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Many people are finding lots of contradictions regarding nutrition, health and wellness. It's easy to get overwhelmed and confused about what you is best for you to eat and how to live a healthy lifestyle. Julie will be covering how you can find out what is right for you now to help empower you to live a healthier life and improve your health.

**Biography:**

Julie Silver is a Nutritional Therapist, Stress Management & Health Consultant & Author of Food Awakening – Nutrition for NOW (paperback and Kindle), Fertility Naturally e-book. She loves to empower you to find out what is right for you, enabling you to have maximum vitality with minimum effort. She includes nutrition, stress management, mindfulness and natural ways so you can improve your immune system and get healthier physically & mentally. This interactive workshop will be a chance for you to find practical and realistic ways to improve your life.
Sustainable Agriculture for Safety and Security of Food: the technological Perspectives for rural development

Agriculture plays a pivotal role in economy and rural development of any country and it contributes a significant amount in GDP. But its share in GHG production is about 14%. Modern food production and consumption has become highly unsustainable. It is produced and consumed in a complex processed. High amount of water and energy is required at all stages from crop production to consumption leading to severe environmental impacts. Food production and consumption also generate huge waste and pollutants. The high Technology agriculture involves large amount of agro-chemicals, water and energy, which damage the natural ecosystem and pollute the air, water and soil.

The concept of sustainable agriculture had gained prominence since publication of Brundtland report in 1987 and then in second Earth summit held at Rio De Janeiro Brazil in June 1992. The U.S National Research Council (1989) defined sustainable agriculture as those alternative farming systems and technologies incorporating natural processes, reducing the use of inputs of off-farm sources, ensuring the long term sustainability of current production levels and conserving soil, water, energy and farm biodiversity. It is a system of food production which avoids or largely excludes the use of chemical fertilizers and pesticides.

The paper emphasizes that sustainable agriculture seeks to integrate a wide range of pest, agro forestry, soil, water and energy management technology which involve less impact on environment.

Biography:

Suresh Prasad Singh is a Former Vice Chancellor, VKS University, Ara (Bihar), India. Vice Chancellor of two Universities – 1) VKS University, Ara (Bihar), India, 2) Himalayan University, Itanagar (Arunachal Pradesh) India, Dean of Science and Prof. of Geology, Ranchi University, (Ranchi), India. Member University Service Commission, Patna (Bihar), India. Guided many research scholars for Ph. D Degree. Contributed many papers in National and International Journals.
There are many forms of a nutritionist that help to change the diets of their client by following generalized guidelines or plans. I use an individual’s chemistry by using Hair Analysis to dictate a scientific map of needs. By looking at cellular levels, ratios, and heavy metals we can create a specific plan including food choices and supplementation for each person. We can see a snapshot of their cellular health in the last month to guide the precise nutrients needed. I create a lifestyle eating plan that isn’t counting calories or macros but leaves my clients full and nourished. I am also measuring heavy metal toxicities that may be affecting behavior, mental function, and physical symptoms. After fine-tuning the diet, we work on the detoxification factors to clear the heavy metals as well as other toxins. I walk clients through the detox symptoms to relieve the body of underlying causes of symptoms to their health struggles. I regularly see a good decline in my client’s symptoms after their first retest at 3 months. I can measure and show improvements with science-based testing in deficits and toxicity after 90 days. Common symptoms such as fatigue, brain fog, inflammation, and digestive issues improve the fastest. From 3 to 6 months to a year, the thyroid and adrenals will also follow in a correction. I look forward to explaining the process and results that are possible to give Health At The Cellular Level™!.

Biography:
Lisa Rufsholm passion is to help those who are struggling with fatigue, thyroid & adrenal issues, digestion challenges, insomnia, infertility, etc. Most have not found relief from the medicine, tired of prescriptions with side effects as well as having symptoms dismissed as not real. Rebuilding nutrition from the cell to begin detoxifying again can correct the root cause.
Mindful Eating During Covid and Beyond

During this unprecedented time, many people find themselves stressed-out, eating more, and moving less. This unhealthy combination can lead to weight gain, depression, and an increased risk of conditions like obesity, cardiovascular disease, and diabetes. To initiate positive behavior change, awareness is key. This presentation explores mindful eating and some of the reasons why we eat when we’re not physiologically hungry. Most importantly, attendees discover easy and practical tools they can implement into their busy lifestyles.

