Malnutrition on Adolescent Girls in Rural Area

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Rezky Aulia Yusuf
Midwifery Department, Faculty of Public Health,Universitas Muslim Indonesia , Indonesia
Sundari
Nutrition Department, Faculty of Public Health, Hasanuddin University, Indonesia

Abstract

Food accessibility can be a challenge causing malnutrition in certain groups, including adolescent girls. This study aims to describe the dietary intakes and nutritional status of adolescent girls. This study used a cross-sectional study design, involving 360 female students from four secondary schools in Majene, Indonesia. Dietary intake was collected using a 2x24-hour food recall. Nutritional status was represented by anthropometric indices and anemia. Hemoglobin was assessed using HemoCue. Meanwhile, upper arm circumference measurement was to assess chronic energy deficiency (CED), and height and weight measurements were to determine height-for-age Z-score (HAZ) and BMI-for-age Z-score (*BAZ*) respectively. The majority of students were from low socioeconomic families. The respondents' intakes were low for energy (62.3% RDA) but not for protein (84.4%). Calcium, Fe, Zinc, vitamin A, C, D and E intakes were considered low. More than 50% of students were CED, 5.3% was wasted, 31.7% was stunted, almost 20% was anemic, was stunting and overweight/obesity (7.9%). Protein intake was associated with CED (AOR=2.622, p=0,000, 95% CI=1.703-4.039) after controlling for energy, iron, zinc, vitamin D, and Iodine, Obesity was associated with anemia (AOR=2.975, p=0,025, CI95%=1.1-7.7) after controlling vitamin C. It was concluded that nutrient intake had a significant impact on the students' nutritional status.

Keywords:

Chronic Energy Deficiency, Obesity, Anemia, Protein, Adolescent Girls

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Biography:

The first Author as a lecturer (Assistant Professor) at the Public Health Nutrition Division, School of Public Health, Universitas Muslim Indonesia. I obtained my bachelor degree from Faculty of Public Health, the Master program in Public Health and the Doctoral level at the Faculty of Medicine, Hasanuddin University. As an academician, the author is actively as a research reviewer at University level and national research reviewer, as well as reviewer and editor in reputable international journals, and also has produced number of publications in the form of books and articles published in accredited National Journals and reputable International Journals.

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Dietary Practices and Nutritional Profile of Nurses in South India

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University of Kerala, Govt College for Women, Trivandrum, Kerala,India.
Dr Suma Divakar
University of Kerala, Govt College for Women, Trivandrum, Kerala,India.
Dr Mini Joseph
University of Kerala, Govt College for Women, Trivandrum, Kerala,India.

Abstract

The nursing population is very vulnerable to problems related to physical and mental health, occupation, nutrition. The objective of this study is to assess the stress level, various health problems they faced in and to ascertain the nutritional status of nurses. Methods: This is a cross sectional, comparative study, using purposive sampling technique. The sample consisted of registered female nurses (N=500) aged 25-45years working in government and private hospitals selected from rural and urban areas of Thiruvananthapuram city. General health questionnaire and Nursing stress scale were used to assess the level of stress and psychological distress. Anthropometry, biochemical, dietary and clinical assessment methods were used to elicit their nutritional status. Results: Stress of nurses were observed to be moderate to high, in both sectors. Backpain and fatigue were common health problems they faced. The nurses had poor dietary practices along with high prevalence of underweight and abdominal obesity. Biochemical analysis of blood samples indicated the prevalence of anaemia, diabetes, hypercholesterolemia and hypertension. Conclusion: This study has identified there is a large lacuna in the health profile of nurses. There is an urgent need by hospital managements and policy makers to ensure quality nursing service through staff development and training programs.

Biography: Dr Meera D.K is as Assistant Professor in food and nutrition of the Department of Home Science at the Government College for Women, Trivandrum, Kerala, India, and is involved conduct of undergraduate and post-graduate studies. She is working here more than 10 years. She guided more

than 30 post graduate thesis and 5 under graduate projects. She has published several papers and presented her findings at various international conferences. Her Ph.D work was on the effect of shift work on the health profile of nurses in Kerala.

Biography

Dr Meera D.K is as Assistant Professor in food and nutrition of the Department of Home Science at the Government College for Women, Trivandrum, Kerala, India, and is involved conduct of undergraduate and post-graduate studies. She is working here more than 10 years. She guided more than 30 post graduate thesis and 5 undergraduate projects. She has published several papers and presented her findings at various international conferences. Her Ph.D work was on the effect of shift work on the health profile of nurses in Kerala.

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23rd – 24th September 2021

Study on the Knowledge, Awareness, Compliance of Patients with Hypothyroidism

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IGNOU, MSCDFSM, Maharashtra, India
Jyoti Rani
Chandigharh University, Gharuan, Mohali, India
Ameya Joshi
Bhaktivedant Hospital, Mumbai, Maharashtra, India

Abstract

Hypothyroidism is one of the most promising and progressive disease prevailing in India composing approximately 42 million people. The symptoms mostly are undetected as they are not specific that leads one third patients unaware, affecting one over 10 adults of that three times more prominent in women, underlying thyroid disorder in diabetic patients and approximately 44.3% women face in first trimester in India as per 2021 report. In this connection an online study was conducted via google form being a nutritionist. In total 72 patients submitted their responses. The questionnaire was circulated to the patients of an endocrinologist and the results obtained which constitutes female 81.5% and almost 40% hypothyroid patients were graduate. Only 50% hypothyroid patients knew about thyroid but 62.5% knew the meaning of hypothyroidism. Almost 94% patients know about thyroid gland positioning alongwith 52% thought that obese were at a major risk for getting hypothyroidism. Almost 84.7% confirming their visit to endocrinologist for consultation while 93.1% patients consumed medicine on time and 72.2% understood of continuing the medicine even with normal thyroid levels. The vitamin D and iron supplements were consumed by 73.6%. Overall, 93.6% perceived weight gain as a major symptom of hypothyroidism but 65.3% thought they might lose weight even with hypothyroidism. Around 52.8% people consume medicine after meals with a gap of 30-45 minutes. Iodized salt can cure their thyroid troubles has been assumed by 43.1% patients but 50% can't consume cruciferous vegetables at all due to hypothyroidism. Majority of the people belonged to metropolitan city with well qualification yet lacked basic knowledge about their disease condition. At the end of the

survey all the patients were given a patient education booklet regarding Hypothyroidism and general guidelines on diet. As an outcome it can be said mundane thought of hypothyroidism is never overlooked by upcoming health-conscious people during this COVID-19 too.

Biography:

Sana has done her Post Graduation in Clinical Dietetics from Nirmala Niketan College Mumbai. After PG she did her internship at Bhakti Vedanta Hospital Mira Road, Maharashtra. She has done a certification course in Nutrition in Exercise and Fitness from Nirmala Niketan. Currently pursuing MSCDFSM from IGNOU. Dr. Jyoti Rani is an academician in the field of food science and nutrition and working as Associate Professor in Chandigarh University, Gharuan, Mohali who is also registered with as Academic Counsellor with IGNOU. Dr. Ameya Joshi is an MD - General Medicine, MBBS, DM – Endocrinology Diabetologist and helped me in carrying out this whole research on his patients and working as Endocrinologist at Bhaktivedant Hospital, Mumbai.

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4th International Conference on
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Nutritional Profile of Urban and Rural Girls of 13 To 15 Years of Age of Udaipur District

Pallavi Vyas Jaisani
Central Campus of Technology, Tribhuvan University, Dharan, Nepal, India.

Abstract

Data regarding the nutritional status of urban and rural adolescent girls are less frequently documented in the literature. Thus this study was designed to assess and compare the nutritional profile of urban and rural girls. Nutritional profile was assessed by collecting data on anthropometric measurements, body composition and dietary intake in 60 urban and 60 rural girls. Weight distribution for age showed that 27% of urban and 23% of rural girls were normal. Weight for height classification showed 60% girls from urban area and 53% from rural area as normal with mean body fat % 16.32 and 14.0, respectively. Dietary survey revealed that intake was much lower by rural girls than urban. Prevalence of malnutrition was slightly lower in urban area than rural area. Weight for age classification showed that 3% urban girls were suffering from grade 3 malnutrition whereas in rural area the percentage was 5%. The results revealed that the dietary intake of both urban and rural girls were inadequate for various nutrients, which resulted in poor nutritional status in terms of anthropometric measurements like weight for age, weight for height, BMI and body composition. But in comparison to rural girls, urban girls had better nutritional profile.

Biography

Pallavi Vyas Jaisani, M.Sc. (Foods and Nutrition) from College of Community and Applied Sciences, MPUAT, Udaipur, Rajasthan. Presently working as Teaching Assistant in Department of Nutrition and Dietetics, Central Campus of Technology, Tribhuvan University, Dharan, Nepal. She is involved in various research activities related to the field of nutrition and detietics.

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Assessment of Nutritional Status among Children Aged 1-5 Years in a Rural Area of Bihar

Dr. Shazia Husain
Patna Women's College, Patna University, India

Abstract
In India, malnutrition among children is a well-known public health concern. This is more prevalent in rural setup due to an interplay of different socioeconomic conditions and lack of awareness about the proper nutritional care. Malnutrition can leads to impaired growth both mentally and physically, leading to a decrease life expectancy, increased risk of co-morbidity and mortality. Hence, this community based study was undertaken to assess the prevalence of malnutrition among children aged 1-5 years in a rural area of Bihar. This cross-sectional study was conducted among 150 children in village Ghoswari of Babatpur block, a rural area of Patna. Interview method in local language was adopted to collect data by using a structured questionnaire. To assess nutritional status, anthropometric measurements namely weight, height were taken using standard procedure. Results of the study revealed that 30.66% of the study participants were underweight, while 6% were wasted and 67.33% of the participants were stunted. Boys were more underweight than girls whereas stunting and wasting was more prevalent among girls. Adequate nutrition for first 1000 days is very essential for a growing child. Therefore, specific strategies to reduce the load of malnutrition especially in a rural area should be introduced by understanding the various factors that are associated with the incidence and prevalence of malnutrition in children.

Biography
Dr. Shazia Husain is Doctorate in Food and Nutrition and has awarded NET-JRF in Home Science. She is working as an Assistant Professor in Post Graduate Department of Home Science, Patna Women's College, Patna University, Patna, Bihar, India. She has presented research papers at various national and international seminars and has publications in reputed national and international journals. Her area of research interest is community nutrition and food science.

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Salivary Cortisol A Confirmatory Maker for Stress-A Study on Diurnal Variations among Selected Employed and Unemployed Women

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Department of Clinical Nutrition and Dietetics, Sri Devaraj Urs Academy of Higher Education And Research, Kolar, India.
Prof. Khyrunnisa Begum (Rtd)
Department of Studies in Food Science and Nutrition,University of Mysore, India.

Abstract

Secretion of stress hormone cortisol correlates with the intensity of stressor, its period of occurrence and may have serious implications on health. Women whether employed or unemployed experience stress. This study explores the diurnal variations of the salivary cortisol levels among selected employed and unemployed women. From a population of 400 employed and 272 unemployed women, forty women -20 employed and 20 unemployed were selected. To compare the cortisol levels between women without stress and with stress, 5 each from employed and unemployed groups with normal stress scores and 15 from each group with mild to moderate stress scores based on the DAS score were included in the study. Employed women exhibited two peaks in the hormonal profile, a sharp peak in the early morning the CAR with the mean cortisol level of 14.7 ± 5.9 µg/ml which slowly dropped to 10.1 ± 4.7µg/ml in the noon and increased again by evening to 11.8 ± 4.6µg/ml. Among the unemployed women a single peak appeared for CAR that is 12.6 ± 3.5µg/ml, this gradually declined to 8.1± 2.3µg/ml by evening time. The extent of stress is exhibited by multiple peaking cortisol levels among employed women. Unemployed women with stress had markedly high levels of cortisol compared with their counterparts with no stress. it is of greater concern that employed women with stress have markedly high cortisol levels which could be an indication for health issues in the longer run.
DAS Score: Depression, Anxiety and Stress Score, CAR- Cortisol Awakening Response

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Biography

Dr Anees Fathima Thabassum.Z is an Assistant Professor at the Department of Clinical Nutrition and Dietetics, Sri Devaraj Urs Academy of Higher Education and Research. She has 14 years of teaching and 7 years of research experience. Her current research interests include food product development, community nutrition, Women's Health, Clinical Nutrition and Dietetics. At present, she has 2 intramural funded projects and 5 minor projects (master's Dissertations) being conducted under her guidance. She has 7 publications in various national and international peer-reviewed journals.

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A Study on Nutrition Educational Program on Eating Disorders among young adult female subjects

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Wajd Hassan Alyanbawi
student, University of Hail, Hail, Saudi Arabia

Abstract

Background: Through educational interventions, it's pertinent to prevent problematic behaviors from evolving into full-fledged eating disorders like Anorexia or Bulimia.
Objective:
1-to encourage individuals with eating disorders and their families to acknowledge the problem, to encourage and direct them to appropriate resource, and to provide them with information and support.2-to reduce the prevalence of anorexia and bulimia and other eating disorders through a public awareness 3-to study the impact of a Nutrition Educational program on Eating Disorders, among female students
Methodology: Study tools-
a) A pretested questionnaire
b) A PPT of the instructional material
Setting and Participants: 47 young-adult females, between 19-24 years from under-graduate Nutrition background.
Statistical Analysis: SPSS and Arab Processor in Social Statistics incorporating Standard deviations and Chi-square tests. Differences were considered statistically significant at $P < 0.05$ or $P < 0.01$.
Results: The statistical analysis revealed high, low and no significance for 50%, 35% and 15% of the questions respectively.
Conclusion: Our findings showed some enhancement in the knowledge level of few participants.

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Key Words
Nutrition education, Anorexia nervosa, Bulimia nervosa.

Biography
Syeda Bushra Fatima- Faculty member in Clinical Nutrition since 2006 with an experience of over 15 years in India and Abroad.

