



**4TH EDITION OF
INTERNATIONAL
NUTRITION
RESEARCH
CONFERENCE**

VIRTUAL EVENT

19-20
JUNE 2023

Contact us:

Ph: +1 (702) 988-2320 | Whatsapp: +1-779-429-2143

Email: nutrition-research@magnusconference.com

Website: <https://nutrition.magnusconferences.com/>

19-20 **JUNE**

BOOK OF
ABSTRACTS

4TH EDITION OF
**INTERNATIONAL
NUTRITION RESEARCH
CONFERENCE**

Contents

Welcome Message	5
Keynote Speakers	9
About Host	10
Day 1 Keynote Presentations	13
Day 1 Oral Presentations	18
Day 1 Poster Presentations	33
Day 2 Keynote Presentations	36
Day 2 Oral Presentations	42
Participants List	52

Welcome Message

Professor Hari Niwas Mishra, Indian Institute of Technology Kharagpur, India

Dear congress visitors, it is an honor and pleasure to write a few welcome notes. Food Technology today makes unprecedented progress, since a few years with the advent of Industry 4.0 methods for smart food processing and packaging. This opens new opportunities to adapt advance methods for efficient post-harvest management resulting in the minimization of losses, and value addition in agri-horti produces enabling manufacture of better-quality foods. Food technology has a great potential in providing nutrition and health security to people by not only ensuring supply of adequate quantity of food but also the foods which are shelf stable, more nutritive and safer to consume. I wish the Nutri 2023 a grand success.



(H N Mishra)



Welcome Message

Dear congress visitors and participants, I am honored to be at this congress and to share this atmosphere with you. Unfortunately, there are many disasters in the world. We experienced one of the biggest of these in Turkey. I am grateful and owe my gratitude to the peoples of the nations who have helped our country with great devotion. They stood by our side and shared our pain. There is a significant climate change in the world. It is seen that it is effective on humanity as never expected. The most important areas affected by climate change are agriculture and therefore food. Access to food is very important for all humanity. It is necessary to produce enough food and to deliver them to every human being. For this reason, there is a great need for every study to be done on food. It is very valuable for our future to plan our productions by protecting the environment and complying with the green agreement at every stage we experience.

Hope to live in a beautiful future.

Dr. Sahnur Irmak, Izmir, Turkiye



Welcome Message

Dear participants,

I will be very honored and proud to be at the “4th Edition of International Nutrition Research Conference”, which brings together many researchers from different disciplines worldwide. Nutrition is an indispensable element for the continuation of life in biological organisms, albeit in different ways and through various mechanisms. Advances in molecular genetics have enabled the elucidation of the hereditary mechanisms behind many biological processes and pathways associated with nutrition. The identification of new epigenetic modifications and their use in practical and clinical applications led to the development of novel perspectives. This cumulative information has paved the way for the creation and testing of scientific hypotheses covering many branches of biology, from genetics to physiology, microbiology to molecular evolution. The COVID-19 pandemic has shown us once again that nature is much more complex than we thought. The future of biology depends on a better understanding of genetics and biotechnology.



Assoc. Prof. Dr. Sena Ardıçlı, Bursa, Türkiye



Welcome Message

It is my pleasure to speak few words on welcoming the delegates of Nutri 2023. As a Grain and Starch technologist, Grain (cereals, millets, pulses) processing in general and Rice technology in specific is an important subject under Food Technology. Rice is processed into parboiled, products like flaked, expanded and popped rice. Parboiled rice is nutritious and technologically superior as it yields high head rice and least broken, but on cooking sensory wise it is little rubbery compared to cooked raw rice. Millets are small grains but they are nutritionally better as they contain good amount of phytochemicals, dietary fiber and good amount of important minerals. Pulses are protein rich dicotyledons and are processed into dhal for daily consumption. In this Nutri 2023 meet, Globally famous Scientist and Technologists in several branches of Food Science and Technology are delivering talks, youngsters are speaking. I whole heartedly welcome all of them, on my behalf as well as from the members of Organizing Committee of this Meet. I wish for all the good success for these two days deliberations.



Vasudeva Singh, Gauhati University, India

Keynote Speakers



Jack Timothy Rogers
Harvard University,
United States



Mohammad Kamil
Lotus Holistic Healthcare
Institute, United Arab Emirates



Hari Niwas Mishra
Indian Institute of Technology
Kharagpur, India



Vasudeva Singh
Gauhati University, India



Sahnur Irmak
Olive Research Institute,
Turkey



Sena Ardici
Bursa Uludag University,
Turkey



Yasin Ozdemir
Ataturk Horticultural Central
Research Institute, Turkey

*Thank You
All...*



ABOUT MAGNUS GROUP

Magnus Group (MG) is initiated to meet a need and to pursue collective goals of the scientific community specifically focusing in the field of Sciences, Engineering and technology to endorse exchanging of the ideas & knowledge which facilitate the collaboration between the scientists, academicians and researchers of same field or interdisciplinary research. Magnus Group is proficient in organizing conferences, meetings, seminars and workshops with the ingenious and peerless speakers throughout the world providing you and your organization with broad range of networking opportunities to globalize your research and create your own identity. Our conferences and workshops can be well titled as 'ocean of knowledge' where you can sail your boat and pick the pearls, leading the way for innovative research and strategies empowering the strength by overwhelming the complications associated with in the respective fields.

Participation from 90 different countries and 1090 different Universities have contributed to the success of our conferences. Our first International Conference was organized on Oncology and Radiology (ICOR) in Dubai, UAE. Our conferences usually run for 2-3 days completely covering Keynote & Oral sessions along with workshops and poster presentations. Our organization runs promptly with dedicated and proficient employees' managing different conferences throughout the world, without compromising service and quality.



ABOUT Nutri 2023

We are delighted to announce the forthcoming 4th Edition of the International Nutrition Research Conference (Nutri 2023), organized by Magnus Group. This highly anticipated event will be conducted as an Online Event from June 19-20, 2023. Building upon the success of previous editions, our primary objective is to foster knowledge exchange and collaboration in the field of Nutrition. Under the captivating theme "From Evolution to Revolution: A Holistic Perspective on Nutrition's Frontier Novelties," this conference offers a unique opportunity for academicians, researchers, scientists, and industry representatives to converge and share their invaluable insights, groundbreaking research, and innovative ideas. The event will serve as a global platform, facilitating discussions on practical challenges, concerns, and potential solutions.

Food technologists and nutritionists are paving the way for new avenues of investigation, leading to the development of cutting-edge Nutrition science. As we embark on this exciting journey, it becomes increasingly crucial to expand our knowledge and conduct further research in the realms of nutrition and food science. Nutri 2023 presents an exceptional opportunity to enhance our understanding, generate fresh ideas, and contribute to the advancement and evolution of cooperative academic research. The collaboration between researchers and nutrition experts has the potential to yield ideas that were previously inconceivable. Nutri 2023 will serve as an outstanding venue for knowledge exchange and the establishment of new collaborations in the field of Nutrition research. As the world becomes increasingly interconnected, research knows no borders. This conference provides a glimpse into the future of nutrition science, allowing researchers at all levels - from undergraduates to postdocs to Nobel Laureates - to share their expertise, exchange medical information, and expand their professional networks.

The scientific program will focus on the latest international advancements in nutrition science, with a particular emphasis on multidisciplinary research spanning both basic and applied domains. This conference offers an excellent networking opportunity, fostering lifelong friendships among fellow participants and partners. We anticipate that Nutri 2023 will provide an exceptional conference experience, where you will return with rejuvenated scientific ideas and connections with international colleagues. We look forward welcoming you to Nutri 2023.

19-20 **JUNE**

DAY 01

KEYNOTE FORUM

4TH EDITION OF
**INTERNATIONAL
NUTRITION RESEARCH
CONFERENCE**

Medicinal plants with special reference to flavanoids and their role in nutrition and obesity prevention

The plant kingdom offers a rich source of structural biodiversity in the form of a variety of Natural Products. As we know natural products continue to play an important role, especially in & the food and pharmaceutical industries. Besides medicament, plants have always been a common source of food and nutrition either as such or as dietary supplements. The unique nutrient richness of every whole, natural food can be showcased in a variety of ways. But there is no better way to highlight the unique nutrient richness of foods than to focus on their flavonoid content. Flavonoid, one of the largest nutrient families known to scientists, covers a large group of naturally occurring, low molecular phenolic compounds found practically in all parts of the plant, include over 6,000 already-identified family members. A large number of novel flavonoids and biflavonoids have been isolated from medicinal plants. Some of the best-known flavonoids include quercetin, kaempferol, catechins, and anthocyanidins. Obesity is the most prevalent nutritional disease and a growing public health problem worldwide. In this talk the anti-obesity potential of diverse plants such as: *Aloe vera*, *Camellia sinensis*, *Hibiscus sabdariffa*, *Hypericum perforatum*, *Phaseolus vulgaris*, *Capsicum annum*, *Rosmarinus officinalis*, *Citrus limon*, *Punica granatum* and some other common plants will be discussed. Researchers consider the potential of these plants as natural alternative treatments of some metabolic alterations associated with obesity. Market dietary supplements for obesity frequently contain undeclared /hidden active ingredients that could be harmful to public health; the laboratory experience on this intensional adulteration will be dealt in detail.

Audience Take Away Notes

- Most of the anti-obesity drugs that were approved and marketed have now been withdrawn due to serious adverse effects
- Because of the high cost of medications used in obesity treatment and possible side effects, the use of alternative forms from natural products is considered as a promising tool in the management and treatment of obesity.
- Surely, this should be included as a subject.
- Traditional medicinal plants and their active phytoconstituents have been used for the treatment of obesity and their associated secondary complications.
- There is no better way to highlight the unique nutrient richness of foods than to focus on their flavonoid content. Flavonoid, one of the largest nutrient families known to scientists, covers a large group of naturally occurring, low molecular weight phenolic compounds found practically in all parts of the plant.
- Besides medicament, plants have always been a common source of food and nutrition either as such or as dietary supplements. The unique nutrient richness of every whole, natural food can be showcased in a variety of ways.



Mohammad Kamil

Director General, Lotus Holistic Health Institute, Abu Dhabi, United Arab Emirates

Biography

M.Sc.; M.Phil. Ph.D., D.Sc, C.Chem. Chartered Chemist (London); Fellow of Royal Society of Chemistry (London). Worked in various capacities, as In-charge -Drug Lab. (CCRUM), MOH India, Professor at Hamdard University, India; Head Department of Pharmacognostic Science, and Head TCAM Research (ZCHRTM) from 1996-2020. Presently working as Director General, Lotus Holistic Institute, Abu Dhabi, UAE. Recipient of many awards viz Young Scientist's Award, India; Common Wealth Award-London; Convention Award of Chemical Society-India; Academic Exchange Fellowship from Association of Common Wealth Universities -London; Global Award on Unani Medicine, India; Sheikh Zayed International Award in Herbal Research (2020). More than 580 research papers in reputed journals & presentations at international conferences are at his credit.

Food technology innovations for ensuring nutrition and health security

Several countries of the world including India are currently combating the crisis of malnutrition. Despite substantial improvements in health and well-being, iron deficiency anemia (IDA), protein deficiency, and lifestyle-related non-communicable diseases (NCD) like diabetes are in alarming stages. Fortification of staples with micronutrients like iron, vitamin B₁₂, folic acid as well as balancing energy and amino acids are panacea for the malnutrition. Effective implementation of food fortification coupled with the use of innovative food processing and packaging technologies are key to providing nutrition and health security to masses. Extrusion is the most versatile, reliable and sustainable technology for a successful and cost-effective thriving food fortification programme. Extrusion technology has been used to produce ready to cook RTC fortified rice kernels (FRK), fortified rice noodles (FRN), low glycemic rice (LGR), and essential amino acid balanced Nutri dal / pulse (NHD). The broken rice and mixture of broken pulses, millets and pseudo cereals are respectively grinded into flour, mixed with desired amounts of micronutrient fortificants and conditioned. The conditioned rice/legumes/millet flours are then fed into a twin-screw extruder, specially designed and fabricated for the purpose to produce the speciality products with enhanced micronutrients which are then dried, polished, and packaged. Details of the product formulations, manufacturing technologies and health benefits shall be discussed.