Presentation Description:

Does the snack cabinet have your number? Especially during this unprecedented time when we’re working from home, it’s getting colder, and the kids are at home 24/7! Come discover why we eat when we’re not truly hungry and ways to avoid or reverse “Quarantine 15”. But, more importantly, to explore ways to truly enjoy life with optimum health and vitality.

Keywords: Mindful Eating, weight gain, obesity, Covid-19

Biography:

Michelle Sugiyama is the Founder and President of Mindful Eating. She is a Master Certified Health Coach, #1 International Bestselling Author, International Speaker and Educator, professionally trained chef, and holds a M.S. in Chemistry. She was also an Interim Lecturer at UC Berkeley for Food Science.
Effect of High-Protein high-fibre supplement on Glycaemic and lipid control in overweight and obese Indian adults with type 2 diabetes mellitus: A 24-week, randomized, controlled trial

Vinita Satyavrat, Rachana Bhoite, Anitha Chandrasekaran, Varalakshmi Lalithya Pratti, Shivani Aacharya, Amey Mane, Suyog Mehta, Ravindra Machhindra Kale, Gayathri Nagamuthu, Sasikala Selvaraj, Gayathri Rajagopal, Sudha Vasudevan, Shobana Shanmugam, Anjana Ranjit Mohan, Ranjit Unnikrishnan, Kamala Krishnaswamy, Viswanathan Mohan

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2Department of Diabetology, Dr. Mohan’s Diabetes Specialities Centre, Chennai, India
3Department of Foods, Nutrition & Dietetics Research, Madras Diabetes Research Foundation, Chennai, India

Foods rich in protein, dietary fiber and low in glycaemic index could potentially improve glycaemic control and help in management of type 2 diabetes (T2DM). Improvement in lipid profile is also seen because of diet rich in Mono Unsaturated Fatty Acid (MUFA), high fiber and high protein. In this study, the effect of high-protein high-fibre (HPHF) nutritional supplement in addition to standard medical care for glycaemic control was evaluated. Overall, 100 overweight/obese participants with T2DM (aged 30-65 years) were randomized (1:1) to either intervention group (standard care of T2DM+25 g HPHF nutritional supplement (twice daily), n=50) or a control group (standard care of T2DM, n=50). Change from baseline in 24-hour glycaemic response at weeks 12 and 24 were assessed. In intervention group; the mean (SE) daily incremental area under curve (IAUC) from baseline to week 24 was significantly lower 23.0 mg-15min/dL (57.2) compared to control group 168.0 mg-15min/dL (39.0), p=0.008. The intervention group showed significant reduction in glycosylated haemoglobin (HbA1c) -0.3% (SE-0.3), p=0.03 and fasting blood sugar (FBS) level -16 mg/dL (SE-12), p=0.01 at the end of week 24 compared to control group. Statistically significant improvement was observed in HDL levels (3.2 mg/dL versus 1.7 mg/dL) from baseline to Week 24 in the intervention group compared to control group (p < 0.05). Twice-daily consumption of HPHF nutritional supplement (25g each) significantly improved glycaemic control, reduced the average 24-hour glycaemic response and postprandial glucose spikes. The supplement also was able to demonstrate positive impact on HDL cholesterol in diabetic subjects. Inclusion of HPHF supplement would be a useful effective aid to glycaemic control and overall lipid parameters in overweight/obese participants with T2DM.

Clinical Trial Registration Number: CTRI/2018/04/012979

Keywords: high-protein, high-fibre, glycaemic control, lifestyle, dietary intervention, obesity, type 2 diabetes, nutritional supplement
Biography:

Vinita Satyavrat is a medical doctor with her postgraduation in clinical pharmacology from India and nutritional medicine from UK. She is a highly passionate, agile and adapting, values driven individual clearly focused on driving futuristic thinking based on changing needs of consumer, patient and industry. She has held various positions in the pharma and nutraceutical industry over past 20 years in the field of nutrition, nutraceuticals and pharma space. She currently heads the R&D, Medical & Regulatory for Dr. Reddy's Laboratories for India and international markets. She is responsible for creating the complete pipeline of differentiated innovative products with global science and local needs alongwith technology innovation with the responsibility of creating the complete new product process aligned with individual country needs integrated with in-country models. Prior to her current assignment, she headed the global function of Clinical Development and Medical Affairs for GSK Consumer Health for the Nutrition Category. She has held several other senior leadership roles in Abbott Nutrition, Wockhardt & Unichem laboratories managing the research and medical functions. She has several national and international publications in the field of nutrition and pharma to her credit. She has worked in several spaces in nutrition including mother and child nutrition, metabolic disorders and hospital nutrition. She was also a key member who worked on Scheduled Essential Drugs List for the tertiary care centres & DOTS programme in tuberculosis in India as a part of the WHO collaborative programme for 3 years during her postgraduation.
Factors affecting the academic performance of university students