4th International Conference on
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Assessment of Influence of Inadequate Food Choices on the Health Status & Prevalence of Hidden Hunger among College Going Girls

Shalini Choudhary
Sharda University, Greater Noida, India

Abstract

A Balanced diet is important to be healthy both physically as well as mentally for every individual. Out of all age groups college students tend to makes poor dietary choices which may cause serious health issues as they are attracted more towards junk food. This makes their body prone to hidden hunger. It is a kind of undernutrition that occurs when intake & absorption of micronutrients is too low to sustain good health & development. The work investigated the food choices of college going girls & its impact on their health to identify the prevalence of hidden hunger amongst them. Also some remedial measures were identified to combat hidden hunger. An exploratory survey was conducted including the college going students using questionnaire which consist questions related general information, diet, diseases of the respondents. Height & weight was measured to calculate BMI of the respondents which is a measure of body fatness & leanness. Haemoglobin of the respondents was assessed to identify hidden hunger among them. A positive correlation between the income group, living conditions & dietary pattern was discovered. It was observed that students who consumed junk foods frequently have lower academic performance as compared to the one who consumed it less frequently. The reason behind faulty dietary pattern was 'lack of time' to prepare food. It was also observed that more than half of the student's calorie intake is less than 80 percent of the RDA. Also the intake of micronutrients was less than the RDA levels. Vitamin-A was found to be consumed in the lowest level out of all. Based on WHO guidelines, 28.6% suffered from anemia. The intervention strategy increased the nutrition knowledge and the consumption of some micronutrients-rich food sources among the respondents.

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Biography

Shalini Choudhary is a PhD scholar at Sharda University, Greater Noida. She qualified NET in the year 2019 & holds a degree of B.Sc Home Science & M.Sc in Nutrition from Isabella Thoburn College, Lucknow. She has 2 years working experience as assistant professor from Isabella Thoburn College, Lucknow. She is currently perusing PhD in Nutrition & Dietetics to become a qualified researcher & to expand her carrier opportunities.

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4th International Conference on
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Barriers Analysis of Optimal Complementary Feeding Practices in the mother of the children age group 6 Months to 11 Months

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PCI, India
Dr. Rakesh Kumar Jha
PCI, India

Abstract

Introduction: Optimal complementary feeding is crucial for overall growth and development of the children. After 6 months of age, it becomes increasingly difficult to meet the nutrients needs for breastfed infants from mother's milk alone. But still the data of NFHS 5 shows that only 10.9% children age 6-23 months receiving an adequate diet, which is a concerning situation. This leads to Malnutrition in young children, which increases the severity and the risk of dying from common childhood diseases.

Method: We did a barrier analysis study by interacting with mothers of children age group 6-11 months to understand the reasons behind suboptimal complementary feeding practices in this age group in Bihar. Around 600 mothers were chosen from 101 blocks among entire Bihar, through a random cluster approach and interviewed for uptake of Optimal Complementary Feeding Practices.

Conclusion: Lack of knowledge/Awareness/Motivation, Lack of self-efficacy and time, Cultural norms, Mother/Family member's beliefs, Social media, Mass media and peer group's impact and lack of resources is the key barriers in "Optimal Complementary Feeding Practices".

Biography

I am Mridula Kumari from Patna, I have done my post-graduation in Home-Science. I have done B.Ed. and M.Ed. also. Now I am working with an international NGO named PCI. PCI provides technical support to JEEVIKA, (An Initiative of Government of Bihar for Poverty Alleviation), Bihar.

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Associations between IL6 Genetic Polymorphism, Socioeconomic Status and Lifestyle Factors with Risk of Hypertension among Community-Dwelling Postmenopausal Women in Malaysia

Sook Yee Lim
Faculty of Applied Sciences, UCSI University, Cheras, Wilayah Persekutuan Kuala Lumpur, Malaysia

Abstract

The study aimed to investigate the association of IL6 single nucleotide polymorphism, socioeconomic status and lifestyle factors with the risk of hypertension among postmenopausal Chinese women in Malaysia. A total of 217 healthy participants were recruited from the National Council of Senior Citizens Organizations Malaysia. The subjects were interviewed by the researchers regarding their physical activity, sleeping quality and dietary intake. The physical activity was ascertained using the Global Physical Activity Questionnaire while sleeping quality was assessed by using Pittsburgh Sleep Quality Index questionnaire. Sodium intake of participants was assessed using validated interviewer administered semi-quantitative food frequency questionnaire (FFQ). Agena® MassARRAY genotyping analysis was used to identify the signalling of IL6 rs1800796. IL6 genotypes were group into two groups (CG + GG and CC) for statistical analysis. The results showed that age (odds ratio (OR), 5.73; p= 0.001) and waist circumference (odds ratio (OR), 3.95; p= 0.007) were found significantly positive associated with hypertension in CG and GG IL6 genotype group while waist circumference (odds ratio (OR), 5.27; p<0.001) was significantly predict hypertension in CC genotype group. However, sodium intake, physical activity and sleeping quality were not significantly associated with hypertension status in both genotype groups. In conclusion, our findings suggest that the association of age and waist circumference with hypertension might be influenced by IL6 SNP. Further understanding of how IL6 SNP influences hypertension through aging and weight reduction is warranted.

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Biography

Dr. Lim Sook Yee is a post-doctoral research fellow at the Faculty of Applied Sciences, UCSI. She obtained her PhD in Community Nutrition from Universiti Putra Malaysia. Her research interest is in bone nutrition and nutrition epidemiology. During her PhD journey, she had actively presented her research data orally in several local and international conferences. She was awarded Young Investigator Award by Chinese Nutrition Society and Asia Pacific Clinical Nutrition Society in 2019. She is a member of American Society of Nutrition and a lifetime member of Nutrition Society of Malaysia.

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Risk Assessment of Diabetes amongst Young Adults (18-25 Years) From Jaipur City

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Vyoma Agarwal
IIS (deemed to be University), Jaipur, India
Simran Singh
IIS (deemed to be University), Jaipur, India

Abstract

Identification of risk factors of diabetes is required among youth as diabetes in young persons is now spreading in epidemic proportions. Present study was conducted among young male students to assess risk of type 2 diabetes mellitus (T2DM) using the IDRS and to study association of risk of diabetes with other factors. Indian Diabetes Risk Score (IDRS) is a validated and cost- effective tool to identify risk of diabetes among population. Subjects with an IDRS of <30 were categorized as low risk, 30-50 as medium risk and those with > 60 as high risk for diabetes.The present study was conducted among 151 male students from Jaipur city. A self-structured questionnaire was developed for collecting demographic information and IDRS was used for assessing risk of diabetes. MEGA STAT was used for data analysis. IDRS categorization revealed 61.5%, 38.41% and 0% were in low, medium and high-risk category. A Nutrition Education Programme was developed based on needs and preferences of the at-risk subjects, to provide knowledge on diabetes and related topics.A booklet was prepared in English language with elaborated information on symptoms, complication, risk factor, and nutritional management and sugar alternatives.

Biography

I am a student of M.Sc. (HSC) Foods and Nutrition at IIS (Deemed to be University), Jaipur. I have completed B.Sc. from IIS (Deemed to be University) in the year 2019. I have successfully completed two certified courses from Coursera (Online platform) which are “Weight Management: Beyond Balancing

Calories" from Emory University and "COVID-19" from Osmosis.org. I have participated in various national level seminars and programmes such as Conference on Global Approaches in Nutrition, inclusive Education and Textile Science and Nutritionist Entrepreneurship Programme. I have obtained a Training certificate in Food Safety Supervisor of Competence from FSSAI. I have done a 45 days internship from Apex Hospital, Jaipur and 1 month internship from a well known hospital of Jaipur that is SDMH.I have obtained a RS-CIT certificate in the year 2018.

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Assessment of Food Consumption Pattern, Anthropometric Parameters and Physical Activity Pattern of College Students

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Simran Singh
IIS (deemed to be University), Jaipur, India
Vyoma Agarwal
IIS (deemed to be University), Jaipur, India

Abstract

Poor eating habits are a major public health concern among college students during which they are exposed to stress and lack of time. Life style factors and diet practices are the attributed factors to the development of obesity. Falling levels of physical activity are contributing to the obesity epidemic. A cross-sectional study was carried amongst 200 college going girls from Jaipur city to assess their food consumption pattern, BMI, waist hip ratio and Physical activity. BMI and WHR were classified according to WHO's classification for Asians. Physical activity was assessed using short version of International Physical Activity Questionnaire (IPAQ). One fourth of the subjects consumed sweetened beverages at least once daily. A high consumption of fried foods, high salt foods, refined foods and saturated fats was observed. Nearly 37 percent of subjects were found to be overweight and obese with a mean WHR of 0.83±0.07. 52 percent subjects fell into the category of low physical activity according to the IPAQ scores.

Biography

I am Yusra Chishti, student of Masters in Foods and Nutrition from IIS Deemed to be University, Jaipur. I am an aspiring clinical dietitian. I have completed 2 months of training at EHCC hospital Jaipur and currently working as an intern at FORTIS Jaipur.I have presented an abstract on review on role of oxalates and also I have secured first position in diploma of food science and quality control

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Impact of Nutrition Education on the Health of Infants in the Urban Slums of Patna District

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Prof. (Dr.) Renu Kumari
B. R. A. Bihar University, Muzaffarpur, Bihar, India

Abstract

The health problems can be limited to some extent if all the human beings have knowledge of nutrition .It so happens that when immunity system is weak many common illnesses are going to prevalent among them often now and then. Nowadays it is COVID-19 pandemic period, it is very essential to have nutrition that will develop immune system in the body. One should be very careful right from birth regarding having nutrition. In case of infants it is the mother's milk which provide whole nutrition required for infant, because infant has soft digestive system so only liquids are to be fed. Colostrum which has immense immunity power to protect infant lifelong. Inadequate feeding practices mainly due to lack of knowledge, make infant malnourished and more prone to infections. Adequate feeding will make foundation for good normal health in later period of time. Infants need right balance nutrients for healthy growth, this is only possible when the mothers have sufficient knowledge of nutritional needs of infants right from birth. Communities must be helped to learn better habits of nutritional care of infants. Therefore, steps should be taken to solve problems of nutritional needs of infants through nutrition education and nutritional guidance.

Key Word

Nutrition, Nutrients, Colostrum, COVID-19, Pandemics.

Biography

Jyoti Sinha: Assistant Professor, Department of Home Science, J. L. College (B. R. A. Bihar University, Muzaffarpur), Hajipur, Vaishali, PIN-844101. B. Sc. Home Science from RAU PUSA, Samastipur, Bihar. Master in Home Science (Specialisation in Extension Education and Elective Nutrition in community) from SNDT Women's University, Bombay. Qualified UGC/NET.

Dr. Renu Kumari: Professor, University Department of Home Science, B. R. A. Bihar University, Muzaffarpur, Bihar, PIN-842001. Has 25 years of teaching experience. Supervised 10 Ph.D. students. Published more than 20 Journal papers.

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Comparative study of nutritional knowledge of 6th to 8th grade students in Sitapur District, Uttar Pradesh, India

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Lecturer, Home-Science, District Institute of Education and Training, Barua Sagar, Jhansi U.P, India.
Dr. Garima Upadhyay
Associate Professor, Department of Home-Science, Vasant Kanya Mahavidyalaya, Kamaccha, Varanasi Uttar Pradesh, India.

Abstract
Every child is precious not only to their parents but also to their family, society and nation. Children are assets of our country, so it is extremely important to ensure proper health care as well as adequate nutritional intake for the children. School age children do not have sufficient knowledge regarding their own health and nutrition and most often are unaware about the importance of health. The goal of nutrition education is not only to reinforce specific nutrition-related knowledge, practices or behavior but also to change their food habits.
Objective: To compare the pre and post intervention, nutritional knowledge of 6th- 8th grade students in Sitapur District, Uttar Pradesh, India
Methodology: A list of all such schools in urban area of Sitapur was prepared and thereafter through purposive sampling technique four schools were selected. Total 427 students of grade 6th to 8th were chosen purposively from the schools selected as sample. A self made questionnaire was used for assessment of knowledge of nutrition of the students before and after intervention. Researcher has imparted nutrition education to the students with the help of games. Result and conclusion: Comparatively speaking, the knowledge enhancement in the study undertaken was more in grade 6 students.

Key words
nutrition education, nutrients, intervention

Biography

Vijeta Rathore, Lecturer, Home-Science, District Institute of Education and Training, Barua Sagar, Jhansi U.P. Qualification: M.A, B.Ed, NET, Phd

Dr. Garima Upadhyay is a teaching faculty in the department of Home Science, Vasant Kanya Mahavidyalaya, Kamaccha, Varanasi (added to the privileges of Banaras Hindu University, Varanasi, Uttar Pradesh, India) having experience of fifteen years.

Qualification: B.Sc (Hons), M.Sc and Ph.D, Home Science (Food & Nutrition) from Banaras Hindu University, Varanasi

Experience: Teaching, Research (guided PG dissertations, doctorate work)

Several research papers/articles/chapters in books have been published by her in national and international journals. She is also author of a book and e-content for e-PG Pathshala, UGC, MHRD, Govt. of India. She has been awarded a minor project by UGC and various National level associations in Food and Nutrition and Public Health. She is continuously engaged in organizing and conducting workshops, Nutrition Awareness Programmes and Sensitization drives. She has been associated with community based organizations as consultant, mentor and subject matter specialist.

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Newborn Feeding: A Paradigm Shift over a Centuries

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Abstract

For time unknown breast feeding is supposed to be the only known feeding recommendation for the newborns. But the industrialization has brought in with it the advances in dairying and infant formulations. 20th century has witnessed massive decline in breast feeding rates that began in 1930s. Infant feeding has gone through immense transitions. The alterations have led to increase under nutrition where nutritional status (Anthropometry, Biochemical, Clinical & Dietary) all are altered. In USA, in 1905 EBF rates were 100%, which dropped to dismal 25% in 1971 & rose again to 79% in 2011. The Indian data also suggests that from predominantly breastfeeding nation, in NFSH -3 EBF rate was reported as 46.4% which improved to 54.9 % in NFSH-4. This is enough to emphasize the fact that the primitive practice must get back. The accompanying malnutrition turns out to be major cause of mortality and morbidity among infants. Statistics are showing that malnutrition is primary cause of death of 3million (45%) under-five children every year. Out of these, 11.6% (804,000) children expire due to inappropriate breastfeeding practices. IMS act; FDA policies are the welcome change which will help us in having healthy infant - mother dyads. It is important to study the reasons for fall of the good practices and the interventions and efforts going on to improve breast feeding related indicators to tackle malnutrition and its consequences along with other benefits of breast feeding from infant to society.

Keywords

Infant nutrition, breastfeeding, IYCF practices.