H N Mishra

Food Chemistry & Technology Laboratory, Agricultural & Food Engineering Department, Indian Institute of Technology Kharagpur, West Bengal -721 302, India

Biography

Professor H N Mishra has more than 36 years of professional experience of teaching and research in food processing. A Professor of Food Technology in the Agricultural & Food Engineering Department, Dr. Mishra is currently the Professor I/c, Nodal officer & Director of the Agri

Business Incubation Foundation IIT Kharagpur. Prof Mishra is on the Board of Trustee of the ILSI-India, New Delhi. He is a former Head and Chairman of the Post-Harvest Technology Centre, IIT Kharagpur and Former President of the Association of Food Scientists & Technologists (India). Professor Mishra has published 620 research papers including 258 in peer reviewed international journals & 362 in conference proceedings. He has written 4 books, 4 e-books, 35 book chapters, 7 lecture compendium & laboratory manuals, 4 technology manuals, and several popular articles in newspapers and magazines and has 14 Indian patents to his credit. Besides, he is on the editorial boards of several reputed journals. He has supervised more than 282 student research projects including 12 PDF and 50 Ph D research scholars including 2 PMRF and 7 GYTI Awardees. Professor Mishra has handled several international and national sponsored research & industrial consultancy projects. Dr Mishra has received several awards & honours such as AIFPA President's Award, GYTI Award, NRDC Award, Best Teacher Award, Dr JS Pruthi Award, etc for his outstanding contribution in the field of food processing.

The determination of irradiation on total biophenol quantity during storage of natural black table olives

In this study, the effects on the shelf life and quality of the methods used in the production and preservation of the Gemlik variety natural black table olives produced with low salt (2%) using different methods were determined. As a result of the study, it was ensured that table black olives were produced with less salt (2%) and that natural black olives with less salt could be stored on the shelves for at least 6 months without using any preservatives. The gamma irradiation method (1, 3 and 5 kGy) was applied for the first time in the preservation of table olives and its effect on quality was relatively similar to other applications. The reducing effect of 5 kGy dose on total phenolic substance was found to be higher than other doses.

Audience Take Away Notes

- All the table olive sector will be able to use that they learn. Table olives are a food that should be well preserved. It is especially important for consumers who want to consume natural products. Salt and acidity are important parameters in the preservation of table olives. In addition, when low salt content is used, it must be pasteurized. If it is to be consumed without pasteurization, preservatives must be used. For this reason, storage conditions must be improved in order to be presented to the consumer without the use of preservatives. Irradiation can also be one of these preservation conditions.
- Viewers will have information about irradiated foods. Manufacturers will learn that they can create alternatives with such a food preservation process in the future.
- Yes, this research is research that other faculty members can use to expand their research or teaching. This research shows that applications made with low amount of radiation can be easily used in food preservation.
- This can provide a practical solution that can simplify a designer's job or make it more efficient. It can create an opening especially in the preservation of foods.
- It can improve the accuracy of a design or provide new information to help with a design problem. In this research, this is the first time it has been tried in terms of table olives.



Sahnur Irmak

Olive Research Institute,
Department of Food Technology,
Bornova, Izmir, Turkiye

Biography

Sahnur IRMAK has a PhD degree in Food Chemistry Science. Since 2000 he works as Researcher in the Department of Food Technology, Olive Research Institute (ORI), Izmir, TURKIYE. He is an accredited by COI International olive oil taster since 2015. He is a member of the jury in national and international olive oil and table olive tasting competitions. He is an expert on organoleptic assessment, nutritional characteristics, table olive and olive oil processing technology. He is the panelist of Olive Research Institute which IOC recognized tasting panel of olive oil. Nowadays, also, he starts to study PRIMA PROJECT 2022 about "Microbial resources for a sustainable olive oil system and a healthier Mediterranean food: From by-products to functional food".

Urate restores APP translational expression and losses of neural cell viability from Mn exposure

The metabolism of the metal Manganese (Mn) is known to be tightly linked to perturbations of iron homeostasis in people while excess Mn can cause clinical occupational Manganism, a movement disorder distantly related to Parkinson's Disease (PD). Our meta-analysis was consistent with knowledge that environmental Mn over-exposure is a global problem in neurocognitive development and can damage childhood IQ in affected areas (Liu et al, 2020. Environ Health. 2020 Oct 2; 19(1):104). To investigate its mechanisms, we had shown Mn exposures to neural cell lines caused an embargo of iron export and storage as mediated by inhibition of IRE/IRP dependent translation of both H-ferritin (Fe storage) and that of the amyloid precursor protein (APP) (Venkataramani et al, 2018., J Neurochemistry;147(6):831-848). APP interacts with Ferroportin (FPN) and appears to cytoprotectively accelerate iron efflux via the APP/ FPN axis. Here, we report that urate co-treatment offers a 15 -30 % efficacy to rescue SH-SY5Y cells from toxic exposures of Mn while our western blot data showed Urate increased intracellular levels of neuroprotective APP. Ferritin is a known multi subunit shell that prevents ferroptosis during MPTP induced Parkinsonism. By contrast to APP, we found urate did not restore Mn inhibition of ferritin expression in model SH-SY5Y cells. These data are consistent with a model whereby urate selectively induces APP translation correlated with its facilitation of the iron exporter FPN, an event that would increase viability when cells challenged by excess Mn. Urate's observable therapeutic action to prevent Mn induced ferroptosis in neurons by inducing APP translation certainly complements its known capacity to activate NRF2 mediated protection of cells from oxidative stress. These findings should encourage critical tests concerning how best to formulate urate to enhance its capacity to activate APP translation, and the APP/FPN interaction, in vivo as an event to prevent excess toxic iron overload and oxidative stresses in people exposed to neural Mn overload.



Jack T. Rogers

Harvard University, United States

Biography

Jack Rogers, PhD. is an authority on the role that RNA plays in the maintenance of iron homeostasis related to disease processes in neurodegeneration, including Parkinsonians. He is the Director of the Neurochemistry Laboratory in the Psychiatry/ Neuroscience Department at Massachusetts General Hospital. Jack is an Associate Professor at the Harvard Medical School, with a funded track-record in top scientific journals (Cell, J. Biol. Chem. and PNAS). His peer-reviewed publications won him a Zenith award from the Alzheimer's Association and awards from the Michael J Fox Foundation, each on translational control by iron and related disease progression. He contributes to treat Mn toxicity and PD by pharmacological modulation of iron homeostasis towards neural survival.

19-20 JUNE

DAY 01

SPEAKERS

4TH EDITION OF
**INTERNATIONAL
NUTRITION RESEARCH
CONFERENCE**

**Faik Gokalp**

Faculty of Health Sciences, Department of Nutrition and Dietetics, Iğdır University Turkey

A study on the comparison of the efficacy of major compounds found in natural medicinal plants effective for SARS-COV-2 with reference drugs

The drug studies related to SARS-CoV-2 have recently been a major epidemic and humanity's efforts to find a cure have gained a great momentum. Experimental and clinical studies, studies showing that Molnupiravir is effective on this virus show that this compound can be used as a reference drug. The aim of this study is to identify natural compounds that are more effective on SARS-CoV-2 than the reference drug Molnupiravir. The interaction of the reference drug and natural active molecules with the SARS-CoV-2 receptors was determined by chemical calculation methods, and the effect points on the receptors and the effects of the main active substances in medicinal plants on the receptors on this virus were determined in the same way. What kind of intermolecular bonds are formed in this interaction and from which points they interact are investigated with this method. This study is very important in terms of giving direction to experimental studies and preventing time and material loss. By comparing the main active natural substances in selected medicinal plants with Molnupiravir, it was tried to determine how the effect on the interaction and inhibition of SARS-CoV-2 with its receptors was.

Keywords: Allicin, Capsaicin, Carvacrol, Thymol, Molnupiravir, Piperine, SARS-CoV-2

Audience Take Away Notes

- Listeners can discover compounds with similar properties to the active ingredients here.
- This study guides experimental and clinical studies.
- This research will assist in areas related to drug discovery in this field.
- This provides a practical solution that a drug explorer can simplify or make more efficient.
- This study will provide new information that will improve the accuracy of drug discovery and assist in new drug design.

Biography

Faik Gokalp has studied Biochemistry at Kirikkale and Iğdir University, Turkiye. He received his PhD degree in 2013 at Eskisehir Osmangazi University. He has published numerous research articles in SCI (E) journals on the active compounds of medicinal plants and their importance for health.



Dian Handayani

Department of Nutrition, Faculty of Health Sciences, Universitas Brawijaya,
Malang, East Java, Indonesia

Functional food for combating metabolic syndrome, how is it work

The prevalence of obesity in the world continues to increase which further cause's clinical problems related to Metabolic Syndrome (MetS), which include abdominal obesity, high blood pressure, impaired Fasting Blood Glucose (FBG), and hyperlipidemia. Currently, many studies are showing that functional foods may have a role in MetS. This paper aims to discuss the various benefits of functional food in combating MetS. Functional food contains various bioactive compounds that have health benefits. Dietary fiber, including β -glucan, is known to affect satiety response, food intake, and body weight. β -glucan as a soluble fiber can increase luminal viscosity, delay gastric emptying, and reduce absorption in the gut. β -glucan can also reduce glycaemic and insulinemic effects. The consumed β -glucan will be fermented in the cecum and colon to produce SCFAs which plays a role in improving gut microbiota profile and helping regulate hunger and satiety. Various studies have focused on the benefits of β -glucan content in various foods, such as oats, shiitake mushrooms, oyster mushrooms, and brown rice, for preventing or treating MetS. An in vivo study on mice related to the prevention of obesity in 2012, showed that oats and shiitake mushroom-enriched diets can lower plasma lipids through the mechanism of fecal fat exclusion, which includes their beneficial effect in lowering weight. The fecal fat exclusion affected the inhibition of fat absorption in the gut and thus decreases plasma triacylglycerol as the main plasma lipid. β -glucan can also delay gastric emptying so that the absorption of carbohydrates occurs gradually and improves lipid profiles which will support lowering FBG. An in vivo study on mice in 2020 showed that the intervention of β -glucan extract from oyster mushrooms (375 mg/kg BW) had the greatest effect on reducing energy intake and preventing weight gain, as well as lowering plasma insulin levels. Another functional food is brown rice which contains β -glucan up to 4.90% and magnesium. The study conducted in 2019 showed that there was a decrease in abdominal circumference, white adipose tissue, and body fat index in the rat group with brown rice intervention. Higher dietary intake of brown rice is also associated with improved gut microbiota dysbiotic and increased serum magnesium levels. Magnesium is a key element in many metabolic pathways such as glycolysis reactions, crevice cycle, fat oxidation, cyclic AMP formation, and phosphocreatine formation as a cofactor of ATP production. The benefits of brown rice have also been tested on humans. A research conducted in 2022, showed that the brown rice-based diet significantly decreased BMI, abdominal circumference, visceral fat, FBG, and HbA1c of type 2 diabetes mellitus subjects. Other bioactive compounds are antioxidants, such as flavonoids, and leucine amino acids which are contained in Moringa plants. The results showed that giving Moringa oleifera powder (500 mg/kg BW) reduced FBG levels in rats on a high-fructose diet. It can be concluded that functional foods can be used for the prevention and treatment of MetS. Bioactive compounds such as β -glucan, magnesium, flavonoid, and leucine have an important role in improving lipid profiles, FBG, and body weight as a step to combat MetS.