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¹Department of Clinical Nutrition, College of Applied Medical Sciences, Taibah University, Al Madinah Al Munawarah, Saudi Arabia
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Students’ academic performance remains one of the ongoing topics of debate among educators, academicians, and policymakers. The academic performance of college students affects their future occupational success and health. Studies indicate that dietary behaviours and practices are among the crucial factors which can predict the academic performance of college students. For instance, inadequate adherence to a healthy diet such as the Mediterranean diet, high intake of fast food, sugar-sweetened drinks, and irregular breakfast consumption may negatively affect students’ academic performance. It is now time to focus on the possible factors affecting the academic performance of students. In this presentation, the factors affecting the academic performance of university students will be highlighted with a specific focus on our study in Saudi Arabia. The association of demographic characteristics, dietary intake, body mass index and hostel staying with students’ academic performance will be discussed. Appropriate recommendations such as the implementation of nutrition education programs to raise students’ awareness about the importance of healthy eating and maintenance of healthy body weight will be highlighted.

Keywords: Dietary Habits, Demographic characteristics, BMI, Academic Performance, University Students, Saudi Arabia

Biography:
Ahlam Badreldin El Shikieri has completed her PhD in Clinical Nutrition from Queen Margaret University, Scotland, UK, an MBA from Leicester University, UK and a Postgraduate Diploma in Community Nutrition from Queen Margaret University, UK. She is a registered Consultant Clinical Nutritionist, a Certified Public Health Nutritionist and an Associate Professor currently working in Saudi Arabia as the Head of the Scientific Research and Ethics Committee at the Faculty of Applied Medical Sciences, Taibah University, Saudi Arabia. She is being awarded the Outstanding Dietitian of the Year 2020 Award by the Academy of Nutrition and Dietetics. She served as an invited speaker at several workshops and conferences in Sudan, Saudi Arabia, Spain, Germany and Taiwan. She is a member of several associations and societies including the Academy of Nutrition and Dietetics and IAAND (The International Projects’ Coordinator), Society of Nutrition Education and Behaviour (The Coordinator of the Nutrition Education Evidence database) and the British Nutrition Society.
Flow cytometric viability assessment of probiotics

Jakub Kieps
Poznan University of Life Sciences, Department of Biotechnology and Food Microbiology, Poznan, Poland

Probiotics, thanks to their pro-health properties, are a group of microorganisms that are frequently studied. Methods of their preservation gain growing interest as a research subject and among them, fluid bed drying shows promising results and high cost-effectiveness. The most important factor lowering the viability of dried bacteria are different stresses to which the cells are exposed during drying. Those include thermal, osmotic, acid and mechanical stresses. To increase cell resistance they can be cultured with exposure to stress conditions which, if introduced in a controlled manner can help the bacteria to adapt to those stress factors. In this research, we analyze samples of three probiotic strains (Leuconostoc mesenteroides, Enterococcus faecium and Carnobacterium divergens) prepared by culturing in standard conditions, as well as under heat stress and dried by fluid bed drying. Flow cytometry is a cell count method that is being used either as an alternative or as a complementary method to classical plate analyses. The viability and activity of probiotic bacteria cells in the sample were determined by fluorescence staining with SYBR Green I and PI (propidium iodide). The cells in the samples were counted and assessed for morphology (microscopic image), activity (signal for SYBR Green I) and integrity of the cell membrane (signal for PI). Samples for all strains were obtained during the logarithmic and stationary growth phase and also after the induction of stress factor. Additionally, flow cytometry was used to measure the activity of cells during rehydration in different media, such as MRS, MRD and NaCl.

Keywords: Fluid Bed Drying, Probiotics, Lactic Acid Bacteria, Flow Cytometry, Stress Conditions, Rehydration.