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Gremin® - A Proprietary Natural Ingredient for SPORTS Performance and Recovery – A Prospective, Double Blind, Placebo Controlled, Randomized, Interventional Human Clinical Study

Shankaranarayanan Jeyakodi
ZeusHygia LifeSciences Pvt Ltd, Raviraja Industries,TIE, Balanagar, Hyderabad, Telangana, India
Arunkanth Krishnakumar
ZeusHygia LifeSciences Pvt Ltd, Raviraja Industries,TIE, Balanagar, Hyderabad, Telangana, India

Abstract

Muscle repair and regeneration are closely linked processes that relies on the precise and timely sequencing of the proinflammatory and anti-inflammatory signals that occur postmuscle injury1, 2 Studies have reported that, the tissue repair capabilities in mammals are relatively limited3, and hence there is a growing interest to discover newer natural therapeutic interventions for muscle regeneration process. GreMin® is a proprietary patent pending herbal ingredient carrying plant based actives with potential anti-inflammatory and synergistic antioxidant properties. The present study aimed to evaluate the effect of GreMin® in accelerating the healing of acute muscle injury induced in healthy volunteers. Gremin® clinical was carried out on healthy volunteers to understand the safety and efficacy in human use. Participants were subjected to the eccentric exercise protocol and received GreMin® capsules 500 mg after meals twice a day for 10 days. Gremin® exhibited downward trend in creatine kinase, lactate dehydrogenase levels and VAS score, clearly indicates effectiveness in muscle injury recovery and pain improvement. Biomarkers like Serum ferritin, Total iron concentration in addition to physical tests revealed that Gremin® supports endurance and stamina as well. Interestingly, Gremin® regulates CBC, CRP and TNF alpha levels also pointing its potential anti-inflammatory properties.

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Biography:

Shankaranarayanan Jeyakodi is co-founder and director of technical operations for ZeusHygia LifeSciences, India. Shankar holds a master's degree in pharmacology and has 18 years' experience in nutraceutical research arena. Shankar published 17+scientific papers in peer-reviewed journals as an author / co-author and presented papers in several conferences. He has 10 national and international patent applications filed to his credit. Shankar has been instrumental in adhering to the company mission of exploring unexplored herbal extracts and bringing out scientifically proven therapeutic benefits. Shankar focused on strong innovative pipeline projects developing innovative nutraceutical ingredients with a difference eventually benefiting common people.

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To Study the Impact of Micronutrient Fortified Protein Rich Health Drink on School Children in Urban Slum, Mumbai.

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Yamini Kagalkar

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Abstract

Micronutrient Deficiency is reported to be highly prevalent in urban slums. Therefore the study was conducted with the objective of understanding the possible effect of Micro-nutrient fortified Protein Rich health drink (HD) on the physiological, biochemical and cognitive performance of school-going children of Mumbai Sub-urbs(N=468).

50 schoolchildren from 2 unaided schools were identified in slum area of Mankhurd, Mumbai were included. Children were given HD 2 tetra packs daily for 6 days a week for a period of 3 months. The baseline and end line assessment was executed using Anthropometry, Biochemical and cognitive performance.

This intervention study reveals enhancement in cognitive abilities as the processing speed and accuracy of task performance by the children improved significantly in the age-wise correlation across the phases of intervention and non-intervention. Also substantial improvement in blood parameters(N=48) of various Vitamins (Vitamin C, A, D, B12,) noted post HD intervention, Anthropometrically though there was improvement in the percentage of severely thin children which was reduced from 7% to 2% from initial to final assessment, However it doesn't indicate any changes on account of HD administration.

Biography

My name is Ms. Ruhi Qureishi I am a Clinical Dietitian by profession, I have been working in this field for about one and a half years now and studied in dietetics for 5years (Bachelor's and Master's). I am very keen in learning and right now exploring new areas in diet and nutrition.

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Nutritional Status of Women of Reproductive Age residing in the Selected Hilly region of Tamil Nadu using prediction model

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Dr.K.Silambu Selvi
Assistant professor, Department of Clinical Nutrition & Dietetics, SRM IST, Kattankulathur, India

Abstract

Background: Women of Reproductive Age (WRA) cover around on fourth of the total population in India. Micronutrient deficiencies along with Energy and protein inadequacy had become Public Health concern among the WRA. Based on their food-habit differences due to geographically isolated location, cultural and social status mounts higher burden on the dropping nutritional status among WRA. This public health research attempts to draw the determinants of Nutritional status among WRA residing in the selected hilly region of Tamil Nadu, South India.

Methods: This cross-sectional study was conducted during the month of January to March 2021, among 110 permanent residents of selected hilly region in Kodaikanal block, Dindugal district, Tamil Nadu. Selected hilly region namely Munjikal and Perumalmalai were selected. Using random sampling technique, 55 households from Munjikal (upper hills) and 40 households from Perumalmalai (lower hills) were selected. 110 individuals were screened for the study, out of which 81 fulfilled the inclusion criteria and 11 were not willing to participate in the study and 70 enrolled in the study. A Structured questionnaire which included Section A (Socio-demographic details) Section B (anthropometric details) Section C (Dietary recall) Section D (Standardized physical activity tool) and Section D (Biochemical test for Hemoglobin) was used. The Nutrient Adequacy Ratio (NAR) for selected macro and micronutrients such as Carbohydrates, Protein, Fat, Fibre, n-3 and n-6 fatty acid, Iron, Calcium, Vitamin- C, Folate, Vitamin A, Vitamin B12, Vitamin B1, Vitamin B2, Vitamin B6, Vitamin E and Selenium. The NAR was categorized as Inadequate Nutrient Intake (less than 0.50), Fairly adequate Nutrient Intake (0.50-0.70) and Adequate Nutrient Intake (0.70-1.00). The Mean Adequacy Ratio (MAR) truncated to 1, was used to denote the Nutrient Adequacy Level.

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Data Analysis: Using linear regression analysis, the linear relationship between the independent variables (predictors) and the nutritional status (outcome) was assessed. **Results: Prediction Model**- Using linear regression model, the following observations were found; the adjusted R-squared value (0.6904) was found to be 69 % of the variance in the data was being explained by the model. The p-value for the predictor in relation to its estimated regression coefficient was found to be age (0.00571), BMI (0.00738), BMR (0.03959), EAR (0.03974), Total Daily Energy Expenditure (0.00986), and Actual Observed Energy (4.46e-16), which was found to be less than 0.05 imply that the nutritional status of the women residing in the hilly region has a relationship with the mentioned independent variables (predictors). The Variance Inflation Factor (VIF) was found to be higher for BMR (9.706106), EAR (9.706106), and Total Daily Energy Expenditure (7.718410); while the VIF for age (1.131619), BMI (1.971021), and Actual Observed Energy (1.051595) denotes that BMR, EAR and TDEE have significant multicollinear effect.

Conclusion: In our study, the predictor variables were found to be Age, BMI (Body Mass Index), BMR (Basal Metabolic Rate), TDEE (Total Daily Energy Expenditure) and EAR (Estimated Average requirement) which showed linear relationship with the Nutritional status of the Women of reproductive age residing in the selected hilly region of Dindugal district.

Biography

I would like to extend my gratitude in the opportunity rendered for the abstract submission. I am a research scholar in SRM Medical College Hospital and Research Centre, kattankulathur.

1. Won the Best Poster presentation award in Research Colloquim 'Study of importance of Micronutrients in vulnerable population' held on Sep.2019
2. Published article in International journal of Food, Nutrition and Dietetics, Dec 2019, 'Healthy aspect of organic foods' in Dec.2019
3. Presented paper in UNESCO chaired International Conference BIOETHICON 2019,' Global warming- Changing minds not the climate'
4. Conducted Online survey about the 'Health Status of Men and Women during Covid 19'
5. Published in International journal of Food, Nutrition and Dietetics, Dec 2020, 'Role of Nutrition in immunity'
6. Published Scopus indexed journal in the month of March 2021, 'A study to assess the Determinants of quality of Life among Adults during Covid-19 pandemic in South India', which was presented in Research Day, held in SRM on Feb, 2021
7. Presented paper in SRM RASTH, International Conference, March 2021, 'Health status among male and female during Covid 19 lockdown' and abstract got published
8. Presented paper in SRM Research Colloquim 'A Study to assess the Nutritional knowledge and Practice about Anemia among Women residing in Hilly region of Tamil Nadu' on March 2021

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Physical Activity and Dietary Intervention Program Can Be an Effective Operational Tool to Abate the Prevalence of Lifestyle Diseases in India

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Hooghly Mohsin college, P.G. Department of Physiology, University of Burdwan, India.

Abstract

Lifestyle diseases are a diverse group of Non Communicable Diseases (NCDs), which is also known as 'disease of the civilization' and are the non-infectious ones, chronic in nature and progress slowly over the years. These are the outcome of modernization, urbanization or industrialization which has led people to adopt a new style of living with no or least physical activity and 'western diet' over loaded with refined cereals, sugar, salt, saturated and trans fat. And these two behavioral risks i.e. physical inactivity and unhealthy diet interact with one's genetic factors or physiology which results metabolic changes like obesity, hypertension, hyper-glycaemic and dyslipidemia that develop NCDs later. NCDs which are leading cause of death, premature deaths among adults, functional disabilities and impairments are an economic burden for the health care systems especially for low and middle income countries like India. Lifestyle modification through dietary and physical activity intervention program is the most cost effective way to curb the prevalence of NCDs and economic loss of the country. Sustainable Development Goal 2030 which aims to reduce NCD related mortality globally has emphasized on reduction of NCD risks and besides the tobacco control program, lifestyle management program with the implementation of dietary modification and increasing physical activity profile could bring the desired goal by 2030.

Biography

Chaitali Bose, research scholar of Hooghly Mohsin College, P.G. Department of Physiology, has completed her graduation and masters in Food & Nutrition from University of Calcutta. Bose had attached with many under-graduate colleges under university of Calcutta as a lecturer and contributed full papers and book chapters in many international and national journals or books.

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23rd – 24th September 2021

Consumption of fruits and vegetables for Improving Iron Bioavailability to combat Iron Deficiency Anemia among Rural Adolescent Girls

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Satya Prakash
Professor & Head, Horticulture, SVPUA & T, Meerut, UP, India.

Abstract

Anemia accounts for a majority of all the nutritional problem across the world and it is mainly engendered by deficiency of iron in the human body. Although it occurs in all the age group, prevalence is on a higher side among women of childbearing age. Its prevalence is exceedingly higher among developing countries, because of low socioeconomic status and impoverished admittance to healthcare services. Indian Council of Medical Research (ICMR) reported that nearly 85 percent pregnant women and more than 90 percent adolescent girls in India had anemia in year 2006. There is no significant change in the scenario as the magnitude of anemia continued to increase during last sixty years. This can be improved with an additional increase of iron and vitamin C rich fruits and vegetables in their daily diet. The objective of this study is to investigate the cross-sectional relationship between the consumption of fruit and vegetable and anaemia among rural adolescent girls. The findings indicated that the most effective, sustainable and cost effective technological approach to combat the battle against iron deficiencies is inclusion of cheap and easily available fruits and vegetables that maximize the intrinsic and added food iron without any gastro-intestinal side effects It is very essential to judiciously decide the food rich in iron as well as the food vehicles for their bioavailability.

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Key words
Prevalence, adolescents, bioavailability, consumption, nutritional

Biography
I am Vinita Singh, Working as Subject Matter Specialist (SMS) / Assistant Professor (Home Science) at Krishi Vigyan Kendra, Gautam Budh Nagar under Sardar Vallabhbhai Patel University of Agriculture & Technology, Meerut, Uttar Pradesh, India. Presentely I am persuing my Ph.D from Amity Institute of Food Technology, Amity University Uttar Pradesh, Noida (UP), India.

4th International Conference on
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23rd – 24th September 2021

Purchasing mode and its effect on the health status of adults (29-45 years): A Review

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Abstract

The lifestyle of the participants had been changed since the year 2011 because it is the year when every person start owing to smart gadgets like phones, laptops, and the gaming consoles like Play Station (PS), they all have various applications which can help the participants to divert their mind from their healthy living lifestyle into the unhealthy way. The shopping pattern of the participants is changing from physical shopping into the online or e-shopping mode, according to their workload, which also leads towards the lack of physical activity and the participants lead toward the obesity/overweight category. The objective for the following research is based on the separate research, previous studies done on obesity many times, and the shopping mode is also done in the previous research based on the economic management, but they aren't connected or link to each other, which is considered as a pilot study by finding out the following reason. For these following researches, random or cluster sampling was done by the previous researcher. The shopping mode had been compared to each other in every aspect like a discount, most purchasing product, and their pros and cons whereas the obesity rate are increasing every year due to unhealthy lifestyle. The p-value for the shopping mode with 7 years difference is decreasing from 0.94 to 0.81 and whereas for the obesity with the difference of 6 years the p-value is increasing from 0.0001 to 0.0301 which states the increasing rate of obesity. The results say that the rate of obesity/overweight is increasing, but the shoppers' mode is also required to identify.

Biography

Prashasti Aatre, PhD Scholar pursuing research in the Department of Nutrition and Dietetics, Faculty of Allied Health Sciences, MRIIRS. I have had an experience in nutrition and dietetics and have worked in hospitals and clinics. I have done my graduation and post-graduation in Nutrition and Dietetics with specialization in Clinical Nutrition.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

"8 TO 80" Health Mix – Formulation, Standardization and Shelf Life Study

Dr. BMN College of Home Science (Autonomous)
NAAC Re-accredited 'A+' Grade with CGPA 3.69/ 4
UGC Status: College with Potential for Excellence

Vrushali Dinesh Tari
Dr. BMN College of Home Science, India

Abstract

A health mix was designed and standardized which can be added in milk, or prepared by adding in other recipes and consumed. It is a healthy option and is totally free of chemicals or preservatives. It contains all natural and traditionally used ingredients like ragi [finger millet], dry fruits, dates and many more. The product was found to be giving fairly good amounts of energy, protein, calcium. The shelf life study was done for 4 weeks with the help of scoring method on hedonic scale and characteristics were taste, color, sweetness, consistency and mouth feel(after taste).The other aspects studied were labeling, packaging, budgeting and marketing.

Biography

My name is Vrushali Dinesh Tari. I have just completed my graduation in Food Science and Nutrition from Dr. BMN College of Home Science. I am a friendly person who likes to make new friends and help others in every possible way. Still a student I am always eager to try new things. I come from a family where I was always given freedom to make my own decisions. I love travelling, reading and also nature photography. This paper on health mix was formulated and studied as a part of my undergraduate program. Hoping to make more products in the future.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Molecular Insight of Aromatic Rice (Joha) on in Vivo Type II Diabetic Model System.