Audience Take Away Notes

- Audiences will understand the benefits of functional foods in preventing or treating metabolic syndrome (MetS). The audience will furthermore know some of the bioactive compounds contained in functional

foods that play a role in improving lipid profiles, blood glucose, and weight loss as a step to combat metabolic syndrome. We hope that this information can be understood so that it can be developed or applied in everyday life.

- This research topic can be utilized by other departments or faculties to expand their research or teaching.
- It can improve the accuracy or provide new information about functional food in combating Mets. This topic provides a practical solution to a MetS problem, especially in developing functional food products for preventing or treating MetS.

Biography

Professor Dian Handayani, S.KM., M.Kes., Ph.D. completed her Bachelor of Nutrition in 1998, Master program in Bio-medical Sciences at Universitas Brawijaya in 2002, and Doctoral Program at the University of Wollongong, Australia, in 2013. She works as a lecturer at the Department of Nutrition, Faculty of Medicine, Universitas Brawijaya from 1998-2021 and is currently serving as Dean of the Faculty of Health Sciences, Universitas Brawijaya. She is active in conducting research related to diet management through functional food for metabolic syndrome.



Teresa Gervasi^{1*}, Giuseppina Mandalari²

¹Department of Biomedical and Dental Science and Morphofunctional Imaging, University of Messina, 98168 Messina, Italy

²Department of Chemical, Biological, Pharmaceutical and Environmental Science, University of Messina, 98166 Messina, Italy

Antimicrobial strategies for microbial stability and food safety in industrial applications

The use and misuse of antibiotics has been associated to an increase and spread of resistant microorganisms. To date, fighting antimicrobial resistance has become a global public health and economic challenge not only in the medical and veterinary fields but also in the food industry, given that it compromises the quality and safety of the food supply chain. This study shows a double approach focused on the evaluation of alternatives to conventional antimicrobial strategies also usable in the food industry to promote microbial stability and safety in foods. On one hand studies concerning the identification of novel compounds, mostly of natural origin, are reported. The oil obtained from natural pistachios showed an inhibitory effect against *Listeria monocytogenes* (MIC values between 0.25 and 2.0 mg/mL), one of the most serious pathogens causing foodborne disease. Essential oil from *Origanum vulgare* (MIC values between 0.31 and 5 µL/mL) *Cladanthus arabicus* (MIC values between 200 and 800 µg/mL), *Bubonium imbricatum* (MIC values between 400 and 1600 µg/mL) and *Mentha* species (MIC value between 0.625 and 2.5 µg/mL) and extracts from *Rhus coriaria* L. (MIC value between 4.68 and 9.37 µg/mL), both alone and in combination with conventional antibiotics, were active against multidrug-resistant *Enterobacteriaceae* microorganisms, isolated from poultry. On the other hand, the effectiveness of selected probiotic bacteria as positive tools for the control of pathogenic microorganisms is shown. Following the engineering of *Lact. Johnsonii* FI9785 for the expression and delivery of a novel endolysin, we demonstrated that the production of the bacteriophage endolysin by the commensal bacteria, under conditions designed to simulate the gastrointestinal tract, improved the probiotic potential as a biocontrol tool. This study, investigating the mechanism of competitive exclusion, assessed the efficacy of the endolysin as a novel antimicrobial for the biocontrol of *Cl. perfringens* in the gut environment.

Audience Take Away Notes

- A broad and comprehensive education on the problem of antibiotic resistance is a cornerstone of the WHO Global Action Plan on Antibacterial Resistance, as it is present in most national action plans.
- The abuse and misuse of antibiotics is a global problem that has implications not only for the economy but also for health. Therefore, the knowledge of novel strategies and innovative applications focused on decreasing the use of antibiotics in the food sector is also an important goal.
- This research can be used when the problem of antibiotic resistance is being addressed not by trying to find new and more effective molecules, but by reducing the use of antibiotics through the widespread use of natural compounds in both the human health and livestock settings.
- In addition, another important positive element could be the use of these natural substances in packaging to counter antibiotic-resistant microorganisms of food interest.

Biography

Dr. Teresa Gervasi is Assistant Professor of “Fermentations Chemistry” of the University of Messina. She studied at the University of Messina, Italy and graduated cum laude in Biology. Being a PhD student in “Chemistry and Food Safety”, she joined the research group of Prof. Arjan Narbad at the Institute of Food Research (Norwich, UK). In April 2013 she obtained the title of “Doctor Europaeus”. Since 2014 she has been “Cultore della materia” for “Fermentation chemistry” teaching at the University of Messina and she has been awarded several scholarships. Dr. Teresa Gervasi has authored several publications in various journals and books.



Delphine Payros^{1*}, Marion Garofalo¹, Imourana Alassane-kpembé², Philippe Pinton¹, Isabelle P. Oswald¹

¹INRAE, Toxalim, Research Center in Food Toxicology, Toulouse, France

²Department of Veterinary Biomedicine, University of Montreal, Saint-Hyacinthe, Quebec, Canada

The mycotoxins, a part of the dietary exposome: A challenge for studying the toxicity of mixtures

Throughout our lives, humans are exposed to a wide range of food contaminants, bacterial toxins and neoformed products from our diet: this is the concept of the dietary exposome. Among natural food contaminants, mycotoxins being the most frequently occurring natural ones. Mainly produced by *Aspergillus*, *Penicillium* and *Fusarium*, mycotoxins are secondary fungal metabolites responsible for toxic effects on animal and human health. Mycotoxins co-contamination is confirmed by the co-occurrence of these toxins in food and by co-exposure monitoring survey. The co-occurrence of mycotoxins in food is explained by three different reasons: (i) Most fungi are able to simultaneously produce several mycotoxins, (ii) Commodities can be contaminated by several fungi simultaneously or in quick succession, and (iii) The complete diet comprised different commodities. In practice, the co-occurrence of mycotoxins represents the rule and not the exception.

Unfortunately, the data on the combined toxic effects of mycotoxins are limited and therefore, the health risk from exposure to a combination of mycotoxins is incomplete. Most of the studies concerning the toxicological effect of contaminant have been carried out taking into account only one compound. A synergistic effect between mycotoxins was described both for intestinal cytotoxicity and inflammatory response. Besides mycotoxins, other contaminant can be found in our diet such as heavy metals, bacterial toxins, pesticides or neoformed products ... Thus, the combined exposure to the mycotoxin and other food contaminant was also investigated. For example, the co-exposure of deoxynivalenol and Cadmium in several human cell lines demonstrated that the interactions were specific to the target organ investigated. Moreover, the interaction between deoxynivalenol and genotoxins, present either as food contaminant or as toxins from our microbiota, was also investigated. Although not carcinogenic, DON exacerbates DNA damage induced by genotoxins such as bacterial toxins, pesticides or reference genotoxic compounds, suggesting a role in colorectal cancer.

Altogether, these data demonstrated that (i) Mycotoxin cocktails can lead to synergistic interaction and that (ii) Mycotoxins interact with other food contaminants or with the intestinal microbiota. Thus, contaminations should be taken in the global context of the dietary exposome.

Audience Take Away Notes

- Take into account the importance of mixtures and not the action of a single compound.
- Take into account the importance of the target organ.
- Take into account the importance of the studied effect.
- Take into account the importance of the animal and human exposure to a contaminant and to the work dose choose to realize their experiment.
- Conceive its experimental design upstream to include all the controls necessary for the exploitation and interpretation of the results.

Biography

Delphine Payros PhD, working in the national institute for agricultural and environmental research in the food toxicology unit in Toulouse, France on the cocktail effect of mycotoxins and dietary food compounds. Delphine Payros worked on in vitro and in vivo experimental models to evaluate the effect of co-exposure between mycotoxins and dietary food compound on physiology, genotoxicity and immune response. She obtained in 2022 a grant from the French Olga Triballat institute to conduct her research.

Field of expertise:

Study of the effects of co-exposure of food contaminants mainly the deoxynivalenol and bacterial toxins on gastro-intestinal physiopathology, genotoxicity and immune response.



Ajibade Betty Olusola^{1*}, Ajayeoba Titilayo Adenike¹, Sabiu Saheed¹, Konstantin V. Moiseenko², Tatyana V. Fedorova², and Ijabadeniyi Oluwatosin Ademola¹

¹Biotechnology and Food Technology, Faculty of Applied Sciences, Durban University of Technology, Durban 4001, KwaZulu-Natal Province, South Africa

²A.N. Bach Institute of Biochemistry, Research Center of Biotechnology, Russian Academy of Sciences, 119071 Moscow, Russia

Metabolomics of amasi traditionally produced from cow and goat milk as revealed by GCMS and LCMS; The impact of storage time, lactic acid bacteria, and health benefits

Amasi, traditional fermented milk produced in Southern Africa, is associated with several health benefits, such as probiotic activities, immune system modulation, as well as antimicrobial, antitumor and antioxidant activity. These benefits are closely related to the produced metabolites during fermentation. This study presented the metabolites profile of raw Amasi Cow Milk (ACM) and raw Amasi Goat Milk (AGM) using the versatile Liquid Chromatography-Mass Spectrometry (LC-MS) and the smooth Gas Chromatography-Mass Spectrometry (GC-MS) spectrophotometric methods for complete profiling of the metabolites. Samples were drawn from both raw cow and goat milk and the fermented milk at 0h, 7h, 48h, and 96h and the metabolites were categorized based on their pathways. Data obtained were classified into compound groups such as acids, alcohols, cyclic compounds, esters, ketones, phytosterols, vitamins and many others, and their characteristics such as the retention time observed mass, molecular formula and mean peak areas were reported. The results showed a significant increase ($p \leq 0.05$) in the metabolites produced by ACM compared to AGM in terms of the mass observed, the same trend was noticed in the Raw Cow Milk (RCM) compared to Raw Goat Milk (RGM). The immune and drug pathways were significantly increased for both ACM and AGM and generally, RCM has more metabolites compared to RGM in terms of observed mass. Metabolite increase was noticed as the time of fermentation increased for both ACM and AGM. These data represent the collection of metabolites in ACM and AGM and may be useful for the identification and utilization of functional compounds, molecular docking, and invitro studies in foods-related drug discovery analysis.

Keywords: Metabolites, GCMS, LCMS, Amasi, Cow milk, Goat milk.

Biography

BETTY AJIBADE is a doctoral candidate in the Department of Biotechnology and Food Technology, Durban University of Technology, Durban, Kwa-Zulu Natal, South Africa. I am working on traditional fermented milk products. I specialize in food microbiology, food safety, fermentation, bioinformatics, and pharmaceutical bioinformatics. I am looking forward to presenting my work at the NUTRI2023.