Biography:

Jakub Kieps ia s PhD student at the Department of Biotechnology and Food Microbiology in Poznań University of Life Sciences. He is studied Biotechnology at the Poznan University of Life Sciences, Poznan, Poland and obtained his Masters Degree in 2019. To pursue further scientific development he started PhD studies in the field of Food Technology and Nutrition at the Department of Biotechnology and Food Microbiology. Research interests include drying techniques, development of probiotics and improvement of their viability and activity.
A healthy diet is of great importance for the protection and maintenance of the health. Various events take place in our bodies during childhood, adolescence, adulthood and old age. The quality of our diet plays a role in the successful realization of all the events such as growth and development, reaching to physical and mental maturity, disease prevention, fighting diseases, protecting the physical integrity of all body. Quality of life of individuals who know and practice proper nutrition is undoubtedly increasing.

The development of today’s convenience food sector, numerous products produced by food companies and the additives in them, increased eating habits outside home, hormone and pesticide residues found in natural foods, gradually increasing sedentary lifestyle and the number of chronic diseases lead to paying strict attention to healthy nutrition. 2.5 billion people in the world experience health problems due to malnutrition. Anemia due to iron deficiency, vitamin A deficiency and iodine deficiency are the leading causes of these health problems. Incidence of nutrition-related health problems varies between developed and developing countries, and underdeveloped countries. These problems vary by age and gender, as well.

Improper nutrition leads to a lot of problems from anemia, obesity, high cholesterol, diabetes, cancer, intestinal diseases, diseases of the heart and blood vessels to dental problems. In order to be strong, energetic and healthy and to ensure quality of life, it is essential to have a balanced and regular diet.

Keywords: Diet, Nutrition, Adequate and Balanced Nutrition, Health

Biography:

Nurhayat Atasoy In 20 June 1968 Van was born in Turkey. She completed her undergraduate education in the Department of Chemistry at Van Yüzüncü Yıl University. She completed her master’s and doctoral studies in the field of biochemistry at the same university. She trained many undergraduate, graduate and doctoral students in this field. She is still working as an associate professor at the same university. She has studies on vitamins, hormones, antioxidants, heavy metals and food chemistry, and these studies continue.
Honey is an excellent source of nutrition, and it acts as a natural medicine against many diseases. The presence of an array of bioactive phytochemicals in honey makes it suitable for wide application in foods and pharmaceuticals. Honey is an unique source of natural antioxidant resolving body’s oxidative stress, and act against inflammation. The natural raw honey as well as medical grade honey, honey mediated synthesized silver nanoparticles, and probiotics from honey display broad spectrum antibacterial activity. This communication, based on the published scientific data, updates the application and usage of different honeys in health promotion and disease prevention, which plausibly open a new hope in the field of biomedicine.

**Audience Take Away:**

- Clinical application and nutritional value of honey?
- Honey as anti-oxidative and anti-inflammatory agent?
- Honey against infection and in healing?

**Biography:**

Shyamapada Mandal, Professor, Department of Zoology, University of Gour Banga, India, is interested on infectious diseases, probiotics, and genomics and bioinformatics research. He did pre-PhD, PhD, and post-PhD research under the guidance of Professor Nishith Kumar Pal at Calcutta School of Tropical Medicine, India. He has published 110 articles with seven book chapters. He is life member of IAMM and IASR, India. Seven national academic and research awards have been conferred to him. He has guided 52 post graduate students; supervised three MPhil and three PhD students, and supervising 6 PhD students.
Highly-efficient release of ferulic acid from agro-industrial by-products via enzymatic hydrolysis with cellulose-degrading enzymes: Part I – the superiority of hydrolytic enzymes versus conventional hydrolysis

Vitalijs Radenkovs\textsuperscript{a}, Karina Juhnevica-Radenkova\textsuperscript{a}, Jorenes Kviesis\textsuperscript{b}, Diego Moreno\textsuperscript{c}, Fernando Vallejo\textsuperscript{c}, Dalija Seglina\textsuperscript{a}