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Life Sciences Division, Institute of Advanced Study in Science & Technology (IASST), Guwahati, Assam, India
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Abstract

North Eastern region (NER) of India is home to various indigenous flora and fauna, including rice Oryza sativa. One such scented rice variety is Joha rice. Joha rice is one among the 40000 varieties of Oryza sativa, it is a short grain scented winter paddy prevalent for its great aroma and/or equally noteworthy taste, and have a premium value in national as well as in international market. Previous biochemical and target based LCMS analysis have identified different phytonutrients in scented rice seeds. The HRMS and MSMS spectral data analysis recognized the two compounds as essential fatty acid linoleic (C-18, ω-6 fatty acid) and linolenic (C-18, ω-3 fatty acid) acid. Thus, an in vivo study was designed to see the effects of scented rice extract on wistar rats fed on High Fat High Carbohydrate (HFHC) diet. The results shown decreased blood glucose levels in the scented rice treated group. The result from serum biochemical analysis showed that Joha rice has significant triglycerides, LDL, cholesterol lowering capacity. Also the results from liver enzyme analysis showed significant AST/ GOT and ALT/ GPT levels in treated groups. The molecular signaling was performed by western blotting targeting Akt/ PKB pathway. The results obtained for Akt, p-Akt, Gsk-3β, GLUT4 were critical in establishing Joha rice as potent nutraceutical for diabetic patients.
Keywords: Scented rice, HFHC diet, insulin resistance, nutraceutical.

Biography

Paramita Choudhury, is a Senior Research Scholar (SRF) working under Dr. Rajlakshmi Devi in the Tradional Knowledge Based Drug Development (TKDD) Laboratory of Institute of Advanced Study in Science and Technology (IASST), Guwahati, Assam, India. My research theme focuses on metabolic disorder and its amelioration by developing potent nutraceutical(s). The core area of research being the in molecular mechanistic insight of the bioactive compound(s) of scented rice (Joha) on Diabetes and Obesity with special reference to insulin and leptin resistance. I have been awarded the Lady Tata Fellowship by Lady Tata Memorial Trust (LTMT) for my research project.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

In vitro protective effects of *Moringa oliefera* extracts (water and ethanol) against UV-induced mtDNA damage in HaCaT cells

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Dermatological Sciences, Institute of Cellular Medicine, The Medical School, Newcastle University, Newcastle upon Tyne NE2 4HH, UK

Abstract

Moringa oleifera is a perennial softwood tree that has long been used in the Ayurvedic and Unani medicinal system. All parts of the tree have been shown to contain medicinal and nutritional properties, including the leaves, where its consumption not only provides nutritional benefits but also is believed able to promote younger skin complexion. This study was conducted to evaluate the protective effect of the *M. oliefera* aqueous (MOW) and ethanol (MOE) leaves extract against ultraviolet (UV)-induced mitochondrial DNA (mtDNA) damage in human keratinocytes (HaCaT). The mtDNA damage was determined by polymerase chain reaction (PCR). The antioxidant properties of the *M. oliefera* leaves extracts were also measured using diphenyl-picryl hydrazine (DPPH) and 2, 2′-azino-bis (3-ethylben-zothiazoline-6-sulphonic acid (ABTS) assays and the compounds present in the extracts were identified using liquid chromatography–serial mass spectrometry (LC-MS). The results demonstrated that both MOW and MOE showed significant protective effect ($p<0.05$) against UV-induced mtDNA damage in HaCaT, where pretreatment of HaCaT with MOE resulted in lower mtDNA

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damage compared with MOW and control. The higher protective effect of MOE might be attributed to its ability to scavenge free radicals, where MOE was shown to have lower IC50 values compared to MOW in DPPH and ABTS assays, suggesting higher potency of the extract. The LC-MS analyses of both extracts revealed the presence of chlorogenic acids derivatives, apigenins, quercetins, kaempferols, isorhamnetins, marumoside A and niazimins that may contribute to the protective effect observed.

Biography

Currently a Senior Lecturer at Universiti Malaysia Kelantan (UMK), Kampus Jeli, Malaysia; Program Coordinator for Product Development Technology Program offered by Faculty of Agrobased Industry, UMK; Chief Editor for the Journal of Tropical Resources and Sustainable Sciences (JTRSS); Professional Technologist under the Malaysian Board of Technologist.

Establishment of *In-Vitro* Culture of VitAto with Treatment of KIN and GA_3 Hormones

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Faculty of Agrobased Industry, Universiti Malaysia Kelantan, Jeli Campus, 17700 Jeli, Kelantan, Malaysia

Abstract

Sweet potato *(Ipomoea Batatas)* is one of the biggest consumed food in the world along with rice, maize, barley, wheat, cassava and potato. VitAto is another one of the new variety of sweet potato available that is known to have good potential in nutritional and functional values. At Malaysian Agriculture Research and Development Institute (MARDI), the researchers have shown that this variety has higher content of Vitamin A (ß-carotene). Tissue culture method is used to propagate this valuable plant in a mass quantity. In this study, the explant nodes will be used to be micropropagated. It is easier to be manage and surface sterilize the nodes. The explant nodes were used as a starting materials. 10 different surface sterilizing method were used and it ws shown that method D (combination of 70% ethanol, 5% hydrogen peroxide, 0.5% fungicide (Mancozeb) and 2 drops of Tween 20) was the best method for surface sterilization technique with 37.33% rate of survival. Kinetin (KIN) and gibberellins (GA_3) were supplemented in MS media and the best combination of 0.01mg/l of KIN and 0.1mg/l GA_3 shows the optimum growth of the root and shoot. This study is aimed to increase the production of VitAto using micropropagation technique in optimum environment with the best ratio of hormones as supplement for the optimum growth of plant tissue.

Biography

Dr Suhana binti Zakaria is a lecturer at Agrotechnology Programme, Faculty of Agrobased Industry, Universiti Malaysia Kelantan Jeli Campus, Malaysia. Her main research area is Plant Biotechnology that focus more about tissue culture technology in micropropagation of floriculture and medicinal plant, cryopreservation and secondary metabolite production.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Improved methods of extraction of 4-hydroxyisoleucine (4-HIL) from fenugreek (*Trigonella foenum-graecum* L.,) seed fractions and its nutraceutical activity.

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Madeneni Madhava Naidu
Academy of Scientific and Innovative Research (AcSIR), Ghaziabad, India

Abstract

Extraction of oleoresin yield and 4-hydroxyisoleucine content was optimized considering different fractions (Whole seed, husk and cotyledon), solvents (acetone, chloroform, methanol, ethanol and distilled water), water-ethanol ratio (10:0, 7:3, 5:5, 3:7, 1:9, 0:10) through HPLC. After optimization, improved extraction methods (conventional, microwave and ultrasound with different extraction conditions and parameters) were carried out. Isolation of the compound was done through ion-exchange chromatography and open column chromatography and characterized by TLC, FT-IR, NMR and MS. The yield was quantified using HPLC. The total phenolic content was determined, and the antioxidant activity was seen through DPPH, ABTS and FRAP methods. Cell Viability, cell death/apoptosis and ROS assays were conducted.

Optimization showed that cotyledon fraction, water and ethanol solvent with the ratio 1:9 had a higher yield significantly through HPLC quantification. Ultrasound extraction at 60 amplitude and 30 mins with 1:12 solid: solvent ratio gave the highest oleoresin yield among all other extraction conditions and parameters. The 4-HIL rich extract was characterized through TLC using ninhydrin qualitatively, the structure was confirmed through NMR and the molecular weight through positive mode MS. The extract also showed positive effects related to antioxidant activity, ROS assay, cell viability and cell death.
Selective extraction of cotyledon increased the concentration of 4-HIL twice as compared to the whole seed quantified through HPLC. Further, ultrasound extraction eased extraction procedure to recover

most of the desired compound. This is a novel improved method to increase yield efficiency and reduced solvent usage.

Keywords

4-hydroxyisoleucine, ultrasound extraction, optimization, quantification, characterization, nutraceutical activity

Biography

Uma Maheshwari Srinivasa is currently a research scholar funded by Department of Biotechnology, Government of India, through Integrated M.Sc-Ph.D in nutritional Biology, working under the supervision of Dr. Madeneni Madhava Naidu, Head and Chief Scientist in the department of Spices and Flavor sciences at CSIR-CFTRI, Mysuru, India. During the summer internship, the author has worked on Cloning of HMGB protein in the department of biotechnology at IIT-Hyderabad during 2017. UMS is a graduate from University of Agricultural Sciences, Bangalore with a Gold Medal for bagging University top merit

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Evaluation of Synergism in Anti-Oxidant Efficiency of Quercetin and Resveratrol Isolated From Plant Sources

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Dr D Chandraprabha
Associate professor, Department of Biochemistry, Sri Ramakrishna College of Arts and Science for Women, Coimbatore, Tamil Nadu, India

Abstract
Flavonoids and phenols are one of the natural sources of secondary metabolites in the plant kingdom. Various efforts are being made to isolate the plant compounds of Quercetin and Resveratrol from different plant sources. It has been set up that these compounds can scavenge free radicals produced in the body. Quercetin and Resveratrol is a polyphenol and flavonoids compound which is familiar in supplying the antioxidants and their other significant bioactive agents. The main goal of this present study was to compare antioxidant activities of Quercetin and resveratrol which was isolated from the plant sources. In vitro antioxidant activity for individual plant compounds and its combination was determined by 1, 1-diphenyl-2-picrylhydrazyl (DPPH), ABTS+ radical scavenging assay, Ferric Reducing Antioxidant Power, Total Reducing antioxidant potential, superoxide anion scavenging activity assay and anion scavenging activity assay of free radical scavenging methods. Our outcomes propose that a mix of this Quercetin and resveratrol synergistically improved their active formulations. The antioxidant potential of these plant compounds was also comparable to that of standard rutin. In conclusion, the individual antioxidant efficacy showed better results for Quercetin. The synergistic efficacy of both plant compounds showed potential benefits of antioxidants with respect to health.

Key Words
Quercetin, Resveratrol and Synergic, antioxidant

Biography

Nivetha M is currently a Ph.D. Research Scholar at the Department of Biochemistry in Sri Ramakrishna College of Arts and Science for Women affiliated to Bharathiar University, Coimbatore. She has finished her B.Sc. and M.Sc. in Biochemistry in the same Institution. She has published two research articles in the humic acid and a country-based, a citrus lemon which was helping to cure cardiovascular diseases. Her main research interests are in plant biochemistry which includes the antioxidant studies of a bioactive plant compound.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Evaluation of Milk Protein Hydrolysates in Protein Energy Malnutrition Induced Rats: Deciphering Its State Of Immunity and Antioxidant Activity

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Jyothi Lakshmi A
CSIR-Central Food Technological Research Institute, Mysore, India.

Abstract

Protein energy malnutrition (PEM) is attributed to the deficiency of protein intake and complements its effect by depleting the immune system. The investigation was undertaken to study the effect of whey protein hydrolysate and buffalo milk protein hydrolysate in modulating the immune response and mitigating pathophysiological changes in PEM-induced rats. Male Wistar rats were fed with isocaloric diets containing 15%, 5%, and 2 % protein for PEM induction for 3 weeks followed by replenishment with whey and buffalo milk protein hydrolysates for 5 weeks. Histopathology of the spleen, thymus, mesentery, and small intestine was done to observe any changes in the cellular structures. The rats were also evaluated for various changes in biochemical parameters, antioxidant activity, and cytokines involved in humoral and cell-mediated immunity. Whole-genome sequencing of PEM-induced rats revealed the differences in gut microbiota with increased abundance of the pathogenic genus of Escherichia, and Clostridium along with hyperplasia in submucosal lymphoid tissue. However, on replenishment, there was an increase in probiotic bacteria Lactobacillus and Bifidobacterium genus. Enzyme-linked immunosorbent assay demonstrated that hydrolysates were effective in modulating the expression of IL-6, IL-10, and sIgA. The catalase activity in severe PEM rats was 15.29 ± 5.12 µM/min/ml as compared to control 8.28 ± 5.12 µM/min/ml ($P<0.05$)

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Biography

Pavan Kumar Prakash has done his master's in Biotechnology from Bangalore University. He was working as a "Junior Scientist" in Connexios life science for nearly 2 years and as "Research Associate " in The Larvol Group wherein he was awarded the "Associate of the Month". Currently, he is pursuing his Ph.D. in CSIR- Central Food Technological Research Institute, Mysuru, India

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

The Responsibility of Organic Farming for Improving Food Security and Sustainable Agriculture from the Stance of Farmers

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Abstract
The use of chemical fertilizer can spectacularly increase crop production and ensure a higher quality of yield. Heavy and inappropriate use of chemical agricultural contribution has carried out serious problems of food protection, poor quality of the agricultural product and environmental contamination. It is essential to promote safe crop production with confirmation of detail agricultural actions for sustainable agriculture and rural development by encouraging farmers to practice appropriate environmentally-friendly agricultural production with improving farmer's source of revenue as well as raising farmer's attention and assurance. So this research is to be carried out to improve the farmer's economy using organic rice cultivation to conquer the food toxicology using SRI- System Rice intensification for food safety and secure. SRI Rice cultivation has been extensively acknowledged by the farmers in view of the fact that it is found to boost the crop yield with a reduced amount of contribution of water and fertilizer.

Keywords
Chemical fertilizer, Organic farming, Plant growth, yield, Food security

Biography
Dr. G Subbulakshmi is currently working as an Assistant Professor in Department of Chemistry at JAIN (Deemed to-be University), Bangalore. Ms. Monisha S is currently working as an Assistant Professor in the Department of Forensic Science, JAIN (Deemed to-be University), Bangalore.

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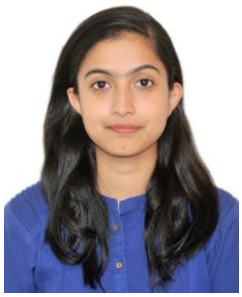
4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Food Contamination and Prevention



Dr. G Subbulakshmi
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Arya Nair A
Department of Chemistry, Jain (Deemed-to-be) University, India.