Weihao Meng^{1, 2*}, Hongnan Sun¹, Taihua Mu¹, Marco Garcia Vaquero²

¹Laboratory of Food Chemistry and Nutrition Science, Institute of Food Science and Technology, Chinese Academy of Agricultural Sciences, Key Laboratory of Agro-Products Processing, Ministry of Agriculture and Rural Affairs, No.2Yuan Ming Yuan West Road, Haidian District, P.O. Box 5109, Beijing 100193, PR China

²School of Agriculture and Food Science, University College Dublin, Belfield, Dublin 4, Ireland

Effects of environmental stimuli on the physicochemical and rheological properties of chitosan-macroalgal polyphenol stabilized pickering emulsion

In this study, Pickering emulsions stabilized by chitosan (CS), chitosan-*Laminaria japonica* polyphenols (CP) and chitosan-*Ascophyllum nodosum* polyphenols (CB) were fabricated. This study also evaluated the stability of CS, CP, and CB under different environmental factors including pH (2–9), NaCl concentrations (0–500 mM), heat treatments (50–100 °C) and storage period (0–8 weeks). The characterization on interfacial layer of emulsion droplets demonstrated that macroalgal polyphenols could combined with the amorphous regions of chitosan particles through hydrogen bond and electrostatic interactions, providing stronger dual wettability with enhanced ability of interfacial layer in stabilizing Pickering emulsions. All three emulsions showed best droplet distribution, highest emulsion stability and specific surface area at pH 6 and 0 mM NaCl concentration as fresh emulsion. Moreover, CS, CP, and CB exhibited the rheological behaviour of pseudoplastic fluids at different pH and NaCl concentration. It should be noted that CP and CB exhibited higher emulsion stability than CS under a variety of environmental stresses. Overall, this research proved that chitosan-macroalgal polyphenol co-stabilized Pickering emulsion had enhanced stability against various environmental stimuli, which could be utilized as potential delivery and protection system for hydrophobic bioactive compounds.

Audience Take Away Notes

- Interpretation of stability mechanism of Pickering emulsion from microcosmic.
- Development of fat-soluble biological ingredient delivery systems.
- Novel Pickering emulsions are shear-thinning non-Newtonian fluids.

Biography

Weihao Meng is studying Food Science at the University College Dublin and Chinese Academy of Agriculture Science with Dr. Marco Garcia-Vaquero, Prof. Taihua Mu, and Prof. Hongnan Sun. He received MS degree in 2020 from University College Dublin. He is working on nutraceuticals and functional foods by using nature compounds. He has published 7 articles in SCI journals during last 2 years.



Jessica Silva¹, Tiago Azevedo¹, Abigael Valada¹, Lara Anjos¹, Ana I. Faustino-Rocha^{1, 2, 3*}, Paula A. Oliveira^{1, 2}, Jose A. Duarte^{4, 5}

¹CITAB, Inov4Agro, Vila Real, Portugal

²Department of Veterinary Sciences, University of Trás-os-Montes and Alto Douro (UTAD), Vila Real, Portugal

³Department of Zootechnics, School of Sciences and Technology, CHRC, University of Évora, Évora, Portugal

⁴CIAFEL, ITR Laboratory, Faculty of Sport, University of Porto, Porto, Portugal

⁵TOXRUN-Toxicology Research Unit, CESPU, Gandra, Portugal

Feeding efficiency of western and standard diets in wistar rats exercised with resistance training

The Western diet (WD), which is known by high daily intake of processed carbohydrates, saturated fats, and salt has been associated with the development of several diseases including cancer, atherosclerosis, dementia and metabolic disorders. Excessive food consumption and sedentary lifestyle are the primary contributors for obesity. Along with nutritional counseling, exercise training is crucial in the management of overweight and obesity. To evaluate the feeding efficiency of the western and standard diets in Wistar rats exercised (EX) with resistance training, twenty-eight female rats were divided into four groups (n=7): WD; WD+EX; Standard diet (SD); and SD+EX. Animals were supplied with water and food *ad libitum*. WD groups received a WD with 60% of total calories coming from fat, while groups SD received a standard maintenance laboratory diet. Body weight and food consumption were recorded every week, for 20 weeks. Exercised animals climbed a 1-meter-high homemade ladder, 8-12 dynamic movements/climb and 4-8 climbs/session, 3 days/week for 18 weeks. At the end of the experiment, the naso-anal length and the adipose tissue weight were measured. The amount of food consumed during the experiment, kcal ingested, Lee index, and body mass index, specific rate of body mass gain, feed efficiency and the weight gain coefficient by caloric consumption were determined at this point. This experimental work was approved by the institutional and national ethical committees. A gradual increase in the animal's body weight was observed throughout the study, which is associated with the animal's normal growth. Body weight, as well as body mass index, specific rate of body mass gain, weight gain coefficient by caloric consumption, Lee index, adipose tissue weight and naso-anal length were not significantly different among groups ($p > 0.05$). The amount of food eaten during all the experiment and Kcal ingested were higher in animals fed with a SD when compared with those fed with a WD ($p < 0.05$). Inversely, the feed efficiency was higher in animals fed with a WD when compared with those fed with a SD ($p < 0.05$). No differences were observed between sedentary and exercised animals ($p > 0.05$). The results suggested that the WD is probably associated with greater satiety, which is reflected in the consumption of smaller amounts of this type of food. The WD was also associated with a better feed efficiency. The resistance training did not influence any of the parameters evaluated.

Biography

Ana Faustino is Professor at Department of Zootechnics of University of Évora and Researcher at CITAB/UTAD. She holds a Master in Veterinary Medicine and a European PhD in Veterinary Sciences. Animal models of cancer, tumoral angiogenesis and imaging are her main areas of interest. She has collaborating in several Financed Research projects. The results of her works were published in more than 250 publications in several formats. She received several prizes of scientific merit, and highlights and press honors. She has experience in supervising graduate and post-graduate students. She participated in several courses, workshops, international and national meetings. She is editorial member of several scientific journals and reviewer of more than 300 manuscripts. She is Guest Editor of two special issues in *Veterinary Animals* and in *Life*.



**Augustine I. Airaodion^{1*}, Chika L. Uche², Olufunmi A. I. Otuka³,
Isaiah O. Abali³, Uchechukwu P. Okite⁴, Kelechi Chikezie⁵, Peace
Jibiro⁵ and Ann A. Ogbenna⁶**

¹Department of Biochemistry, Federal University of Technology, Owerri, Imo State, Nigeria

²Department of Haematology, Abia State University, Uturu, Nigeria

³Department of Surgery, Abia State University, Uturu, Nigeria

⁴Department of Haematology and Blood Transfusion, University of Port Harcourt, Nigeria

⁵Department of Haematology, Federal Medical Centre, Umuahia, Abia State, Nigeria.

⁶Department of Haematology and Blood Transfusion, University of Lagos/ University Teaching Hospital, Nigeria

Common African foods mitigated derangement in haematological and coagulation parameters induced by potassium bromate in animal model

Background: This study examined the ameliorative effects of extracts from two common African foods, *Parkia biglobosa* (*P. biglobosa*) seed and *Corchorus olitorius* (*C. olitorius*) leaves, on haematological and coagulation parameters in rats treated with potassium bromate (KBrO₃). KBrO₃ is widely known for its deleterious impact on blood parameters. This experimental study sought to investigate the potential protective impacts of *P. biglobosa* and *C. olitorius* extracts against these harmful effects.

Methodology: The plant materials were collected and extracted with soxhlet extractor using 95% ethanol as the solvent. Forty-eight adult Wistar rats were acclimatized under laboratory conditions and were randomly grouped into eight groups of six rats each. Animals in group 1 were given distilled water only (normal control). Animals in groups 2 to 8 were daily administered 100 mg/kg body weight of KBrO₃. Those in group 2 were not treated further. Animals in groups 3 and 4 were treated with 100 and 200 mg/kg body weight of *P. biglobosa* respectively. Those in groups 5 and 6 were treated with 100 and 200 mg/kg body weight of *C. olitorius* respectively. Those in groups 7 and 8 were treated with 50 mg/kg of *P. biglobosa* + 50 mg/kg of *C. olitorius* and 100 mg/kg of *P. biglobosa* + 100 mg/kg body weight of *C. olitorius* respectively. All extracts were freshly prepared on daily basis and administered to rats by oral gavage for 28 days. At the end of the treatment period, blood samples were collected through cardiac puncture. Haematological and coagulation parameters were determined using standard methods and data were analysed using Graph Pad Prism.

Results: Our findings showed that haemoglobin, red blood cells, white blood cells and prothrombin time were perturbed from 17.26±2.84 g/dL, 5.12±0.83 x10¹²/L, 9.12±1.05 x10⁹/L and 11.67±2.15 sec respectively in normal control animals to 13.25±1.25 g/dL, 3.47±0.22 x10¹²/L, 7.03±1.37 x10⁹/L and 19.53±2.83 sec in KBrO₃-treated animals. Both extracts of *P. biglobosa* seed and *C. olitorius* leaves treatments significantly improved red blood cell parameters (including Haemoglobin, Packed Cell Volume, and Red Blood Cell count) and white blood cell parameters (including White Blood Cell count, neutrophils, lymphocytes, and monocytes). Furthermore, these extracts displayed a beneficial effect on coagulation factors, notably normalizing Prothrombin Time, Activated Partial Thromboplastin Time, and Thrombin Time, while enhancing Fibrinogen and Vitamin K levels. The combination of both extracts exhibited a synergistic effect, with more significant improvements noted at higher doses.

Conclusion: These results suggest that these commonly consumed African foods may possess protective properties against KBrO₃-induced haematological disruption and coagulation defects in this animal model. Further research is needed to extrapolate these findings to humans and to elucidate the underlying mechanisms involved in these protective effects.

Audience Take Away Notes

- The toxicity of Potassium Bromate, a common food additive.
- Health benefits of common African foods.
- Therapeutic effects of African foods.
- Research design using animal model.

Biography

Augustine Ikhueoya Airaodion obtained a B.Tech in Biochemistry from the Ladoke Akintola University of Technology, Ogbomoso, an M.Sc from the Federal University of Technology, Owerri, and a PhD from Lead City University, Ibadan all in Nigeria. He started his research career under Dr. Owoade. He has since grown to become an eminent researcher. He was named as one of the world scientists of the year, 2022 by AD Scientific Index. He has published more than 100 research articles in reputable International Journals.



Denise Franco-San Sebastian¹, Gabriela Gutierrez-Salmean^{1, 2*}

¹Health Sciences Research Center (CICSA), Faculty of Health Sciences, Anahuac Mexico University, Huixquilucan, State of Mexico, Mexico

²Rinon Specialty Center, Naucalpan, State of Mexico, Mexico

A proof of concept on the effects of traditional dietary patterns (Mediterranean vs. Milpa) on cardiometabolic markers in subjects with hypertriglyceridemic waist

The prevalence of overweight and obesity in the Mexican adult population is ~75. The increased adiposity particularly that located within the waistline is associated with low-grade inflammation which, in turn, detonates the development of cardiometabolic disorders, especially hypertriglyceridemia. Mediterranean diet has been stated as the reference therapeutic as it is associated with lower levels of inflammation and lower cardiovascular risk, however, the type of eating pattern is not always accessible in our population, so a diet with traditional Mexican foods (*Milpa Diet*) could provide a therapeutic measure in obesity and its cardiometabolic alterations, also mediating the underlying basis. To demonstrate the effectiveness of such diet, we conducted a clinical trial comparing the cardiometabolic profile in subjects presenting abdominal obesity and hypertriglyceridemia. They underwent dietary treatment with either Mediterranean or Milpa patterns for 3 months. Anthropometrics, bioelectrical parameters, and biochemical indicators were evaluated at the beginning and end of dietary treatment.

Results: Both traditional dietary patterns resulted in significant improvements in glycemic control, lipemia, cardiometabolic risk index (TG/HDL); body fat and visceral adipose area were significantly decreased whilst phase angle did not change; patients presented a decrease of 10 and 2% in both systolic and diastolic blood pressures, respectively. There was no difference between diet effectiveness.

Audience Take Away Notes

- We aim to enhance the inclusion of traditional foods within diet plans prescribed on the daily clinical setting.
- By favoring traditional diets, adherence increases (due to idiosyncrasy) thus therapeutic effect is improved.
- Hypertriglyceridemia is the most frequent dyslipidemia and, in the combination with abdominal obesity, cardiometabolic risk is significantly increased.