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Historically relevant crops Triticum aestivum L. and Secale cereale L. are widely used in the production of bakery products. From the total volume of grain cultivated, roughly 85% is used for the production of flour from starchy endosperm, while the remaining part consisting of 10-15% bran, and 3% of germ is discarded or utilized rather inefficiently. The limited value attached to bran is associated with their structural complexity, i.e. the presence of cellulose, hemicellulose, and lignin which makes this material suitable mostly as a feed supplement, while in food production their use is challenging. Underestimation of bran as a food ingredient brings about a rise in food waste. Based on FAOSTAT data estimated in 2018, wheat and rye bran increase corresponded to 110 Mt and 1.6 Mt, respectively. To valorize these by-products to food and pharmaceutical applications, additional pre-treatment is required. Considering the evidence of the presence of ferulic acid (FA) in plants, a compound in 99% covalently bound to arabinose residues in arabinoxylans via ester linkages and integrated into the cell-wall matrix, biorefinery process using cellulose-degrading enzymes (C-DEs) will afford a selective production of this highly demanded bioactive. The limited information on the recovery of FA from wheat and especially rye bran through C-DEs promoted the design of this work to focus on the evaluation of the release of FA from this material through environmentally-friendly biorefining process.

Keywords: Recovery; biorefining; valorization; by-products; ferulic acid; enzymatic hydrolysis; dietary fiber

Biography:
Vitalijs Radenkovs is a Post Doc leading researcher position in Institute of Horticulture, LatHort, Dobele, Latvia
Acylated Ghrelin, Obesity and Insulin resistance are associated with depression severity in Postmenopausal Women

Maria Fernanda Naufel¹, Amanda Paula Pedroso¹, Lila Missae Oyama¹, Mônica Marques Telles¹, Helena Hachul²,³, Eliane Beraldi Ribeiro¹∗

¹Departments of Physiology Universidade Federal de São Paulo (UNIFESP), São Paulo, SP, Brazil
²Departments of Psychobiology Universidade Federal de São Paulo (UNIFESP), São Paulo, SP, Brazil
³Departments of Gynecology, Universidade Federal de São Paulo (UNIFESP), São Paulo, SP, Brazil

Increased rates of obesity and mood disorders has been evidenced during postmenopause. We have previously shown increased depression and anxiety scores in postmenopausal overweighted women. Although an involvement of ghrelin in mood modulation has been suggested, its role is still ambiguous and has not been established in postmopause. The association between total and acylated ghrelin levels with depression and anxiety symptoms in postmenopausal women was investigated in the present study. Fifty-five postmenopausal women with depression symptoms (age 50-65), who were not in use of hormonal or antidepressant treatments, were included. Depression and anxiety scores (Beck’s Depression (BDI) and Anxiety (BAI) Inventories, Patient Health Questionnaire-9 (PHQ-9)), bioimpedance anthropometry, blood biochemical and hormonal levels, were determined. Postmenopausal women were then allocated into three groups according to the BDI classification: mild (n=26), moderate (n=22) or severe (n=7) depression. Data were analyzed by either Anova (and Tukey post-hoc) or Kruskall-Wallis, for p<0.05. Pearson’s correlation and linear regression models were applied. Severe depression group had higher total and acylated ghrelin levels than those of mild depression. Multivariate regressions showed that acylated ghrelin and BMI were positively associated with BDI, while acylated ghrelin and HOMA-IR were positively associated with PHQ-9. BAI was positively associated with WHR. The results shows that the higher the acylated ghrelin levels, the BMI and the insulin resistance, the more severe are the depression symptoms in postmenopausal women. This is the first study showing an important association between acylated ghrelin levels and the severity of the depression symptoms in postmenopausal women. Further investigations are warranted to assess if the acylated ghrelin levels may be used as a criterion describing depression prognosis as well as treatment effectiveness in postmenopause.

Keywords: ghrelin, postmenopause, depression, anxiety, mental health, abdominal obesity, insulin resistance.

Biography:

Maria Fernanda Naufel is a Postdoctoral researcher / Departamento de Fisiologia, Programa de Pós-Graduação em Nutrição – Universidade Federal de São Paulo – UNIFESP/EPM . she is graduated as a Dietitian, specialist and master at Nephropediatry and PhD at Nutrition from Universidade Federal de São Paulo (UNIFESP). Research experience focusing on clinical nutrition, acting on the following subjects: gut hormones, obesity, sleep and mood disorders, nephrology and postmenopause . At the moment works as a postdoctoral researcher at the Pós-Graduação em Nutrição-UNIFESP. Current project: The influence of obesity on sleep and mood disorders in postmenopausal women.
Optimization of drum drying processing parameters for production of asam pedas culinary powder using response surface methodology

Norzaleha Kasim*, Noor Zainah Adzaly, Siah Watt Moey, Mohd Fakhri Hashim
Food Science & Technology Research Centre, Malaysian Agricultural Research & Development Institute, Malaysia.