Abstract

Nutrition plays a key role is human health and well-being. Nutrients are taken up by an individual in the form of food and is one of the basic needs of a human being. Contamination of food is one of the extensive public health issues. Presence of contaminants in food can result in causing various food-borne diseases and can affect one's immune system. Hence protecting the common public from the potential hazards caused by food contamination is a vital task. Examining the contamination levels and formulating food safety and control measures are important in providing safer food globally. This review highlights the different types of contamination like physical, biological, chemical contamination and their affects in human body. Physical contamination says about the physical substances that can contaminate food like pests where in chemical contamination explains about various chemicals like herbicides/heavy metals and biological contamination occurs due to the growth of microorganisms like fungi and bacteria in food. Recent approaches on prevention of contamination and improvement of food safety are discussed through this article. Consumption of nutritious food is a global concern, since it

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affects human species at every stage of life cycle. Foods with contaminants reduce their nutritional value delaying the ability to fight an infection paving the way for serious illnesses. Food borne diseases by the end of the day slow down socioeconomic development by reducing life expectancy. Thus, the consumption of safe food is vital that ensures better living and sustainable development.

Key words
Nutrition, Contamination, Food-Borne disease, Consumption, Immunity.

Biography
1. Dr. G Subbulakshmi is our guide who is an assistant professor in chemistry department at Jain Deemed to be University school of sciences,Bangalore.She has completed her PhD and has published more than twenty papers, attended fifty conferences.
2.Harshitha BC is a final year student at Jain Deemed to be University school of sciences,Bangalore.She is pursuing BSc in life science department and is interested in biomedical research,infectious disease,bioinformatics and is an avid reader.
3.Nandhitha Senthilkumar is a final year student at Jain Deemed to be University school of sciences,Banglore.She is pursuing BSc in life science department.Her interest is in fields of environmental biotechnology,medical bacteriology and passionate about faunal diversity.
4. Anagha A is a final year student at Jain Deemed to be University school of sciences,Banglore.She is pursuing BSc in life science department.Environmental and molecular biology fascinates her and was a part of a minor project in biochemistry.
5. Aviksha GP Nanda is a final year student at Jain Deemed to be University school of sciences,Banglore.She is pursuing BSc in life science department.Her interest is in microbial biology,plant pathology,bioinformatics and instrumental chemistry and was a part of a minor project in biochemistry.
6. Arya Nair A is a final year student at Jain Deemed to be University school of sciences,Banglore, pursuing BSc in life science department.She is interested in medical microbiology,genomics and precision medicine and was a part of a minor project in biochemistry.

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Promoting effects of the food additive, Sunset Yellow on *N*-methyl *N*-nitrosourea-Induced Mammary Gland Carcinogenesis in Female Rats

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Abstract
The purpose of this study was to test the role of Sunset Yellow (SY) dye widely used food coloring additive during the promotion and progression stages of chemically-induced mammary gland carcinogenesis in rats. Two 50 mg/kg body weight intraperitoneal (i.p.) doses of *N*-methyl *N*-nitrosourea (MNU) were injected with one week interval into each of 36 female Sprague–Dawley rats to induce mamamry tumors. After two weeks of the last MNU administration, the rats were divided into 6 groups. Rats in group1 (n=12) were injected with MNU only. Those in group2 (n=12) were injected with MNU and fed high dose of SY (161.4mg\kg\day). Group3 MNU were fed low dose (80.7 mg\kg\day) of SY. Group4 (n=6) control group were injected with 0.09% saline. Group5 (n=6) were fed SY high dose. Group6 (n=6) were fed SY at low dose. After 22 weeks of treatment, the rats were killed and samples were processed.

Results
SY on both treatment doses has exerted a significant dose dependent increase in the tumor incidences, multiplicities, tumor volumes, and average tumor burden, as well as it has decreased the tumor latency

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in treated groups. It was evaluated by immunohistochemical and RT-PCR analyses for tumors, mammary tissues and serum.

Biography

I hold BSc degree in Biology, Zoology department in faculty of science Tanta University (2007), I finished my Master degree in experimental zoology (Genetics) in 2016 where I focused in the role of widely used food coloring during the promotion and progression stages of mammary gland carcinogenesis and its co-relation with human breast cancer(2016).

Apart from my study, I worked as a medical laboratory scientist in Central Laboratory for medical research and blood banking from 2010 to 2019, then I started to work in National Food Safety Authority till now in field of food safety and nutrition.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Levels of Sodium Benzoate in Selected Water-Based Beverages in Metro Manila: A Dietary Exposure Assessment Study

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Abstract

Sodium Benzoate (SB) is a common preservative in water-based beverages used to inhibit the growth of mold, yeast, and bacteria. However, excess intake of SB can be detrimental to health. Thus, the present study aimed to assess the dietary exposure of Filipinos to SB through consumption of water-based beverages. 17 beverage samples, collected from four districts in Metro Manila, were analyzed for their SB contents using high-performance liquid chromatography (HPLC). The obtained

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concentration data were then combined with the 2008 Philippine National Nutrition Survey (NNS) food consumption data to derive a dietary exposure estimate of Filipinos to SB through beverage consumption. The exposure estimates were then compared with the ADI of SB at 5 $mg.kg^{-1}$ day^{-1}. Results showed that the analyzed samples contained up to 285.69 $mg.kg^{-1}$ of SB. Exposure of Filipinos were found at levels below its ADI on the basis of average (7 to 25% ADI) and high-consumption (17 to 71% ADI) of water-based beverages. However, children ages 1.0-5.9 years old was the most exposed and at-risk population against the adverse health effects of SB. In general, exposure of Filipinos to SB through consumption of water-based beverages does not constitute a significant health risk. Based on the findings, it is recommended that intake of water-based beverages by children be closely monitored to minimize food safety risks due to high exposure to SB.

Biography

Ms. Guilaran graduated with a Bachelor's Degree in Chemistry and a Master's Degree in Food Science (Magna Cum Laude). She is currently working as a Science Research Specialist II in the Department of Science and Technology – Food & Nutrition Research Institute where she has been involved for nine years in the conduct of research projects on food quality and safety.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Evaluating *Beta vulgaris* Extracts for Antioxidant Potential and Lipase Interaction: a Study Comprising Metabolite Profiling, *in-vitro*, and *in-silico* Method

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Promila Gupta
University School of Biotechnology, Guru Gobind Singh Indraprastha University, New Delhi, India.

Abstract

Beta vulgaris (BV) is a popular vegetable and industrial crop, and its roots are especially consumed to boost immunity and stamina in various forms. Earlier studies have suggested that underutilized parts of the plants are equally rich in the medicinally and nutritionally important components. Recent studies on Covid-19 pathogenesis reported that Covid-19-induced pancreatic injury results in increased pancreatic lipase (PL) secretion. The elevated level of PL increases fat digestion (which triggers inflammation and adiposity) and oxidative stress due to mitochondrial damage. The present study evaluated BV roots (R) and the left-over parts (leaves: L, and root-peels: RP) for the potential to interact with PL and reduce oxidative stress. Extracts of BV parts were prepared using acetone (A) and methanol (M) and tested for phenolic and flavonoid contents. Of which, BVLA, BVLM, BVRA, BVRPA, and BVRPM extracts were studied for antioxidant potential using DPPH, ABTS, and FRAP assays and the two best extracts, BVLM and BVRPA (IC50 for $DPPH^{\cdot}$ scavenging 103 and 214 µg/ml; for $ABTS^{\cdot+}$ scavenging 21 and 41 µg/ml; FRAP values 26 and 42.5 Trolox equivalents/mg dry extract, respectively) were allowed to interact with PL in-vitro. It showed a decrease in fluorescence with increasing concentrations of the extracts. Bioassay-guided metabolites profiling of the two was done using Gas chromatography-mass spectrometry. The analysis showed various precursors and metabolites of sterols, saturated fatty acids, and terpenes which were reported to be nutritive, antioxidant, and biologically active (such as antioxidants: vitamin E and phytol; ß-sitosterol and docosanoic acid interacted with SARS-CoV-2 proteins). Of these, few were allowed to interact with PL in-silico, where vitamin E and phytol showed good interaction (Ki = 0.124 and 11.6 mM) and indicated that they might facilitate the quenching in-vitro by interacting with the aromatic amino acids of PL. The metabolite compositions presented BVL and BVRP as important sources of functional components that may

prevent imbalance in fat-metabolism by interfering with lipase activity and reducing oxidative stress, which may further relieve adiposity and cytopathic effect of SARS-CoV-2. The results may also help design health-supporting foods and drugs from BV.

Biography:

Swati Chaturvedi (Presenting author) Ms. Swati Chaturvedi is currently a doctoral student at University School of Biotechnology, Guru Gobind Singh Indraprastha University, New Delhi, India. She received a bachelor's degree from Deen Dayal Upadhyay Gorakhpur University, Uttar Pradesh, India and a master's degree in Applied microbiology and Biotechnology from Banasthali Vidyapith (a University), Rajasthan, India. She has been awarded a research fellowship by Council of Scientific and Industrial Research, India and recently, received the Swachhta-Saarthi Fellowship, 2021 under Waste to Wealth Mission of the Govt. of India. She is interested in exploring the potential of plant bioactives in oxidative stress and metabolic regulation.

Promila Gupta (Corresponding author) Dr. Promila Gupta is currently working as a Professor at University School of Biotechnology, Guru Gobind Singh Indraprastha University, New Delhi, India. She has done graduation with honours in Botany from Zakir Husain College, University of Delhi, India followed by master's and PhD from Department of Botany, University of Delhi. Her research interests include exploring medicinal and ecological aspects of diverse plants. Currently, in her lab plant secondary metabolites with multiple potential including nutraceuticals are being explored. She has authored several research articles in relevant areas and served as an honorary reviewer for many journals.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Dietary Exposure of Filipinos to Ochratoxin A and Glyphosate from Commonly-Consumed Foods using Theoretical Maximum Daily Intake (TMDI) Approach

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Abstract

Ochratoxin A (OTA) is a mycotoxin resulting from poor storage conditions while glyphosate is an herbicide used in agricultural production. Exposure to foods contaminated with these substances may result in unfavorable health problems. This study, therefore, aimed to estimate the exposure and characterize the risk of the Philippine general population, children, and women of childbearing age (WCBA) to OTA and glyphosate using the Theoretical Maximum Daily Intake (TMDI) approach. The dietary exposure was estimated using individual food consumption data from the National Nutrition Survey 2008 combined with maximum levels set by relevant authorities. The risk was characterized by evaluating the exposure estimates against the set acceptable daily intake (ADI) for glyphosate, and permissible tolerable weekly intake (PTWI) for OTA. Results revealed that the population groups had low exposure to glyphosate at 16 to 59% of its ADI. Cereal grains and flour (98%) were found to be the major contributor to dietary intake. However, consumers among children and WCBA were highly exposed to OTA at 163 and 314% PTWI, respectively. Bread and rolls (57%) and maize (31%) were the

major contributors of OTA among children and WCBA, respectively. Based on the findings, it is recommended to conduct a refined exposure assessment by analyzing actual OTA values of the identified food contributors to validate the results of this study.

Biography:

Ms. Billedo is a food technologist and a registered chemical technician, working as a science research specialist in the Food and Nutrition Research Institute (FNRI) in the Philippines. The nature of her undertakings as a researcher in the said Institute is on food safety focusing on dietary exposure assessment studies.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Effects of hydrolysis parameters on an edible marine seaweed (*Eucheuma denticulatum*) for the production of prebiotic oligosaccharides

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Abstract

Seaweed is a sustainable source of marine oligosaccharides, a potential prebiotic ingredient for the functional food industry. The current study aims to optimize the oligosaccharide fraction obtained through thermal hydrolysis of an under-utilized non-cultivated seaweed, *Eucheuma denticulatum*. Response Surface Methodology (RSM) applying the Box-Behnken Design (BBD) was used on the tested parameters including temperature (105ºC-135ºC), hydrolysis time (15-35 min) and sulfuric acid concentration (0.05-0.2M). The oligosaccharides fraction ED-F1 was selected for the optimization due to its highest prebiotic scores against beneficial gut bacteria including *Lactobacillus plantarum*, *L. casei, L. acidophilus*, *Bifidobacterium animalis* and *B. longum*. Hydrolysis time was revealed to be the most significant parameter determining the oligosaccharides yield. The optimal hydrolysis conditions for ED-F1 were determined at 120ºC, 21 min, 0.12M H_2SO_4, achieving the highest yield at 11.15 g/100 g of

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dry weight and a minimal production of HMF (1.11 g/L). Molecular weight of ED-F1 (1025 Da) was determined through HPLC-SEC while FT-IR analysis revealed the presence of sulfated oligosaccharides with similar characteristics to the *i*-carrageenan. These findings elaborate the different parameter's role for the efficient production of prebiotic oligosaccharides from *E. denticulatum,* which could be a promising source of functional food ingredients for the development of health foods.

Biography

Birdie Scott Padam is passionate about seaweeds and natural products and works as an R&D microbiologist for Seadling, a seaweed biotechnology company. Currently, he is also pursuing his doctoral study in Food Technology in the Universiti Malaysia Sabah, Malaysia. He has authored/co-authored academic papers, book chapters and patents on seaweeds, probiotics, antimicrobials as well as received several awards for product innovation in the national and international level.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Three Phase Purification of Milk Clotting Protease from Wrightia Tinctoria Fruit and Studies on Its Casein Subunit Specificity

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Jain (Deemed to be University), Bangalore, India

Abstract

Crude aqueous extract of *Wrightia tinctoria* fruit was subjected to three phase partitioning (TPP) with three different ammonium sulphate concentrations (40, 60, 80%) and their effect on concentrating milk clotting proteases were examined with 1:1 ratio of crude extract to t-Butanol. Proteases that concentrated in the interphase (IP) fraction of 60 and 80% salt concentration exhibited high milk clotting activity. TPP contributed to reduction in Caseinolytic Activity (CA) and enhancement of Milk Clotting Index (MCI) in these IP fractions compared to the crude enzyme. Casein (whole and kappa) hydrolytic pattern was analyzed by tricine SDS PAGE. Electrophoretic pattern of hydrolysate after 1 hr incubation revealed hydrolysis of κ-CN by CE, IP 60 and IP 80 fractions.

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Appearance of two low molecular weight bands approximately around 15 kDa indicated the specific affinity and controlled hydrolytic behavior by the proteases. Study provides evidence towards the utility of TPP in concentrating these milk clotting proteases and in improving their MCI.