Biography

Bachelor of Nutrition and Food Science, Master of Health Sciences with a Specialty in Clinical Research and Doctor of Medicine Research. Dr. Gabriela Gutierrez-Salmean is a researcher and professor in pre and postgraduate courses at the Faculty of Health Sciences of the Universidad Anahuac Mexico and is the Academic Coordinator of the Doctorate in Nutrition Sciences at the same institution. She is a scientific consultant and collaborator of companies focused on the development of nutraceuticals such as Beliv LLC, NIN Institute, Globalis (GlobKey), Nestle and BiPharma and has been a speaker for Astra Zeneca and Bayer. She is the author of 64 scientific articles, 1 book, 20 book chapters; she is also reviewer for scientific journals (eg: Frontiers Nutrition, Molecules, Nutrition, Journal of Food Biochemistry, Pharmacological Research, Food and Function). She has a private clinical practice as Founder and Head of the Nutrition Service at the Kidney Specialties Center (CER) and the Atlanta Nephrology Group, specializing in patients living with chronic kidney disease with and without replacement therapy, as well as transplant protocols.



Ivana Sola*, Dino Davosir, Emilie Kokic, Jana Zekirovski

Department of Biology, Faculty of Science, University of Zagreb, Zagreb, Croatia

Hot- and cold-water stress impact on broccoli nutritional potential

Due to climate change, sudden and intense changes in weather conditions are becoming more frequent. Immobile organisms such as plants cannot “take refuge” from high or low temperatures but adapt their physiology to the new conditions to survive. The intensity and direction of these changes depend on both the temperature and the plant species. Since adaptations at the metabolic level are fast, changes in the ambient temperature can be detected on the level of biochemical responses by which plants react to the new conditions. Such changes are usually crucial yield-limiting factors for plants. Broccoli (*Brassica oleracea*) is rich in vitamins (C, K); β -carotene, a precursor of vitamin A; Dietary fibers; Polyphenols; Fatty acids; minerals and glucosinolates - phytochemicals that are predominantly represented in *Brassica* vegetables. These compounds contribute to the health benefits of broccoli, such as antioxidant, antiproliferative and antidiabetic properties and the protection of the cardiovascular system. Temperature and irradiation have been recognized as the most important factors for the production of consumer-orientated quality broccoli. Since broccoli is native to moderate climatic zones such as the Mediterranean region, high or low temperatures will cause perturbations in its phytochemical profile to survive. Such phytochemical perturbations might have consequences on the biological effects of a plant and its products. In scope of our work, we investigated the influence of hot- and cold-water stress on the metabolism of young broccoli (*Brassica oleracea* L. convar. *botrytis* (L.) Alef. var. *cymosa* Duch.) Plants with the aim to (i) define the susceptible and resistant parameters of this plant during low- and high-temperature water stress, (ii) determine the degree of metabolism change of broccoli due to these two types of stress, and (iii) determine the degree of change in the biological effects of broccoli extracts due to the types of stress.

Audience Take Away Notes

- They will get the exact data on the effect of different environmental parameters on (anti)nutritional properties of Chinese cabbage and broccoli plants.
- Maybe some of the listeners are working on the similar theme, so we could arrange collaboration and perhaps common further work.
- Yes, this research that other faculty could use to expand their research or teaching.
- Yes, we offer the data, which show that some of the climate change parameters improve certain phytochemical parameters of plants.
- Definitely, it improves the accuracy of a design, or provides new information to assist in a design problem.

Biography

Dr. Ivana Sola, Assoc. Prof. Works in Laboratory for Phytochemistry at the Department of Biology, Faculty of Science, University of Zagreb. Her main scientific interest is plant specialized metabolism plasticity under different environmental conditions. Currently she is a leader of one international and two national projects, collaborator on two scientific and one infrastructural national project. She is a coauthor of 28 scientific papers, 1 manual, and participated in 69 international congresses. She teaches Fundamentals of Phytochemistry, Plant Anatomy, Plant Bioactive Substances, Plants in Phytotherapy, Molecular Biology of Plants, and leads the Laboratory Professional Practice.



Renee J Dufault^{1,2*}, Raquel A Crider¹, Richard C. Deth³, Roseanne Schnoll^{1,4}, Steven G Gilbert^{1,5}, Walter J Lukiw⁶, Amanda L Hitt^{1,7}

¹Department of Research, Food Ingredient and Health Research Institute, Naalehu, HI, USA

²College of Graduate Health Studies, A.T. Still University, Kirksville, MO, US

³Department of Pharmaceutical Sciences, Nova Southeastern University, Fort Lauderdale, FL, USA

⁴Department of Health and Nutrition Sciences, Brooklyn College of CUNY, Brooklyn, NY, USA

⁵Department of Research, Institute of Neurotoxicology and Neurological Disorders, Seattle, WA, USA

⁶LSU Neuroscience Center, Louisiana State University Health Sciences Center, New Orleans, LA, USA

⁷Food Integrity Campaign, Government Accountability Project, District of Columbia, USA

The role dietary heavy metals play in the epigenetic inheritance of autism and attention deficit/hyperactivity disorder (ADHD)

In 2021, the US Congress found heavy metals problematic in the American baby food supply but took no action. Heavy metal residues are pervasive in the United States (US) food supply and allowed by the Code of Federal Regulations because of food ingredient manufacturing practices. Evidence suggests prenatal dietary exposures, especially inorganic mercury and lead may impact gene behavior across generations. A nutritional epigenetics model published in 2009 and updated in 2012, 2021 and 2023 is strongly supported by clinical trial data collected all over the world. The model explains how concurrent dietary heavy metal exposures and poor diet lead to changes in key gene behaviors that create conditions for the development of autism and Attention Deficit/Hyperactivity Disorder (ADHD). An analysis of the US Centers Disease Control data indicates autism rates are accelerating in the US. An analysis of the US Department of Education data indicates the number of children ages 6-21 in the US receiving special education services increased 10.4% between 2006-2021 even with stable student enrollment. The percentage of children receiving special education services nearly tripled for the autism category and quadrupled for the developmental delay category from 2006-2021. The transgenerational epigenetic inheritance of autism and ADHD appears to be occurring in the US as prenatal dietary heavy metal exposures continue unabated and children are born without the ability to metabolize and excrete these neurotoxic elements.

Audience Take Away Notes

- Audience will develop an awareness of the problem of heavy metal residues in the food supply and how these metals may impact gene behavior leading to the development of autism or ADHD across generations.
- Audience may be inspired to learn how to avoid dietary heavy metal exposures.
- Conference participants will become aware of available nutritional epigenetics curriculum.
- Researchers may see the value of using nutritional epigenetics education as an intervention tool when designing clinical trials to determine how processed food consumption leads to the development of different disease conditions.

Biography

Dufault completed her PhD at A.T. Still University. She retired early from her position as a US Public Health Service officer at the Food and Drug Administration (FDA) to publish her findings of mercury in high fructose corn syrup. As an FDA whistleblower, she could not find employment as a researcher, so she founded the non-profit Food Ingredient and Health Research Institute where she works as a volunteer. She supplements her income working as a licensed special education teacher. Dr. D is considered a leader in the field of nutritional epigenetics with 726 citations according to Google Scholar.

19-20 JUNE

DAY 01
POSTERS

4TH EDITION OF
INTERNATIONAL
NUTRITION RESEARCH
CONFERENCE



J. Oyoo^{1*}, J. Taylor¹, C. VanLeeuwen¹, J. Munga², J. VanLeeuwen³

¹Department of Applied Human Sciences, University of Prince Edward Island, Charlottetown, Canada

²Department of Applied Human Science, Kenyatta University, Nairobi, Kenya

³Department of Health Management, Atlantic Veterinary College, University of Prince Edward Island, Charlottetown, Canada

Effects of food-based nutrition education intervention on knowledge, attitudes, practices and dietary behaviours of primary school children in Ndhiwa, Homa-bay Country, Kenya

Background: Micronutrient malnutrition is still a major problem in Kenya and other developing countries, particularly among school-age children who are rarely targeted by nutrition interventions. Several studies indicate that food-based nutrition education (FBNE) interventions are effective in improving the adoption of recommended nutrition practices among school-age children. However, there is little evidence of the effectiveness of such interventions in developing countries such as Kenya. This study aimed to assess the effects of a FBNE intervention on nutrition Knowledge, Attitudes and Practices (KAP) and food use among grade six children in Ndhiwa, Homa-Bay County, Kenya.

Methods: This research used a pre-post quasi-experimental design to assess the effects of a FBNE intervention on nutrition KAP and food use among grade six children in six primary schools in Ndhiwa, Kenya. The research was conducted from January to March 2021. The intervention was implemented using a FBNE curriculum developed using the health belief model constructs and piloted for grade six Kenyan school children.

Results: Participants in both the intervention and comparison groups were highly knowledgeable on hand washing prior to the intervention, and this remained similar post-intervention $p=0.22$ and $p=0.13$, respectively. The intervention group had more positive attitudes regarding hand washing ($p=0.01$) and practiced more hand washing ($p=0.03$) than the comparison group. Knowledge scores ($p=0.0001$), attitudes scores ($p=0.0001$), barriers scores ($p=0.002$) and practices scores ($p=0.002$) related to iron and zinc were significantly higher in the intervention than the comparison group. Similarly, knowledge scores ($p=0.004$), attitudes scores ($p=0.002$) and practices scores ($p=0.0001$) related to vitamins A and C were also higher in the intervention group than in the comparison group. In addition, kitchen gardening knowledge ($p=0.01$) and attitudes ($p=0.01$) increased significantly in the intervention group relative to the comparison group. In contrast, fewer participants in the comparison group perceived kitchen gardening as difficult compared to the intervention group. There were no significant changes in the consumption of foods targeted by the intervention over the study.

Conclusion: This research suggests that the food-based nutrition intervention had a positive effect on nutrition KAP of the school children. This work will inform the development of future curriculum for interventions that aim to improve these outcomes. Future research is needed to investigate the long-term effects of this food-based intervention on nutrition knowledge, attitudes and practices, as well as on the micronutrient status of Kenyan school children.

Audience Take Away Notes

- Research that assesses the nutrition status of participants following a food-based nutrition intervention can be conducted.
- FBNE can inform the development of a nutrition education curriculum targeting school-age children.
- Further research can be conducted to assess the long-term effect of food-based nutrition education on nutrition KAP and food use of school children.

Biography

Miss Julie Oyoo graduated with a Master of Science in Human Biology at the University of Prince Edward Island, Canada, in 2022. Her master's research focused on "assessing the effects of a food-based nutrition education intervention on nutrition knowledge, attitudes, practices and dietary behaviours of grade six children in Ndhiwa, Homa-Bay, Kenya". Her first degree was in Foods, Nutrition and Dietetics from Kenyatta University in Kenya. She is a Registered Dietitian/Nutritionist (RDN) and works with the Department of Health, Homa-Bay County, Kenya. She has over 5 years of experience in public practice.