Asam Pedas is very popular spicy traditional gravy among Malaysian. However, its preparation was quite tedious and involved many steps from peeling ingredients, blending and cooking. Therefore, there were different brands of Asam Pedas paste in Malaysian market as a convenience product for busy and modern lifestyles. This current study was aim to optimize the production of Asam Pedas powder from its paste to have longer shelf life, convenience storage and also for culinary cube application using a laboratory scale double drum dryer. The effect of two parameters namely; steam pressure and ratio of drum rotation speed on physical and organoleptic properties of the powder were investigated by response surface methodology (RSM). The results indicated that both parameters significantly (p<0.05) affected the colour, bitterness and overall acceptability of the powder. Second-order polynomial model was fitted for the significant responses. Increasing the steam pressure will reduced the score of overall acceptability from hedonic test and Hunter L, a, b values while enhanced the bitterness. The optimum drum drying process performed at 5.0 bar of steam pressure with 2.00 ratio of drum rotation speed was recommended to produce good quality of Asam Pedas culinary powder.

Keywords: Asam Pedas, Culinary Powder, Drum Drying, Drum rotation speed, response surface methodology, Steam Pressure.

Biography:

Norzaleha Kasim has been in food science & technology field for more than 15 years. After graduating my Bachelor degree in Food Science & Technology, I worked at multinational company in food production line. However, due to my interest in research & development of food product, I continue my Master Degree in Food Science at Universiti Putra Malaysia. Then, I joined Malaysian Agricultural Research & Development Institute (MARDI) as research officer in 2014. Till now, I’ve been involved in more than 10 projects in developing food products such as beverages, snacks, confectioneries, culinary paste and powder.
Technology of Nutmeg Essential Oil Microcapsules by Extrusion method

Inga Matulyte¹,², Giedré Kasparavičienė ¹, Jurga Bernatonienė ¹,²
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²Lithuanian University of Health Sciences, Institute of Pharmaceutical Technologies, Kaunas, Lithuania

Essential oil is an unstable material which loses active substances when exposed to the environment. Microencapsulation by extrusion is one of a few methods to save volatile compounds. The purpose of this study was to protect nutmeg essential oil’s volatile compounds. Sodium alginate, nutmeg essential oil, sucrose esters, calcium chloride were used as materials and medical syringe as a device in microparticles technology. Nutmeg essential oil emulsion was prepared as follows: 4% of sodium alginate aqueous solution (5 g) diluted with 10 mL of water, an emulsifier (0.2 of 0.5 g) and lastly, nutmeg essential oil (1.5 g) were added. A syringe was filled with manufactured emulsion and the microcapsules were formed into a crosslinker solution (5% and 2% calcium chloride). Physical parameters of nutmeg essential oil loaded microcapsules were measured: diameter of wet and dry microcapsules, force for crushing (firmness), and encapsulation efficiency. Microcapsules of unstable emulsion (0.2 g of sucrose esters) had better essential oil encapsulation efficiency, approximately 103.37±4.92% vs. 86.23±2.86% of stable emulsion (encapsulation efficiency was carried out after 48 h of manufacturing). Diameter and firmness of nutmeg essential oil loaded microcapsules with 0.5 g sucrose esters was higher than 0.2 g (17% and 15.5%, respectively). Microcapsules prepared in 2% of crosslinker solution were smallest, softer and the encapsulation efficiency was higher. After this study, the physical parameters of nutmeg essential oil loaded microcapsules were found to depend on emulsion stability, emulsifier amount, and crosslinker concentration.