Biography

Bassil Yaseen Aljallah (presenter) M.Sc student of the Department of Biochemistry, Jain (Deemed to be University) Bangalore under SII fellowship program. Previously associated with Department of Chemistry, Damascus University (Lab Assistant) and Khirbet Al-Fursan High School, Hasaka, Syria (Chemistry Faculty);
Harshitha D P, Sreelakshmi Desai, Uzma Tanzeem (M.Sc students) **and Vasuki Aluru (**Ph.D Scholar) - other project team members and **Dr. Bindhu O S** [Head, Department of Biochemistry, Jain (Deeemed to be University)]-
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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Effect of Plasma-Activated Water on Hydrothermally Modified Talipot Starch

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Kappat Valiyapeediyekkal Sunooj
Department of Food Science and Technology, Pondicherry University, Puducherry, India

Abstract

The starch isolated by the alkali method from talipot palm (*Corypha umbraculifera* L.) is a non-conventional starch with high yield and high amylose content. Talipot starch was subjected to hydrothermal treatments; heat-moisture treatment (HMT) and annealing (ANN) with plasma-activated water (PAW). HMT and ANN with PAW created fissures and surface degradation and significantly increased ($p \leq 0.05$) the relative crystallinity of talipot starch from 16.76 % to 26.97 %. The increased crystalline perfection of modified starch significantly decreased ($p \leq 0.05$) the swelling power and increased the pasting temperature indicating improved shear and thermal stability of modified starch gels. The reactive species present in the PAW reduced the retrogradation tendency by reducing the setback and final viscosities and improving the paste clarity of modified starches. PAW with acidic nature decreased the starch digestibility and increased the resistant starch content to 51.02 % and 52.10 % after HMT and ANN treatments, respectively.

Keywords

Heat-moisture treatment; annealing; plasma-activated water; reactive species; resistant starch.

Biography

Basheer Aaliya is a doctoral candidate under the supervision of Dr. K. V. Sunooj (Assistant Professor) from Food Chemistry and Engineering Laboratory, Department of Food Science and Technology, Pondicherry Central University, Puducherry. Current research interests include biopolymers, non-conventional starch, starch modification and characterization, and biodegradable composite film preparation and applications.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Synthesis of Some Medicinally Active Flavones

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Upasna Devi
Upasna Devi, Asst. Professor, Dept of Chemistry, R. G. P. G. College, Meerut, India

Abstract

The flavones are well known group of naturally occurring chemical compounds with chromone moiety present in the plants. Flavones belong to the flavonoid family. Flavonoids are group of natural compounds with variable phenolic structures found in plants particularly the photosynthesizing plant cells.They are present as phytochemicals in flowering plants. Chemically flavonoids consisting fifteen carbon skeleton having two benzene ring linked via a heterocyclic pyrane ring.They can be divided into variety of classes such as flavones, flavonols, and flavonones. Fruits, vegetables, tea and wine are the main dietry sources of flavonoids for humans. As a dietry components, flavonoids have health-promoting properties due to their high medicinal properties. Several biological activities have been ascribed to simple flavone and its derivatives such as anti-inflammatory, antiplatelet, anticancer, antimicrobial antiulcers, antioxidants, free radical scavenging capacity, coronary heart disease prevention, hepatoprotective. In plant system, flavonoids help in combatingoxidative stress and act as growth regulators. Most recent researches have focused on the health aspects of flavonoids for humans. Due to potential pharmacological properties, flavoness are topic of great interest for medicinal research. This review highlights the synthesis and applications of some flavones.

Key words

phytochemicals. flavonoids, flavones, chromones, polyphenols.

Biography

My name is Upasna Devi. I am working as an assistant professor in Raghunath Girls Post Graduate College, Meerut affiliated to C.C.S. University Meerut. I have master degree in Chemistry and also qualified NET. I am pursuing for Ph.D. degree on the topic Synthesis and Antimicrobial Activities of Some New Heteroaryl substituted flavones/chromones.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Hypocholesterolemic Action of Oats

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Abstract

Cardiovascular and metabolic disorders have been the major cause of death. According to World health organisation, cardiovascular diseases (CVD) are the number one cause of death globally. Elevated serum cholesterol is a significant risk factor for developing CVD along with other disorders. Hypercholesterolemia can be treated by prescribing statins but this therapy is associated with various negative side effects. Diet is a key risk factor for the development and prevention of CVD. Thus, using dietary approaches that tackle risk factors can be a key strategy for the prevention of CVD and other metabolic disorders. One such approach is consuming oats; the first study to reveal that oat consumption reduced plasma cholesterol goes back to 1963. The hypolipidemic effect of oat has been attributed primarily to the ß- glucan. Nonetheless significant role of gut microbiota in the maintanence of cholesterol metabolism cannot be overruled. B- glucan to lower cholesterol is thought to be triggered by several processes by increasing the viscosity of the intestinal contents, altering the recycling of bile salts with the help of microbiota, lowering insulin levels and by producing propionate and other short chain fatty acids. Therefore regular consumption of oats can reduce cholesterol levels and eventually CVD's.

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Biography

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4th International Conference on
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23rd – 24th September 2021

Determination of Preferred Phytochemicals Content in Tomatoes of Different Cultivators in Kolar

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Abstract

Tomato (solamunum lycopersicum L) is a commonly cultivated vegetable crop among the world and its utilization was increased day by day. The health benefits of tomato have made tomato and its by-products are suitable for an alternative choice as a functional food. Kolar is the largest tomato growing district in Karnataka and kolar tomatoes are bright in colour compared with other district tomatoes. Hence present study was carried out to evaluate the preferred phytochemical content in tomatoes in various soil type in different cultivators. Freshly harvested tomatoes and soil samples (automic absorption spectroscopy method (AAS) was analysed using standard method. The data revealed that beta carotene, lycopene, total phenolics and flavonoids content of tomato sample-1 were 2608.4 mcg/gm, 4.87mg/100gm, 80mg GAE/kgFW and 121.87 mg/RE/kgFW respectively. In tomato

sample-2, 2753.8 mcg/100g, 3,15mg/100gm, 180 mgGAE/ kgFW, 264.06 mg/RE/kgFW respectively. In tomato sample-3 were 2082.9 mcg/100gm, 1,47 mg/100g, 480 mgGAE/kgFW, 325 mg/RE/kgFW respectively. Beta carotene (2753.8 mcg/100g) content exhibited highest in tomato sample-2 in red soil had mineral composition of sodium 0.24dsm -1 , nitrogen 144.26 kg/ hectare, phosphorus 101.4 kg/hectare, potassium 184.6 kg/hectare respectively. Lycopene content(4.87mg/100gm) was highest in the cultivator of Chintamani taluk kolar with soil composition was sodium 0.54 dsm-1, nitrogen 94.08 kg/hectare, phosphorus 39.29 kg/hectare, potassium 259.3 kg/hectare. The total phenolics 480 mgGAE/kgFW and flavonoid 325 mg/RE/kgFW content was higher in tomato sample 3 grown in mulbagal taluk kolar with soil composition of sodium 0.09 dsm-1, nitrogen 156 kg/hectare, phosphorus 43.96kg/hectare and potassium 184.8 kg/hectare respectively. The study was concluded that kolar district growing tomatoes were rich in lycopene and β-carotene contents. The consumption of these tomatoes may reduce the risk of degenerative disease.

Keywords
Flavonoid, Lycopene, Phytochemical, Tomato.

Biography
Name: Kavya KL
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Myself Kavya KL second year MSc student Department of Clinical Nutrition and Dietetics SDUAHER Kolar. My area of research in clinical nutrition and I have done project on. Determination of Preferred Phytochemicals Content in Tomatoes of Different Cultivators in Kolar.

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Nutraceutical Profile of Millet Laddus Containing Lauric Acid Stabilized By Using Virgin Coconut Oil

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Sri Devaraj Urs Academy of Higher Education and Research, India.

Abstract

Virgin coconut oil is a highly value-added oil in the health food market. Coconut oil was obtained from the harvested mature coconut through different processes of extraction such as cold, hot or conventional extraction processes. 3 different oils i.e., virgin coconut oil, coconut oil and ghee were selected in this study and fatty acid analysis was done for those fats. As our main interest was on the amount of lauric acid present in it, it was observed that virgin coconut oil had the highest amount of lauric when compared to the other two fats. It was also observed that ghee had a large difference as it contains much lesser amount of lauric acid. To develop a product out of virgin coconut oil and to replace it with other fats used in cooking, millet laddus were prepared using 2 different fats i.e., virgin coconut oil and ghee. Pearl millet and ragi were used in the form of flours. Sensory evaluation was done for both the products and the overall acceptability of laddus made out of virgin coconut oil was high when compared to the laddus made out of ghee.

Biography

Myself Sheema Noor, a 21 years old student from Sri Devaraj Urs academy of higher education and research, Karnataka, India. I'm perusing my master's degree in clinical nutrition and dietetics. I'm interested in research and I've done some studies on the importance of virgin coconut oil and the fatty acids present in it and would like to present it in the international conference.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Evaluation of Refrigerated Storage on Physicochemical, Microbiological, and Sensory Properties of Optimized Formulation of Eggnog

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ICAR-National Dairy Research Institute, India
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ICAR-National Dairy Research Institute, India
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Abstract

Eggnog is a dairy beverage having blend of ingredients such as milk, egg, sweeteners, salt, and stabilizers. Till date, no commercial formulation of eggnog is available in India. Therefore, the present study was attempted to optimize the formulation of eggnog using response surface methodology (RSM) following the Box-Behnken design. RSM results revealed 62.2 % milk, 23 % cream, 6.8 % eggnog base with 4 % each sugar and skim milk powder as the optimized formulation based on the responses of dependent variables (heat coagulation time, thermal gelation temperature and viscosity). Optimized eggnog (OE) had significantly higher ($P < 0.05$) total solids (27.14 ± 0.19 %), protein (9.78 ± 0.87 %) and fat (10.45±0.26%) content than control product (CE). Further, refrigerated storage study observed a decrease in the percent of total solids, lactose, and total sugar content. Though OE had higher heat stability and viscosity, CE was observed with higher thermal gelation temperature. Moreover, HCT and thermal gelation showed rapid decrease in CE than OE during

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storage. OE was recorded with higher ($P<0.05$) sensory scores for smoothness, viscosity, and overall acceptability, while egg and sweet flavor scores were preferred for CE. OE received higher overall acceptability scores throughout the storage period.

Biography

Kamini Sharma belongs to Amritsar, Punjab and completed her Bachelor's Degree in Food Science and Technology (Honours) from Khalsa College of Education, Amritsar, India in 2019. She pursued her Masters in Food Technology from the ICAR-National Dairy Research Institute, Karnal, India. Kamini's research work mainly focuses on the process optimization of eggnog and determination of bioactivities under standardized static digestion method. She has received Junior Research Fellowship during her Master's programme from 2019-2021.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Formulation and Evaluation of Metformin hydrochloride - Okra Gum (*Abelmoschus esculentus*) Composite Mucoadhesive Microbeads for the treatment of Diabetes mellitus: A Synergistic Approach

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Vinayaka Mission's College of Pharmacy, Vinayaka Mission's Research Foundation (Deemed to be University) Salem, India.

Abstract

Okra gum derived from *Abelmoschus esculentus* has been found to posses antidiabetic activity. In the present research work \an attempt was made to formulate a potent antidiabetic mucoadhesive microbeads dosage form using Metformin hydrochloride and Okra gum to derive a synergistic antidiabetic effect. Biodegradable and biocompatible okra (*Abelmoschus esculentus*) mucilage was extracted for the development of stomach specific mucoadhesive alginate microspheres by ionotropic gelation method. Concentrated solutions containing different proportion of Okra gum was used to formulate the microbeads by ionotropic gelation technique with the aid of seaweed alginate. Okra gum was incorporated with the drug and formulated as microbeads. Approximately nine microbead formulations were evaluated by *in-vitro* evaluation. The microbeads were evaluated for the percentage yield and surface morphological characteristics were studied using scanning electron microscopy. *In-vitro* evaluation revealed that MTMB6 formulation has shown a major differentiating factor amongst the formulations. The evaluation study shows that EF6 formulation has shown a major differentiating factor given the best result of drug release which was found to be 91.50% after 12 hr in simulated intestinal fluid (pH 7.4).The study has revealed natural food materials possessing antidiabetic activity when combined with Metformin hydrochloride when formulated as controlled release microbeads can provide a synergistically more antidiabetic activity and will provide more opportunities for further study in the field of novel drug delivery system.

Keywords

Okra Gum; Metformin Hydrochloride; Sodium Alginate; Gelation; Mucoadhesive Microsphere

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Biography

I am Annapoorani Arjunan currently working as an Assistant Professor in the department of Pharmaceutical chemistry at Vinayaka Mission's College of Pharmacy, VMRF-DU, Salem, and Tamilnadu, India. Prior to this job I was a lecturer in Padmavathi College of Pharmacy, Dharmapuri, and Tamilnadu, India. I received my undergraduate degrees B.Pharm from Tamilnadu Dr.MGR Medical University and Postgraduate degree M.Pharm from Vinayaka Mission's Research foundation. At present I am working of a SEED money research grants received from VMRF-DU on developing novel gastroretentive formulations using natural polymers loaded with synthetic antidiabetic drugs and its analytical evaluation using FTIR spectroscopic technique. I've published my research work in indexed journals and a patent was filed on the FTIR quantitation technique.

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4th International Conference on
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Development of Healthy Food Product using Papaya Processing Waste

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Abstract

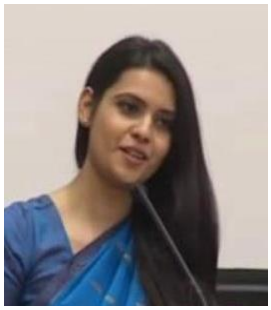
Papaya (Carica papaya)is known for its nutrition, pharmaceuticals and phytochemical properties. Processing of papaya generates about 30-35% of waste. Dicing of papaya produces about 8.5% of peel waste, 6.5% of seeds, 32% unusable pulp (because of imperfection in cubes), and about 53% of final product. Considering the nutrient profile of the papaya, and the amount of waste produced during processing, an attempt has been made to utilise the canning industry papaya waste for food product development. Spray drying was used to dehydrate the liquefied papaya juice; by studying the physical and nutritional properties of spray dried powder an healthy pooshak and papaya pomace burfi were developed. 20% incorporation of spray dried powder into a health mix powder was highly acceptable wherein total carotene content was 2.8(µg/100g) in the pooshak providing 600kcal and 22gms of protein per 100gms. However, the fibrous remains after extracting the juice which was high in carotene content (6.8µg/100g) was utilised for developing a burfi (sweet product) which was also highly acceptable and provided around 80kcal/serving. Thus, the developed products in the present work were a value addition to the industry waste with a scope for waste utilisation.