19-20 **JUNE**

DAY 02

KEYNOTE FORUM

4TH EDITION OF
**INTERNATIONAL
NUTRITION RESEARCH
CONFERENCE**

Dietary fiber, physical, Physico-chemical studies of paddy varieties before and after inducing retro gradation; Sedimentation value, starch content, in-vitro starch digestibility of rice products

Five different varieties of paddy (four pigmented and one non-pigmented) were shelled and milled in pre and post parboiled form, their dietary fiber contents were estimated. Under similar conditions of milling, raw rice showed a high degree of polish (DOP), 9-12 % and parboiled rice showed low DOP, 4.6-6.6%. Dietary fiber content was high in pigmented rice, 9-10 % compared to non pigmented, ~6 %. Soluble fiber content in pigmented head rice (dehusked) varied from 1 to 1.5 % and in its broken varied from 0.45 to 1.45 %. Dietary fiber content was low by about 1% in parboiled rice. In the parboiled rice of pigmented varieties, the total fiber content varied from 7.95 ± 0.15 to 9.05 ± 0.25 g/100 g and the soluble fiber content varied from 0.7 to 0.9 %. In milled parboiled rice the respective values were 5 ± 0.4 to 6 ± 0.1 % and 0.85 ± 0.05 to 1.25 ± 0.05 %. However, the soluble fiber content in the non-pigmented brown rice, IR-64 remained same after parboiling, 0.75 ± 0.5 %. Milled parboiled rice showed higher soluble dietary fiber compared to milled raw rice. In conclusion, dietary fiber was high in pigmented rice varieties when compared with non pigmented rice. Normalized grain weight, porosity of parboiled paddy (PP) and its de-husked rice (DR), were high compared to their respective native. True and bulk density were lowest for black variety, its DR, its raw and parboiled forms compared to other varieties of paddy. Angle of repose increased from raw paddy to PP whereas it decreased from raw DR to parboiled DR. Under similar conditions of milling of DR, raw and parboiled milled rice of black variety was the darkest. Raw husk showed higher EMC compared to husk of parboiled. Hardness followed the pattern: Raw: Paddy (~230-280 N)>DR (~120-260 N)>Milled rice (~110 N); for parboiled: DR (~270-480 N)>PP (~260-425 N)> Parboiled milled rice (~250-340 N). Cooking time was high for DR of parboiled ones and least for waxy raw milled rice. Results of this study will be helpful in understanding the quality of pigmented rice cultivars, design and fabrication of some of the equipments in rice processing industry. Paddy (*Oryza sativa* L) (variety 'IR - 64'), was parboiled, puffed by sand roasting and flaked by edge runner and roller flaker and variations in physical and physico-chemical properties were studied. The equilibrium moisture content was 27.4% in raw rice while it was much higher (38.9-81.0%) in processed rice. Sedimentation volume was lowest (6.2 ml) in raw rice and highest (18.8 ml) in popped rice. Starch content was 84.8 and 76.5-83% in raw and processed rice, respectively. In vitro starch digestibility was highest in roller flaker flakes and lowest in raw milled rice. Among the ready to eat products, popped rice showed least starch digestibility (~30%).



Savitha, Y.S., HameedaBanu
N.Itagi, M. Chitra, S.Z.Ali
and Vasudeva Singh*

Department of Grain Science
and Technology, Central
Food Technological Research
Institute, Mysore, India (Council
of Scientific and Industrial
Research, New Delhi)

Biography

After he retiring from CSIR-CFTRI as Chief Scientist during 2013, worked as an Emeritus Medical Scientist (ICMR) at the University of Mysore and worked as a Professor, under DBT sponsored Food Science Project, Gauhati, Gauhati University. Published 85 research papers, inventor of several food technology processes, one Patent was commercialized to 30 industries. Handled several National & International projects. Guided around 100 B.Tech MSc, M.Tech students for their Dissertation and Investigation problems and produced 8 Ph.D candidates, including guidance to INSA, African Fellows. Faculty member and Course Co-ordinator of M.Sc. Food Technology, HRD courses of CSIR-CFTRI. Recipient of several awards, delivered several invited lectures, innumerable oral lectures, and presented 80-90 posters at National & International level. Serving Food Safety Standards of India (FSSAI), New Delhi, at different

Audience Take Away Notes

- The audience will understand the rice technology and they can think about the preparation of rice products.
- If people are interested, they can think about establishing rice products manufacturing units either in combination or individually.
- The audience will pick up simple rice technology, specially Agriculturists, farmers, commercial people who will be in a position to earn their livelihood. They will also understand what is shelling, milling, parboiling, how to prepare rice products. Some of the properties will be much useful to the common people.

capacities. Also served as a member of Research Advisory Committee, ICAR-Central Institute of Post Harvest Engg and Technology, Ludhiana, Punjab.

Nutrition and genetics as key determinants of phenotypic variation and molecular evolution

One of the golden rules of biology is that diversity is always encouraged by different mechanisms and that life always finds a way to maintain vitality and biodiversity. We see the best examples of this in organisms that have adapted to very difficult conditions. While the evolution process ensures the survival of organisms that can adapt to different environmental conditions and produce more new generations, similar dynamics have also been effective in the cellular world. The interactions among food sources, toxins, carcinogens, and many other factors are indispensable elements of the external world and they have significant impacts on cellular regulation. Some of the environmental factors have the potential to directly alter the DNA sequence while some of them can also induce epigenetic changes such as DNA methylation and histone modifications. On the one hand, molecular evolution enables DNA to develop mechanisms that allow it to protect itself from change, on the other hand, it triggers biodiversity with genetic and epigenetic modifications. Recent studies have shown that the genome is highly dynamic and interacts more with external factors than previously thought. In this context, one of the most basic activities in an organism is nutrition. It is a long-known fact that different nutrients cause significant changes in the level of metabolism. However, the knowledge that nutrients or additives can cause differences in genetic characteristics has led to the opening of a new era. Epigenetic mechanisms cause significant changes in gene expression and protein levels in many vital pathways for the organism. Post-transcriptional and post-translational regulation mechanisms make the genome a much more dynamic structure at both DNA and RNA levels. The fact that these mechanisms are actually conserved for many organisms shows how important they are at the evolutionary level. This presentation focuses on genetic alterations led by nutritional changes, the interaction between genetic characters and nutritional status, the evolution of corresponding genetic mechanisms, limitations in experimental designs, and controversial results.

Audience Take Away Notes

- Recent findings from the studies on the role of feed supplements regarding molecular aspects.
- Evolutionary aspects of the epigenetic modifications related to nutrition.
- The limitations of in vivo studies on the effects of feed supplements on genetic alterations.
- The genetic structure and nutritional dynamics.
- The advances and controversies about nutrigenomics from molecular nutrition to the prevention of disease.



Sena Ardicli

Department of Genetics, Faculty of Veterinary Medicine, Bursa Uludag University, Bursa, Turkey

Biography

Dr. Sena Ardicli is an associate professor at the Bursa Uludag University, Faculty of Veterinary Medicine, Department of Genetics in Turkey. He received his first Ph.D. degree in 2015 at the same institution. Dr. Ardicli started his second Ph.D. at the Graduate School of Natural and Applied Sciences, Department of Biology in 2018. His areas of expertise are molecular biology and genetics, population genetics, genomic selection, meat science, and animal biotechnology. Dr. Ardicli has more than 130 publications related to his subject and has received many awards in different symposiums and congresses.

In terms of nutritional value: Safe and sustainable beekeeping from the hive to the table

In this work, it has been tried to examine the main production steps of bee products from the hive to the table in terms of increasing the nutritional value and health beneficial effects. Consumers rightly regard bee products as functional foods and expect preventive and/or therapeutic effects from diseases. However, where and how these products are produced can greatly change these effects. When bee products are mentioned, honey, propolis and bee pollen come to mind first. Since all of these products can be sold at high prices, fraud and quality appear as issues to be considered in these products. In addition, honey, propolis and pollen diversity show significant differences both in terms of nutritional physiology and sales price of the products. The inspection of these products is carried out by the relevant authorities by taking samples and making analyses within the scope of the relevant legislation. However, establishing monitoring systems in terms of quality, food safety and sustainability may yield more beneficial results. In terms of nutritional physiology, it is important that honey is produced in the environment of which plants. For example, if the chestnut pollen rate limit specified in the legislation is met as a result of pollen analysis in honey produced in an environment where chestnut trees are dense, this honey can be offered for sale as chestnut honey. In general, each type of honey has its own beneficial effects. However, secretory honeys such as chestnut honey or pine honey can be offered for sale at higher prices due to both less availability and more specific health effects. In this respect, providing a recording system starting from the hive will reduce the possibility of cheating and increase the quality of honey. An example of this is the "Safe and Sustainable Beekeeping Project from the Hive to the Table", which is being carried out under the leadership of the Yalova Provincial Beekeepers' Association with the support of the East Marmara Development Agency. In this project, it is planned to produce bee products within the scope of ISO22000 and ISO9001 systems until they reach the consumer from the hive. It is important in terms of food safety, quality and nutrition to record bee feeds, hive locations, hive, bee and honey production amounts up-to-date. In addition, the use of natural components such as bee cake and bee sugar, which will strengthen the immune systems of bees in the baits used in the diet of bees during the winter months, may ensure that the bees do not need to be sprayed in the future. In this way, the potential to increase honey yield occurs and the risk of drug residue contamination is reduced. Packaging and storage conditions after the production process can affect the composition of bee products.



Yasin Ozdemir^{1*}, Seda Kayahan¹, Mehmet Ozkan²

¹Food Technologies Department, Ataturk Horticultural Central Research Institute, Yalova, Turkiye

²Tekirdag Food Control Laboratory, Tekirdag, Turkiye

Biography

Dr. Yasin Ozdemir studied Food Engineering at the Ege University, Turkiye and graduated as MS in 2004. He received her PhD degree in 2011 at the Namik Kemal University. During PhD studies he started to work in Ataturk Horticultural Central Research Institute. He has 3 process patent and 2 national awards in his scientific study area. He is currently leading 4 national research project which supported by Republic of Turkiye Ministry of Agriculture and Forestry, General Directorate of Agricultural Research and Politics (TAGEM) and 5 private sector supported food technology projects. Dr. Ozdemir also takes parts as a researcher in international project focused on bioavailability and food science/technology. He published more than 100 articles in international journals and congress proceedings.

Audience Take Away Notes

- Main bee product production steps and their effects on healthy nutrition of consumer.
- Selection of bee product can be done more accurately.
- Nutritionists will be able to have an idea about different types of honey and its effects, and they will be able to work on these issues in the future.
- Practical information will be provided for producers, control officers, nutrition consultants and consumers.

19-20 **JUNE**

DAY 02

SPEAKERS

4TH EDITION OF
**INTERNATIONAL
NUTRITION RESEARCH
CONFERENCE**



Alexander V. Oleskin^{1*}, Cao Boyang²

¹Department of General Ecology and Hydrobiology, Biology Faculty, Moscow State University, Moscow, Russia

²MSU-BIT Joint University, Shenzhen, China

Microalgae in terms of food biotechnology: Probiotics, prebiotics, and metabiotics

Green, red, brown, and diatomic algae, as well as cyanobacteria, have been in the focus of attention of scientists and technologists for over five decades. This is due to their importance in the capacity of efficient and economical producers of food additives, cosmetics, pharmaceuticals, biofertilizers, biofuels, and wastewater bioremediation agents. Recently, the role of microalgae has increasingly been considered in terms of their probiotic function, i.e. of their ability to normalize the functioning of the microbiota of humans and agricultural animals and to produce biologically active substances, including hormones, neurotransmitters, and immunostimulators. A separate subsection of the presentation deals with the potential functions of microalgae with respect to the brain and psyche, i.e. in the capacity of psychobiotics that can be used as valuable food supplements. Moreover, algal polysaccharides and some other compounds can be broken down to short fragments that will stimulate the development of useful intestinal microorganisms, i.e. function as efficient prebiotics. Finally, many components of microalgal cells and chemical agents produced by them can exert important health-promoting effects per se, which enables considering them as potentially valuable metabiotics (the term preferred by late Prof. B.A. Shenderov) that are alternatively denoted as postbiotics in the literature.