Biography

Myself Doctorate in Food Science from CSIR-Central Food Technological Research Institute worked on the topic "Development of product by incorporation of bioactive compounds in solid food matrix" published 8 papers in SCI journals and a review chapter in CRC. As a part of Master degree programme evaluated the ongoing mid-day meal programme, published 2 papers and 1 research note in NASS rated journals. My Post Doctorate as SERB-NPDF is from GKVK, University of Agricultural Sciences, Bangalore with DST-GOI funding. I have also worked as Asst Prof for vocational courses and bagged best planned project award for "Taster day to promote vocational courses" in a workshop conducted by UKERI-UGC, India. Presently, working as Asst Prof and handling B-Tech(Food Technology) and B.Sc (Food Science and Nutrition) courses.

4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Identifying the pathological models of COVID-19 Disease - Temporal Staging of Disease (Shad vidha Kriya Kala Model) and Disease Outcome model based on the principles of Ayurveda



Dr. Charu Sharma
All India Institute of Ayurveda, New Delhi , India

Abstract

Background: Global community is facing an unprecedented pandemic of novel coronavirus disease (COVID-19) caused by Severe Acute Respiratory Syndrome - Coronavirus 2 (SARS-CoV- 2). The prevalent gaps are variable host responses towards the infection. This research is a preliminary attempt to bridge this gap through exploring host-centric disease pathways and validating them in the diagnosed cases of COVID-19 disease. The models investigated in the study are Temporal Staging of Disease (Shad vidha Kriya Kala Model) and Disease Outcome model – A function of three variables.

Methods: A questionnaire-based, cross-sectional study was conducted in two cohorts of diagnosed cases of COVID–19. Study participants were subjected to a questionnaire to assess the temporal staging of COVID-19 disease in the subjects and to assess the relationship between the three determinants of the disease - exposure, clinical severity and *Vyadhiksamatwa* (immune status)

Results: In the study , COVID-19 disease was found to follow the temporal pattern (Model 1) described in Ayurveda and the staging include Sanchaya, Prakopa, Prasara , Sthana Samshraya and Bheda stages, further corresponding to 2.59 days, 2.7 days , 2.11 days , 4.09 days , 7 days and 15 days respectively. In the second model, clinical Severity was found strongly correlated with Immune status (with the value of Pearson Correlation - 0.740 significant at the 0.01 level (2-tailed).

Conclusions: The study reports host centric two pathological models of COVID-19 disease based on the principles of Ayurveda. The relationship between the variables were observed and they can be applied for preventive and therapeutic measures.

Keywords

COVID-19; pathological models ; Ayurveda

Biography

Dr. Charu Sharma is a research scholar in Dept. of Gynecology & Obstetrics (Ayurveda) from All India Institute of Ayurveda, New Delhi. She has been awarded with Jeevaka award , Scholar of the year award recently for her academic excellence. She secured AIR 1 in national level PG entrance examination conducted by Ministry of AYUSH.

She is currently the principal Investigator in a research project : Evaluation of the Comparative Effectiveness of Ayurvedic management and conventional standard care in Gestational Diabetes Mellitus - An open label : Randomized Control Trial and C0-PI in Investigator in the research project of " Identifying the pathological models of COVID- 19 in Ayurveda: Shatkriyakala and Vikar vighata; bhava abhava- A Cross Sectional Study" . She has been awarded for her research work in various national and international seminars. She is also the Co-founder of an ed-tech startup "AyuScholar E-School of Ayurveda" , she has been teaching more than thousand BAMS doctors , preparing for higher studies.

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Food Security in Current Scenario of Climate Change

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Abstract

Climate change affects all the four dimensions of food security *i.e.* availability, accessibility, utilization and stability. Food production has to increase 50 percent by 2030 to meet with the demands of a growing global population. The risk of hunger resulting from climate change is the result of both direct impacts on food systems and of indirect impacts that affect the different dimensions of food security. Design of food security programmes must take climate change into account in order to ensure sustainability. Approaches to food security must recognize climate change and environmental degradation as drivers. By explicitly integrating climate change into food security programming actions to address food security will also increase capacity to adapt to climate change. Adaptation approaches must incorporate actions targeted at climate-resilient, livelihoods and disaster risk reduction as well as addressing the underlying causes of vulnerability. Food security can also be increased by framing such strategies which helps in reducing the vulnerability to climate change. An urgent and strong action is required on mitigating climate change to avoid hunger in the coming decades particularly for poor and vulnerable people of developing countries.

Biography

Dr. Gargi Goswami is currently working as Assistant Professor (Agronomy) in the College of Horticulture, VCSG UUHF Bharsar Uttarakhand. She had completed her graduation in Agriculture in 2011 and Post graduation in (Agriculture) Agronomy in 2013 from GBPUA&T, Pantnagar (U.K.). Later she completed the degree of Ph.D. in (Ag.) agronomy from BHU, Varanasi (U.P.) in 2017.

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4th International Conference on
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23rd – 24th September 2021

From Starter-Assisted To Fermentome-Driven: A Paradigm Shift in Sourdough Fermentation

Hana Ameur
Free university of Bolzano, Italy

Abstract

Meta-genomic, culturomic, metabolomics and meta-transcriptomics analyses of eight sourdoughs representative for different countries were performed. Cultivable bacteria and yeast species identified by the culture dependent methods were also identified by meta-genomic approach. Metagenomics analysis described the sourdough metagenome, including dominant bacterial and fungi strains and subdominant population. The metabolic functions identified by KEGG strongly support the evidence of sourdough fermentation. Multi-copies genes encoding for enzymes involved in key sourdough metabolisms were identified in sourdoughs. Meta-transcriptomic profiles of the different sourdoughs confirmed the expression of core genes encoding for the biosynthesis or catabolism of amino acids. From the comparison of all omics data, emerged a clear picture of the potential metabolic background vs. metabolisms expressed under sourdough conditions. The ecological fundaments retrieved will ensure the resilience of sourdough to various causes of disturbance.

Biography

I am currently pursuing my PhD in Food Engineering and Biotechnology since November 2018 till date. I am currently in the process of concluding my thesis by the end of year 2021. My main field of interest is the application of multiomic analyses in sourdough fermentation to reveal the complex carbohydrate and aminoacid metabolic networking of dominant and sub-dominant bacteria and yeasts

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Sourdough fermentation as a tool to enhance the nutritional and functional features of *Tritordeum* bread

Kashika Arora
Free University of Bolzano, Italy

Abstract

Traditional sourdough fermentation of Tritordeum flour was characterized for its microbiological, biochemical, and nutritional properties. Viable plate counts of presumptive lactic acid bacteria, the ratio between lactic acid bacteria (LAB) and yeasts, the rate of acidification, biochemical features, the number of operational taxonomic units (OTUs), and diversity indices by 16S and 26S metagenome sequencing, altogether demonstrated the maturity of the sourdough during 10 days of propagation. Although members of the phylum Firmicutes were present at very low or intermediate relative abundances in the flour, they became dominant after 1 day of propagation. LAB were almost exclusively representative of the Firmicutes by this time. Weissella confusa already dominant in Tritordeum flour and stably persisted, though it was later flanked by facultative heterofermentative LAB (e.g. Lactobacillus plantarum). Yeast diversity was consistent throughout the sourdough propagation with Saccharomyces cerevisiae as the dominant population. The Tritordeum bread prepared with sourdough had improved digestibility in vitro in comparison to baker's yeast bread as demonstrated by changes in gut microbiota by 16S metagenome sequencing and metabolomic profile by NMR analysis dominated by short chain fatty acids (SCFAs). Overall, this study revealed the potential of sourdough fermentation by the exploitation of a sustainable cereal.

Biography: I completed my school education in 2008 followed by a Bachelor's (2008-2012) and Master's (2013-2015) degree in Biotechnology. I got the opportunity to gain hand-on experience on NGS sequencing in Thermofisher Scientific as a trainee (2015-2016). Later, the Teaching and Research Assistant position in Ghent University Global Campus (South Korea) from 2016-2018 inculcated by interest in research due to which I am currently pursuing my PhD in Food Engineering and Biotechnology since November 2018 till date. I am currently in the process of concluding my thesis by the end of year 2021.

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Biography:

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23rd – 24th September 2021

Sustainable Enhancement of Digestibility and Therapeutic Potential of Pearl Millet Based Products through Probiotic Fortification

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Central University of Haryana, Mahendergarh, Haryana, India
Adarsh Kumar Shukla
Central University of Haryana, Mahendergarh, Haryana, India
Gunjan Goel
Central University of Haryana, Mahendergarh, Haryana, India
Tejpal Dhewa
Central University of Haryana, Mahendergarh, Haryana, India
Ashwani Kumar
Central University of Haryana, Mahendergarh, Haryana, India

Abstract

Pearl millet is a protein rich grain constituting minerals, fats and different phenolic compounds. The complete fermentation of pearl millet with buttermilk as inoculum of lactic culture endows nutritionally enriched pearl millet product. The present study reports the optimization process of controlled fermentation of pearl millet using potential probiotic lactic culture for enhanced digestibility. The fortification of rabadi by probiotic culture was assessed at different fermentation temperature (35, 42 and 45 °C). After completion of fermentation, the final product was validated against pH and titratable acidity resulting declined pH in all the preparations with increase in titratable acidity. The used probiotic (*L. rhamnosus, Lactobacillus sp. and S. faecalis*) fortified rabadi, *L. rhamnosus* fortified rabadi at 42 °C of autoclaved batch showed lowest insoluble content such as acid-detergent fiber (ADF) and neutral detergent fiber (NDF). Low quantity of insoluble fiber depicts high digestible energy. Fermentation at temperature 35, 42, and 45 °C, against *L. rhamnosus* of non-

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autoclaved batch results in five times enhancement of ADF content and minute NDF content against the control (non-fermented rabadi at 4 °C) therapeutic activity of *L. rhamnosus* fortified pearl millet rabadi.

Biography

Prakash Yadav joined the Central University of Haryana in the year of July-2017 as a research scholar in the department of Nutrition Biology. He received Junior Research fellowship from the prestigious Council of Scientific and Industrial Research (CSIR) organization-New Delhi, India. Prakash obtained postgraduate degree in Biotechnology and since then associated with functional foods against the relieve of type-II Diabetes. In addition to this he also worked in the field of probiotic based foods for development of immune systems.

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4th International Conference on
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23rd – 24th September 2021

Techno-Economic Efficacy of Refractance Window Dried *Curcuma longa*

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Indian Institute of Technology Guwahati, India

Abstract

In this study, the drying characteristics of slice and paste *Curcuma longa* has been addressed using three alternate drying methods namely refractance window drying (RWD), oven drying and tray drying. A comparative assessment of the alternate drying was targeted in terms of efficacy associated to desired characteristics such as moisture content, antioxidant activity, curcumin content, total phenolic content, and total flavonoid content. Among all cases, slices samples obtained from the RWD at 95 ^{o}C process have been analyzed to possess optimal combinations of all evaluated parameters along with significant reduction in drying time. Finally, a comparative conceptual economic assessment of laboratory scale RWD, tray and oven drying processes has also been targeted in the article. Primarily the efficacy of RWD has been characterized due to its process simplicity and significant reduction in drying time to achieve similar nutritional characteristics as those achieved using tray and oven drying processes.

Keywords

refractance window drying; turmeric; slice; paste; oven drying; tray drying

Biography

Preetisagar Talukdar has her expertise in drying technology and food product development. Her work on process and product characteristic of refractance window dried *Curcuma longa* has given an edge in the development of fortified products such as golden milk and turmeric tablet. Currently she is a research scholar in Indian Institute of Technology Guwahati in the Department of Chemical Engineering.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Quantitative Appraisal of Nutrition, Lifestyle and Food Safety Content of Upper Primary and High School Textbooks of Central Board of Secondary Education (CBSE) & State Board Schools of India

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Symbiosis School of Biological Sciences, Symbiosis International ,Deemed University, Lavale, Pune,India
Radhika Hedaoo
Radhika Hedaoo, Symbiosis Institute of Health Sciences, Symbiosis International, Deemed University, Lavale, Pune,India

Abstract

There is a need to impart education on nutrition, healthy lifestyle, and food safety together as interconnected aspects of well-being through inclusion of this information in the school curriculum as topics are studied mandatorily as a part of curriculum. Hence, the objective of this study was to conduct the quantitative analysis of the contents of text books of CBSE and State board of Maharashtra textbooks (Grade VI to Grade X).The content on nutrition, lifestyle, diseases and food safety was coded independently by two investigators by quantifying the data according to the number of chapters, pages, lines, illustrations and activities. Analysis of the content quantified was done using frequencies and percentages as against total number of chapters and pages. Inter-coder reliability was assessed using Cohen's kappa. There was a moderate agreement (Kappa = 0.69) between coders for CBSE text books and for state board textbooks (Kappa= 0.79) respectively. In CBSE and state board textbooks, nutrition content was covered maximum in VI grade compared to other grades. There was an incoherent coverage of the other lifestyle components such as stress, sleep, physical activity along with food safety while partial coverage of health and disease contents in grade VI and grade IX. Grade VIII and Grade X had scarce lines dedicated to ill effects of consumption of drugs, smoking and alcohol. The present study concluded that the nutrition, lifestyle and food safety topic coverage is insufficient in science textbooks. The present study strongly recommends the necessity for nutrition curriculum for schools to inculcate healthy eating and lifestyle among school children.

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Biography

Radhika Hedaoo is an Assistant Professor at Nutrition & Dietetics Program at Symbiosis International University and her broad areas of interest are nutrition education, curriculum development and adolescent nutrition studies. Ms.Navya Kutty is a master's student of nutrition and dietetics program at Symbiosis International (Deemed University), Pune,India.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Seaweed Fucoidan from *Stoechospermum marginatum* (C. Agardh) Kutzing as a Potent Inhibitor of Dengue Virus (DENV) Strains: A Targeted Molecular Dynamic Simulation Study

Saravanan Muniappan
Vinayaka Mission's Research Foundation (Deemed to be University), India.

Abstract

Dengue viral infection a most serious and lethal disease spread by arthropods. The need for the Antidengue therapy is alarming because there're no approved drugs or vaccine for the cure of this lethal disease. Fucoidans are the sulfated polysaccharides derived from seaweeds have earned significant attention and are widely examined against many viral infections. The current study is focused to perform *in-silico* molecular dynamic study on Fucoidan isolated and characterized from brown seaweed *Stoechospermum marginatum* (C. Agardh) Kutzing. Fucoidan were docked against serotypes of the virus that cause dengue infections (DENV-1, DENV-2, DENV-3 and DENV-4) The Dengue viral non-structural protein NS2B/NS3 Protease (NS2B/NS3 Pro) was selected as a target viral enzyme for the computer aided screening. The antiviral activity of fucoidan was investigated and found that they have exhibited potent interactions with viral protease which was evident by their hydrogen bonding affinity. The results revealed that the fucoidan showed good inhibition potential against all the dengue virus serotypes and a maximum effect was noticed against DENV-2 serotype. Hence, this docking study performed on fucoidans against dengue virus strains may be useful in the advanced experimental investigations for the radical cure of this lethal disease.

Keywords

Dengue Virus; Molecular Dynamics; NS2B/NS3 Protease; binding affinity; *in-silico*

Biography

I am Saravanan Muniappan presently pursuing my Ph.D as a full time Research Scholar at Vinayaka Mission's Research Foundation (Deemed to be University), Salem, Tamilnadu, India. The research work is on *in-vitro* and *in-silico* antiviral screening of fucoidans derived from brown seaweed *S.marginatum*. I Hold a PG degree in Master of Pharmacy in Quality assurance specialization from

Goa University, India. I completed my graduation in Pharmacy from Madras medical College in the year 1996. Further I hold a Diploma in pharmacy from Coimbatore Medical College. I've published my research work in indexed journals and presented the findings as the oral presentations in the International conferences

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4th International Conference on
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23rd – 24th September 2021

Ayurveda Management of Gestational Diabetes Mellitus – A Case Series of Stratified Based Approach Based On Heterogenicity

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All India Institute of Ayurveda, New Delhi , India

Abstract

Background : Gestational diabetes mellitus (GDM) is increasing in prevalence and corresponds to the drastic increase in the prevalence of overweight and obesity in women of childbearing age. Worldwide, there are guidelines with recommendations for appropriate management strategies for GDM. This case series deals with Ayurveda management of Gestational Diabetes Mellitus based on heterogenicity model. The diagnosed cases were stratified based on phenotype (Prakriti) and intervention was administered. This study reports a case series (n=10) of GDM managed with interventions of Ayurveda – Oral medication, diet and yoga.

Objective : To determine the effectiveness of Ayurveda interventions in management of GDM Cases. The secondary objective was to investigate the therapeutic utility of the therapy , taking onto consideration maternal as well as foetal outcomes.

Design : Case Series

Study Intervention and Data Collection :

The intervention included Nishamalaki Tablets (NA) and Sarvamehahara Kashaya Ghana Vati (SKG) , dietary modifications and Yoga interventions in the diagnosed cases of GDM. The outcomes were measured were 1) Glucose Monitoring – Objective & Subjective 2) Maternal Outcomes 3) Foetal Outcomes.

Results : 11 pregnant women with a mean age of 25.44 years (range), SD ±(±5.175) and mean period of gestation 29.78 (± 3.416) years were enrolled in the study. One dropped out of the study, but all remaining ten participants were followed up, for glycemic control maternal and foetal outcomes were assessed at the end of treatment. No adverse were reported during the study.

Conclusion : Ayurveda management of Gestational diabetes mellitus was found beneficial in the cases. The heterogenicity in pathophysiology of GDM, can be translated to treatment guidelines. This case series is an attempt to validate the approach with management of Ayurveda. It is important to

investigate the mechanism of action of the treatment with a larger sample and suitable research methodology.

Biography

Dr. Charu Sharma is a research scholar in Dept. of Gynecology & Obstetrics (Ayurveda) from All India Institute of Ayurveda, New Delhi. She has been awarded with Jeevaka award , Scholar of the year award recently for her academic excellence. She secured AIR 1 in national level PG entrance examination conducted by Ministry of AYUSH.

She is currently the principal Investigator in a research project : Evaluation of the Comparative Effectiveness of Ayurvedic management and conventional standard care in Gestational Diabetes Mellitus - An open label : Randomized Control Trial and C0-PI in Investigator in the research project of " Identifying the pathological models of COVID- 19 in Ayurveda: Shatkriyakala and Vikar vighata; bhava abhava- A Cross Sectional Study" . She has been awarded for her research work in various national and international seminars. She is also the Co-founder of an ed-tech startup "AyuScholar E-School of Ayurveda" , she has been teaching more than thousand BAMS doctors , preparing for higher studies.

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4th International Conference on
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23rd – 24th September 2021

Plant Based Nutrients as Booster of T-Cell and Immunity during COVID-19

Dr.Sangeeta
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Abstract

COVID-19 and communicable diseases are always challenge for the humanity, researches and history of such a pandemic again and again rise a big question on medical science ,our food habits and lifestyle. We fight from such a air born and communicable disease many times but this time when COVID-19 spreads across the world due o which millions of lives have end forever. All branches of medicine provide solution by their possible way and tried to fight against the corona virus, Our life style have been changed and very important and drastic change we made in our food habit and dietary intake pattern. Researches and finding emphasizes about the plant based food habit. Plant based foods best source of fibers which improve digestion and gut health, better gut grow healthy gut bacteria which helps in immune boosting. Vegan and plant based food also increase T-cell in the body which works as scanner and make photocopy of antibodies and fight against corona virus and another host agent and also helps in reducing inflammation. Fiber is very important in reducing cancer risk and also helps in weight management. Acute respiratory tract infections are a major driver of mortality and morbidity worldwide, as demonstrated by the recent corona virus disease 2019. Herbal and plant foods like Giloy, ginger, tulasi, turmmeric and other many herbs are very effective in treating COVID-19 because all these are helpful in boosting immunity and clear congestion of trachea which helps to maintain better oxygen level. Present study was conducted in online survey to find out the impact of herbs and plant based food in fighting COVID-19. Result shows that 74% were agree that natural and plat based food are helpful in boosting immunity where as 15 % were not sure about its impact rest of 11% believe that non-vegetarian diet is best for immunity and better in fighting corona virus.

Key Words

Plant Based Diet, Immunity, T-Cell, Covid-19.

Biography

- Myself Dr.Sangeeta - Assistant Professor-Home- science (Food & Nutrition)
- Working at present in Ramabai Govt. Women P.G. College -Akbarpur-Ambedkarnagar -Uttar Pradesh- India
- Teaching Experience 11 year Post Graduate and 11 Year Undergraduate .
- Published 25 research papers, in National and International Journals ,Proceedings.
- Published Book. _ Entitled ' Vegetarianism and COVID-19" in 2020.
- Awards - Received Young Scientist Award And Best teacher award in 2019.
- Award from Higher Education - On 5th September 2021 .
- Delivered lectures
- Organised 4 webinars.

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4th International Conference on
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23rd – 24th September 2021

Factors Impinging Chemical Pesticides Used Among Fruits Vegetable Farmer

Tengku Halimatun Sa'adiah Binti T Abu Bakar
Universiti Malaysia Kelantan, Malaysia

Abstract

Rapid growth of food demand caused many farmers widely used chemical pesticides to increase the productivity and quality of crops. Unfortunately, chemical pesticide can harm the natural environment and human health. The objective of this study aim to identify factors impinging chemical pesticides used among fruits vegetable farmers. The questionnaires were distributed by using simple random sampling technique to 105 fruits vegetable farmers. Descriptive analysis and Spearman correlation were employed for analysis to achieve the purpose of study. The findings indicated that the level of attitude (M=4.05), subjective norm (M=3.90), perceive behavioural control (M=3.84), and chemical pesticide used (M=3.92) have a high mean score. Besides, there is positive significant between attitude, subjective norm and perceive behavioural control on chemical pesticide used among fruit farmers. This study is importance for better understanding on chemical pesticide used by farmers to promote sustainable agriculture and green growth.

Biography

Mrs Tengku Halimatun Sa'adiah T Abu Bakar is a lecturer at Faculty of Agro-Based Industry, Universiti Malaysia Kelantan (UMK), Malaysia. She graduated from Univesiti Teknologi MARA, Malaysia with Diploma, Bachelor and Master of Plantation Management. Her main research field are agriculture extension and social science.

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4th International Conference on
Food and Nutrition
23rd – 24th September 2021

Nutritional Analysis and Antioxidant Property of Hibiscus Extract Incorporated Jellies

SGT UNIVERSITY
SHREE GURU GOBIND SINGH TRICENTENARY UNIVERSITY
(UGC & AICTE Approved) Gurugram, Delhi-NCR

Akshita Singh
SGT University, India

Abstract

Natural plant merchandise wide used these days as a result of increasing the burden of diseases. *Hibiscus Rosa Sabdariffa*. (Family Malvaceous) is a plant that's cosmopolitan throughout the planet. Its leaves, bark, roots, and flowers are utilized in the ancient Indian system as drug to treat numerous diseases. A Fruit jelly is a product made from drinkable, sugar, gelling agents, and acids in method of cooking, aiming to get gelatine like consistency. Sensory analysis issues the interpretation of what the senses inform regarding the merchandise. Determination of shelf life of the product was also done using plate count method (using MacConkey plates) one plate kept in incubator(37^0C) and the other one in refrigerator(4^0C). It is necessary to form an inventory of descriptors adequately denoting the products and their properties. Many trails were developed and therefore the most acceptable treatment was T2 (2.5g of hibiscus powder). The proximate analysis of the hibiscus jelly (T2) showed the protein (2.053±0.05/100g), carbohydrate (28.23±0.065g/100g), fat (0.6±0.05g/gm), fibre (5.0933±0.272g/gm), moisture (80.84±0.040g/gm). Antioxidant activity came out to be(37.12±0.03g/gm). The value of study was conjointly determined by the assistance of value (T0 = ₹15.45) and (T2 = ₹18).It is a homemade organic product, they are straightforward to carry, digest, flavoury and delectable.This study offers the transient regarding the nutritional analysis and antioxidant property of hibiscus extract incorporated jellies.

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4th International Conference on
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23rd – 24th September 2021

Dietary Zinc Deficiency Stunting Among Infants Aged 6 – 24 Months and Potential Link With Impaired Immune Responses: A Mixed Mode Analytical Cross-Sectional Study

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Abstract

Child stunting is a global dilemma that affects an estimated 155 million or 22.9% of children under the age of five worldwide. Moreover, there is increasing evidence that zinc deficiency can adversely affect the physical and mental growth of children as well as having an association with impaired immune function. This study aimed to determine the association between dietary zinc intake and its determinants with stunting among infants aged 24 months and below. This is a cross-sectional study, which was carried out between February 2019 and March 2019 in five health clinics in Petaling District, Selangor. A total of 232 infants was included in the study and their anthropometric data, socio-demographic, type of infant feeding and 24-hour dietary recall were recorded. The mean for height-for-age z-scores (HAZ) was -1.285 ± 0.118, which indicate normal HAZ. About one-third of the infants (29.7%) were stunted (below -2SD). Among the stunted children, 52.2% showed a moderate delay in linear growth for their HAZ between -2 to -3SD, while 47.8% presented severe delay (HAZ<-3). Stunting was most prevalent among Chinese infants (39.4%) compared to Malays (28.4%) and Indians (36%). The mean zinc intake was 1.108±1.054 among infants aged 6 months to 24 months old. Low zinc intake from complementary feeding was significantly associated with stunting (t=-2.22, p=0.026) and there is a significant association between adequate and inadequate zinc intake with stunting (X^2=18.42, p=0.001). The age of infants (β=0.313, 95% CI=0.139,1.181, p=0.014) showed a direct association with dietary zinc intake while being a child fed with both breastfeeding and formula feeding inversely associated with zinc concentration (β=-0.513, 95% CI=-2.400,-0.226, p=0.021) among infants 6 – 24 months. On the other hand, among stunted children, gender is significantly associated with dietary zinc (β=-0.484, 95% CI=-0.079, 1.445, p=0.031) while being a child fed with both breastfeeding (β=-0.984, 95% CI=-2.284,-0.653, p=0.016), and formula feeding (β=-0.808, 95% CI=-

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1.765,-0.614, p=0.001) consistently showed an inversed association with dietary zinc intake. Furthermore, among stunted children, mean calories (kcal) (ß=0.707, 95% CI=0.002, 0.005, p=0.001), dietary protein (ß=0.549, 95% CI=0.014, 0.101, p=0.012), dietary carbohydrates (ß=0.504, 95% CI=0.002, 0.024, p=0.023), dietary fat (ß=0.802, 95% CI=0.076, 0.165, p=0.001), and dietary phosphorus (ß=0.684, 95% CI=0.003,0.008, p=0.001), showed a positive significant association with dietary zinc intake. Since child aged 6 – 24 months fed with breastfeeding or formula feeding presented with low dietary zinc intake, increased zinc-rich food in complementary food should be advocated importantly to enhance immunity and hence prevent stunting.

Biography:

Siti Madihah Binti Muhammad Royani is a PhD student at the Faculty of Applied Sciences, UCSI. She obtained her undergraduate degree in Nutrition from Management and Science University in 2021 and received Direct Admission from bachelor degree to doctoral degree in UCSI. She has actively presented her research results verbally and via poster presentation at various local and international conferences during her studies. At the 13th International Medical Pharmaceutical, Cosmeceutical, and Health Sciences Symposium (13th iMPaCHs) in 2019, she received the Top 3 Best Oral Presenter Award for her research project. She is a member of the American Society of Nutrition at the moment.

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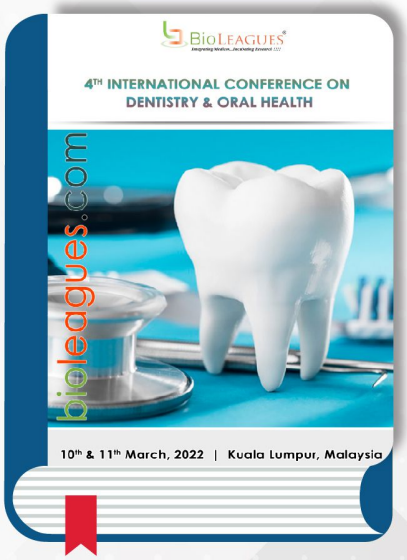

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