Audience Take Away Notes

- The audience is expected to pay attention to microalgal species/strains/components that will be of use in terms of their specific food production-related projects. For instance, supplementing ice cream, juices, hamburgers, or many other food items with economical and health-promoting algal colorants will enable giving the food any of the colors available on the microalgal “easel”, whether the emerald green or bluish green of chlorophylls of the deep red of astaxanthin.
- This is expected to help the audience make their food not only delicious and esthetically appealing, but also very healthy, due to the antioxidant, antibacterial, antifungal, anti-aging, and other activities of the algal components involved.
- Other research institutions around the globe are invited to join us in developing recipes and techniques of increasing algal biomass-producing efficiency; we have our own tricks enabling microalgae to grow faster and produce greater amounts of proteins, carbohydrates, carotenoids, and a whole gamut of other valuable components.

Biography

Prof. Oleskin majored in microbiology at Moscow State University and graduated as MS in 1981. He defended the Ph.D. thesis in 1985. Since then, Oleskin has been focusing on the role of neurotransmitters such as biogenic amines as ubiquitous signal agents and regulators utilized by a wide variety of life forms including bacteria and algae. In 2013, he was appointed Full Professor at the department currently known as the General Ecology and Hydrobiology Department of the Biology Faculty of Moscow State University. Prof. Oleskin’s research has resulted in publishing over 100 articles and several monographs and guide-books largely dealing with the functions of chemical communication factors in terms of the physiological activities of diverse microorganisms, with special emphasis on the role of (a) probiotic bacteria and (b) microalgae.



Ushakiran Sisodia^{1*}, A.N radha²

¹Diet and nutrition department, Nanavati super Speciality Hospital, India

²Practising Lifestyle Clinician &NLP coach, Heads Diet & Nutrition: Nanavati MaX super Specialty Hospital Mumbai, India

Innovative ways to handle diabetes mellitus (hba1c 14.6to 5.6 in 3 months: A case discussion)

Patient with uncontrolled Diabetes can be brought to control 100%,only by Lifestyle modification, use of NLP(Neuro Linguistic Programme) controlling their subconscious mind and proper distribution go carb throughout day. A special case 32 yr /M, having tested Covid positive, hard core non vegetarian living in Qatar Saudi, diagnosed 14.6 glycosylated hemoglobin brought to 5.6 only in the months. Would like to present this case. (I have Counseling more than 3 lakh patient of all different types of disease, out of which 80 percent are uncontrolled diabetes). And give world a message that you need to be disciplined in your approach towards patient. About 422 million people worldwide have diabetes, the majority living in low-and middle-income countries, and 1.5 million deaths are directly attributed to diabetes each year. Both the number of cases and the prevalence of diabetes have been steadily increasing over the past few decades.

To be innovative in approach, as each patient is unique, educate lifestyle modification & by using NLP effectively, reduce symptoms and deterioration of body organs. A diet counseling play an important role in changing mind set. Use of Neuro linguistic approach helps patient to delete old myth and bad memories. Reduced medicine doses of OHA and even insulin. Recommendation mini educational camp to educate diabetic patient. About getting better control over diabetes disease. To conclude as early as you start, make them aware Guideline can be developed, Programme and policies to assess carbohydrate intake level as a benchmark. If necessary, the recommendations can also be used to develop measures to decrease sugar intake through public health interventions such as food and product awareness, consumer education, and the establishment of food-based dietary guidelines. I developed the present evidence-based guideline.

Audience Take Away Notes

- Use of Neuro linguistic Programme to treat diabetes, this help the audience to control blood sugar with change in lifestyle reduce damage caused by high sugar on body organ.
- Yes this case cans be guidelines for other faculty in their country.
- Yes this provide a practical solution to a problem that could simplify or make a designer's job more efficient.
- Yes it will improve the accuracy of a Diet design, or provide new information to assist in a design problem.

Biography

Total Work experience: 25 years in field of Medical nutritiontherapy, business management post-graduation Diploma from NMIMS 2021, Master in Foodscience, 1986 Gold medalist (foods and nutrition), registered Dietitian R.D no 10/95, Bsc homescience honors, secondary board distinction in physics and chemistry. Won Diabetes 2022 presented video audio on Gullien berry syndrome, Medical nutrition therapy 2022. Best practicing dietitian for A. N. Radha award winner 2005. Invited to Australia Sydney for paper presentation On uncontrolled diabetes mellitus a case capsule, Presented paper in Dubai 2016, Live interactive sessions. Publishes Research paper In YOKOHAMA 2008, JAPAN, Publishes Research paper in EFAD 2005 Nutrition, GENEVA Switzerland June 2-5 2005.



O.P. Yadav

Chemistry Department, CCS Haryana Agricultural University, Hisar-125004, India

Garlic (*Allium sativum*) - A nutritive and health promoting medicinal plant-an overview

Garlic (*Allium sativum*), a species of bulbous flowering plant in the genus *Allium*, is a native of south and central Asian countries. It has been used since long as a seasoning, food flavoring, traditional herbal medicine, and a promising environmental friendly pesticide. These remarkable properties of Garlic (*Allium sativum*) can be attributed to several sulfur-containing chemical compounds ingeniously packaged in this plant by nature. Several phytonutrients present in garlic have been found effective in the treatment and prevention of diseases such as obesity, coronary heart disease, diabetes, hypertension, and disturbances of the gastrointestinal tract. Garlic's properties result from the combination of various biologically active substances including enzymes such as alliinase, sulfur-containing compounds such as alliin, and enzymatically produced allicin. This paper presents an overview of phytochemical composition, medicinal uses, and the toxic effects of garlic (*Allium sativum*).

Keywords: *Allium sativum*, Allicin, Environmental, Hypertension, Phytonutrients.

Audience Take Away Notes

- The audience will learn from this lecture about the phytochemical composition of Garlic (*Allium sativum*), its medicinal uses to cure or prevent various diseases including hypertension, coronary heart disease, diabetes, obesity, and disturbances of the gastrointestinal tract.
- Beside these the audience will also learn about the possible harmful effects of garlic (*Allium sativum*) on the human body.

Biography

Dr. Om Prakash Yadav did Ph.D. in Chemistry from Panjab University, Chandigarh (India), and worked as a Professor of Chemistry at CCS Haryana Agricultural University (1975-2003) in India, and then as a Professor of Physical Chemistry at Haramaya University, Ethiopia (2008-2014). Prof. Yadav was awarded the Indian National Science Academy (INSA) Fellowship in 1996. He then worked as Visiting Professor in 2000 at Chalmers University of Technology, Gothenburg (Sweden). Prof. Yadav has guided 8 Ph.Ds. and published about 100 research papers at various International Journals. Dr. Yadav is member of several Academic/Scientific organizations and is also working at Editorial Boards of a number of International Scientific Journals.



Buthaina Alkhatib^{1*}, Alaa Al-Shorman², Lana M. Agraib³

¹Department of Clinical Nutrition and Dietetics, Faculty of Applied Medical Sciences, The Hashemite University, Zarqa, Jordan

²M.sc. Human Nutrition and Dietetics, Department of Nutrition and Food Technology, Faculty of Agriculture, The University of Jordan, Amman, Jordan

³Department of Food Science and Nutrition, Faculty of Agriculture, Jerash University, Jerash, Jordan

The use of diet practices, herbs, and supplementations for weight loss among adults in Jordan: A cross-sectional survey

Background: Obesity is a global health pandemic; several studies have indicated that people commonly seek claim diets and herbal supplementations.

Aim: The study aimed to assess the prevalence of herbs and supplementation use and other weight-loss strategies among adults in Jordan.

Methods: A cross-sectional study was conducted on a sample of 689 adults (≥ 18 years) using a structured validated online questionnaire. Data about sociodemographic, anthropometric data, weight-loss strategies, diets, and herbs used were collected. A frequency descriptive statistic test was used to describe the sample. A p-value of < 0.05 was considered statistically significant.

Results: 28.9% of the participants reported the most common source of diets they followed to either by themselves or dietitians (26.0%). Also, 23.4% reported that they followed more than one diet. Almost three-quarters of participants (74.7%) reported that they think that weight-loss diets are unsafe to be decided by a dietitian. The majority of participants (83.5%) reported that they do not believe in the role of using herbs, and supplementations alone to reduce weight. The most commonly used single herb was green tea (43.1%). 38.2% of total participants think that using herbal supplements for weight reduction is safe. Slightly less than one-third of the participants suffered from side effects after using herbs.

Conclusions: The obese and overweight adults in Jordan seek different weight-reducing strategies, including the use of diet practices, herbs, and supplementations. More national studies with different designs are required. Also, strategies may be needed to increase national population awareness about weight loss practices (cons and pros).

Audience Take Away Notes

- The audience will be able to image the challenge of using claims in weight management in obese adults.
- The audience will make and create an educational program to educate population about the cons and pros of weight management practices.
- It will make a designer's job more efficient.

Biography

Buthaina Alkhatib is an Assistant Prof. in clinical nutrition and Dietetics, at Hashemite University now. She had college teaching experience for 4 years. She had an experience in food supplementation and functional foods for 10 years. She received her Ph.D. degree in 2017 with an Excellent degree. She had published more than 25 research in internationally impacted journals. Her research interest is in obesity, nutritional status assessment, and metabolic syndrome.



Dina Hamdy Selim

Lecturer in Faculty of Pharmacy Alexandria University, Egypt

Inappropriate dispensing of oral nutritional supplements on the quality of life of cancer patients

Oral Nutritional Supplements (ONS) are considered a cornerstone in the treatment plan of malnutrition in cancer patients. However, the prevalence of inappropriate prescription of ONS is high.

In this study, we aim to investigate the effect of inappropriate oral nutritional supplementation (consisting of prescription of ONS without evident clinical indication, or the absence of ONS when at risk of malnutrition) on the quality of life of cancer outpatients.

Methods: A cross-sectional comparative study was conducted in 104 cancer outpatients, receiving ONS without prior malnutrition risk screening ($n = 51$), and patients not receiving ONS ($n = 53$).

Nutritional risk screening was performed using the abridged patient-generated subjective global assessment (ab-PG-SGA).

The quality of life was assessed using EORTC QLQ-C30 version 3.0 questionnaire. Multivariate analysis was conducted to determine the predictors of quality-of-life scales.

Age (years), malnutrition (ab-PG-SGA scores), BMI (kg/m^2), TSF (mm), MUAC (cm), ONS (yes, no) were entered into the linear regression analysis as predictors (backward stepwise linear regression analysis).

Results: The prevalence of malnutrition risk (ab-PG-SGA ≥ 6) was 74%.

The median score of the ab-PG-SGA for ONS receiving group was significantly higher ($p = 0.045$). Furthermore, univariate analysis showed that the scores of the global health status (QoL) and the role functioning (RF) scales were significantly lower for the ONS receiving group ($p = 0.020$ and $p = 0.016$, respectively). Multivariately, malnutrition, inappropriate ONS prescription, and triceps skin fold were found to be predictors of the RF scale, while malnutrition was the only predictor for the QoL.

Conclusion: The inappropriate ONS prescription does not improve nutritional status or quality of life of cancer outpatients.

Biography

Dina Hamdy Selim is a Fellow of Clinical Nutrition, Lecturer in Faculty of Pharmacy, in Alexandria University, Egypt.



Amit Kesarwani^{1*}, Ramesh Kumar Saini² and Shih Shiung Chen³

¹Department of Agronomy, College of Agriculture, G.B. Pant University of Agriculture and Technology, Pantnagar, Uttarakhand, India

²Department of Crop Science, Konkuk University, Seoul, South Korea

³Department of Natural Biotechnology, Nanhua University, Chiayi, Taiwan

Composition of cereals nutrition in non-chemical farming

The theory defines that in the absence of synthetic chemicals, plant develops higher level of natural phytochemicals (phenolic compounds, antioxidant) in defense against biotic or abiotic stress. These compounds are universally distributed among the plant species and possess potent antioxidant activity which reduces the risk of heart cancer, cancer, and other chronic diseases. Cereals consider major source of energy, protein, phytochemicals etc. but neglected in their complete profile of phenolic compounds and total antioxidant activity such as organically grown white rice that commercially available. Numerous physiochemical properties are exceptionally impacted by the agronomic practices and nutrient applications. The entire cereal grains assume vital because of their utilization in original form notwithstanding that, the inclinations of high eating and cooking characteristics among clients are the derivative force in market which insists breeders for further improvement. Starch is the significant part of rice and portrayed by physiochemical properties, like gel strength, and pasting properties, while Japonica rice cultivars are the significant market holder for various processed food materials and products in Asia. The vast majorities of the manufacturers incline toward rice flour rather than starch as an effective ingredient in processed foods. And yet, the swelling and pasting properties of starch granule were not affected by starch only, inclusive of lipids, protein and mineral compound. External climate and plant nutrition are two significant variables affecting development, yield and grain quality. The immediate trend focused likely on environmental aberrations and health issues, while investigations exceptionally grown towards new adoption of substitute farming as an organic which further develop the rice grain quality. Well convinced science reported, naturally cultivated rice cultivars found superior in grain quality and enhancement of starch properties with better chewiness while compared to conventional chemical based farming.

Audience Take Away Notes

- The discussion will highlight the antioxidant and phenolic properties of staple foods.
- People can adopt alternate farming practice without chemicals and improve the nutritional aspect of cereals
- The understanding between plant phytochemicals and farming practice can be improvised.
- The food industry can replicate and inculcate the organic produce for improved bakery products based on starch quality.

Biography

Dr. Amit Kesarwani is working at G.B. Pant University of Agriculture and Technology, Pantnagar, India as an Assistant Professor since 2015. The expertise develops in input efficient technology and sustainable farming practice. He pursued his PhD from National Chung Hsing University, Taiwan as Ministry of Education Fellowship, Taiwan and recipient of Junior Research Fellowship, India also. He keeps an excellent record of research experience while published nearly 50 publications including 7 SCI reputed journals. Currently he's engaged in the projects of World Bank and Indian Council of Agriculture Research. He read papers at Cyprus, South Korea, Thailand and Taiwan while coordinating as Editor, International Advisor and Board member of various reputed journals.



Dr. Md. Mofijul Islam Bulbul^{1*}, Md. Saimul Islam², Dr. Noshin Farzana², Dr. Md. Abdul Alim¹, Dr. Md. Moniruzzaman¹, Dr. S M Mustafizur Rahman¹, Dr. Aliya Naheed²

¹National Nutrition Service, MOHFW, Dhaka, Bangladesh

²Initiative for Non communicable Diseases, HSPSD, ICDDR, Dhaka, Bangladesh

Changes in the micronutrients status in Bangladesh over the period (2011 to 2020)

Micronutrient Deficiencies (MD) are one of the greatest public health and socioeconomic concern that adversely affect more than 2 billion people worldwide and mostly suffered by the people of low and middle-income countries. The objective of this study is to observe the changes in the micronutrient status over the period 2011-2020 for vitamin A, Vitamin D, Zinc, Ferritin and Anaemia among children (5 to 59 months) and Non-Pregnant and Non-Lactating (NPNL) women of reproductive age (15-49 years). Also, we tried to estimate the prevalence of micronutrient deficiency across different sociodemographic factors. A cross-sectional study was conducted in 2020 using multi-stage cluster sampling methods to produce estimate for key micronutrient indicators in Bangladesh where 250 clusters (8 households/ cluster) were randomly selected and we recruited 1041 under-5 children from 2045 households and 1013 NPNL women from 2045 different households and compared it with the data of 2011. Among the under-5 children more than 7.2% children have moderate to severe Vitamin A (VitA) deficiency in 2020 which was 20% in 2011. Vitamin D (VitD) deficiency was reported in 21.9% of children compared to 2011 was 39.6%. Approximately 31.0% of the children had Zinc deficiency and progress made than 2011 was 44.6%. The prevalence of anaemia was 21.1% whereas it was 33.1% in 2011. Around 15.1% and 10.7% of children had iron deficiency in 2020 and 2011 respectively. Among NPNL women, mild to severe VitA deficiency reported higher in 2020 was 7.5% than 2011 which was 5.4%. VitD deficiency was reported 69.9% in 2020 and 71.5% in 2011. Iron deficiency also reported higher in 2020 compared to 2011 (14.1% vs 7.1%). Prevalence of anaemia was higher in 2020, 28.9% than 2011, 26%. Zinc deficiency (43.4 %) and 20.20% had Vitamin B12 deficiency in 2020 and 57.3%, 23% in 2011 which shows improvement. One third of the NPNL women (29.0%) had Folate deficiency. Among the NPNL women, 73% have two or more micronutrient deficiencies. This study reveals that despite a comprehensive micronutrient program in the rural and urban areas targeting under-5 children and NPNL women, a wide spread deficiency of multiple micronutrients has been observed in the study population, and the situation demands urgent review of the nutrition program in Bangladesh. Generating a national evidence of the gaps is crucial for developing well-designed program supported by evidence-based policy that would enhance promoting micronutrient sufficiency at the population level towards achieving the sustainable development goal of decreasing poverty in Bangladesh.

Audience Take Away Notes

- From my presentation, the audience will get a compared scenario of the micronutrient status in Bangladesh that may help them to take global public health decision making process and provide new information to assist in a design problem and solution.
- These findings can be used as referral for any upcoming study and this research that other faculty could use to expand their research or teaching.
- Further study/research could be conducted in another country based on the experience gathered from this current study.

Biography

Dr. Md. M. Islam Bulbul, Program Manager, National Nutrition Services and SUN Country Focal Point works under Ministry of Health and Family Welfare (MOHFW) in Public Health, Global Health and Nutrition arena. As a member of Bangladesh Civil Service (MoHFW), he has experiences in the Health Ministries and Agencies related to Health, Nutrition & Population. He was extensively involved in the process of formulation (from development to endorsement) of Second National Plan of Action for Nutrition. Having core competencies and skills for Health System, Nutrition especially in Planning, Research, Development, M & E, he represents Government of Bangladesh in national, regional and international levels many times. He did his MBBS from Mymensingh Medical College and MPH from James P Grant School of Public Health. He has completed PGD from Lund University, Sweden and Certificate course from Wageningen University Netherlands and University Tokyo, Japan. He himself is a founder as well as advisor of different voluntary organization within the country. He is also involving as a delegate from Bangladesh with different international alliance group those who are working in Public Health Research and Health Policy areas of NCDs, Nutrition, Global Health, Maternal and Child Health.



Sufura Aslam, Ali Imran*, Muhammad Umair Arshad

Department of Food sciences, Government College University, Faisalabad, Pakistan

Preparation and nutritional characterization of value-added health mix using germinated barley

The present investigation was an attempt to explore the nutraceutical potential of orange peel, malted barley, and fenugreek based value-added/functional health mix. Purposely, orange peel and fenugreek powder have been combined to germinated barley flour in a ratio of 30, 15, 5 g, and 30, 20, 10 g respectively. The composite flour was subjected to a nutritional and antioxidant assay. The nutritional analysis revealed that orange peel and malted barley are good sources of protein, fiber, fat, potassium (K), and calcium (Ca). Afterward, the healthmix-based functional drink was developed and subjected to physicochemical, functional and sensory evaluation. Whereas, the TPC (Total Phenolic Content) increased from 131 ± 1.183 GAE mg/g to 144.0 ± 1.22 , 168 ± 1.32 , 192 ± 1.45 , and 212 ± 2.05 GEA mg/g respectively whereas DPPH (1, 1-diphenyl-2-picrylhydrazyl), activity improved significantly from 38 ± 1.23 to 44.5 ± 1.32 , 59.5 ± 2.23 Trolox mg/g. Likewise, FRAP (ferric reducing antioxidant power) exhibited a significant increase as 17.21 ± 1.65 , 22.25 ± 2.20 , and 24.29 ± 2.23 Gae mg/g, respectively. Functional characteristics also exhibited significant differences ($P < 0.05$) due to the addition of peel flour at various concentrations in respect to bulk density, foaming capacity, foam stability, and water absorption capacity. The drink was highly accepted at a 15% level of fortification of peel flour with 30% barley flour and 5% fenugreek flour by the consumer estimated through sensory characteristics. Sensory scores of formulated value-added drinks decreased with the progression of storage time however, the scores remained within an acceptable range throughout the study.

Keywords: Fenugreek seed (FS), Orange peel (OP), Germinated barley, Antioxidant indices

Audience Take Away Notes

- Food processing industry, pharmaceutical industry and herbal industry.
- It will attract the attention of business community owing to its cost effectiveness and safety.
- Provide viable solution for the utilization of Agro-industrial waste into useful products.

Biography

Dr. Ali Imran is currently working as Associate Professor in the Department of Food Science from more than 10yrs. He has expertise in formulation of plant based nutraceutical based dietary intervention against oxidative stress mediated maladies both in animal and human models. He has more than 60 high impacted publications in reputed food science and nutrition journals. He also won many Competitive research grants relevant to his expertise. Currently, he is working on the role of plant based nutraceuticals in brain health on animal models. He also wrote more than 10 book chapters on health endorsing perspective of polyphenols.

Participants List

Alexander Oleskin Moscow State University, Russia	43
All Imran Government College University, Pakistan	51
Amit Kesarwani G.B. Pant University of Agriculture and Technology, India	48
Ana I. Faustino University of Evora, Portugal	27
Augustine Ikhueoya Airaodion Federal University of Technology Owerri, Nigeria	28
Betty Ajibade Durban University of Technology, South Africa	25
Buthaina Alkhatib The Hashemite University, Jordan	46
Delphine Payros Research Center in Food Toxicology, France	23
Dian Handayani Universitas Brawijaya, Indonesia	20
Dina Hamdy Selim Alexandria University, Egypt	47
Faik Gokalp Igdir and Kirikkale University, Turkey	19
Gabriela Gutierrez Salmean Anahuac University, Mexico	30
Hari Niwas Mishra Indian Institute of Technology Kharagpur, India	15
Ivana Sola University of Zagreb, Croatia	31
Jack Timothy Rogers Harvard University, United States	17
Julie Achieng Oyoo University of Prince Edward Island, Kenya	34
Md Mofijul Islam Bulbul MoHFW, Bangladesh	49
Mohammad Kamil Lotus Holistic Healthcare Institute, United Arab Emirates	14

Participants List

Om Prakash Yadav CCS Haryana Agricultural University, India	45
Renee J Dufault Food Ingredient and Health Research Institute, United States	32
Sahnur Irmak Olive Research Institute, Turkey	16
Sena Ardicli Bursa Uludag University, Turkey	39
Teresa Gervasi University of Messina, Italy	22
Ushakiran Sisodia Nanavatimax Superspeciality Hospital, India	44
Vasudeva Singh Gauhati University, India	37
Weihao Meng University College Dublin, Ireland	26
Yasin Ozdemir Ataturk Horticultural Central Research Institute, Turkey	40

*"We wish to meet you again at our
upcoming events next year..."*

6th Edition of

International Nutrition Research Conference

September 9-11, 2024 | Germany | Hybrid Event

Questions? Contact

+1 (702) 988-2320 or
nutrition-research@magnusconference.com