Keywords: nutmeg essential oil, extrusion, microcapsules, encapsulation efficiency

Biography:

Inga Matulyte studied Pharmacy at the Lithuanian University of Health Sciences (LUHS), Kaunas, Lithuania and obtained her Master’s Degree in 2017. She started PhD studies in 2018 and joined the research group at the Department of Drug Technology and Social Pharmacy, LUHS, head of department Prof. Jurga Bernatoniene. In 2019, she joined the research group in the Institute of Pharmaceutical Technologies as a junior researcher, LUHS. Inga specializes in the technology of pharmaceutical forms (solid, semi-solid, liquid forms).
Biotransformation of 5-caffeoylquinic acid by mono- and co-cultures of gut bacteria

Gentiana Balaj1*, Zohreh Tamanai-Shacoori2, Solenn Ferron1, Aurélie Sauvager1, Isabelle Rouaud1, Latifa Bousarghin2, Sandrine David-Le Gall2, Sylvain Guyot3, Dashnour Nebija4, Sophie Tomasi1, Marie-Laurence Abasq1

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Polyphenols, naturally occurring, secondary plant metabolites, have drawn increasing attention from the scientific community due to their ability to lower oxidative stress involved in many pathologies and on their positive effects in modulation of redox cellular signalling pathways1. However, since they are characterized by a low bioavailability and given the crucial role of microbiota to generate bioavailable and bioactive metabolites2, further insights are focused nowadays on their gut-derived metabolites as promising approach to prevent and attenuate neurodegenerative diseases3.

5-Caffeoylquinic acid (5-CQA) known as chlorogenic acid, a dietary phenolic compound, has already shown neuroprotective properties4 and some of its microbial gut-derived metabolites are already known5. We focus our work in the bioconversion of 5-CQA by intestinal bacterial species; *Bifidobacterium longum* (Actinobacterium), *Bacteroides fragilis* (Bacteroidetes) and *Lactobacillus reuteri* (Firmicutes) in mono and co-cultures. The extracts after incubation of bacteria with 5-CQA were analyzed by LC-MS/MS and particular attention has be paid on oxidized compounds which could arise from redox pathways. In addition, an electrochemical strategy was adopted to generate oxidized compounds of chlorogenic acid in order to characterize and compare their mass profiles. A LC-MS/MS molecular networking through GNPS platform6 was also employed to identify the biotransformed metabolites.

In contrast to *B. fragilis* and *B. longum*, *L. reuteri* has shown capacity to biotransform 5-CQA into e.g. Caffeic acid (CA) and 3-Hydroxybenzoic acid (3-HBA). Nevertheless, preliminary experiments in co-cultures exhibited an interesting pattern in bioconversion of 5-CQA.

References:

Keywords: Polyphenols, Chlorogenic Acid, Bioconversion, Gut-Microbiota, Neurodegenerative Diseases, Electrochemistry.

Acknowledgments: Campus France for the grant funding of Gentiana Balaj

Biography:

Gentiana Balaj has received a Pharmacy degree from University of Prishtina in 2016, and is currently a Ph.D. student at the University of Rennes 1 since 2019.
Diversity and stability of lactic acid bacteria and yeast in dense rye sourdough while continuous propagation

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Traditional biotechnology for the bread production is based on sourdough, which is a complex microbial ecosystem mainly constituted by Lactic Acid Bacteria (LAB) and yeasts. The use of pure cultures of LAB and yeasts for starter gives sourdough with desired consuming properties, taste and aroma characteristics. In present work, the changes of starter microorganisms was established during long-term propagation (back-slopping) of sourdough. The bacterial and fungal metagenome in rye-based sourdough was tracked versus time by 16S rRNA and ITS gene pyrosequencing. Viable plate counts of presumptive LAB and yeasts, LAB/yeasts ratio, and acidification rate demonstrated microbial and biochemical changes in the sourdough. Initial flours were mainly contaminated by metabolically active proteobacteria families Enterobacteriaceae and Pseudomonadaceae (genus Pseudomonas) and fungi of the genera Alternaria (26.26%), Fusarium, Dothideomycetes anf of the orders Capnodiales, Pleosporales, Dothideales. An extremely low content of LAB of the genus Lactobacillus (0.1%) was found in rye flour, and yeast was not detected at all. In sourdough prepared with starter cultures of LAB and yeasts after 1 day of propagation, flour microbial population was almost completely inhibited except for the Enterobacteriaceae (15%) and fungi Alternaria– (11%). LAB and yeasts were almost exclusively dominative microorganisms. Studies of the microbiota of thick rye starter culture have shown that the species composition of lactobacilli significantly changed during the process of starter culture, which affected the quality indicators of starter cultures. The content of lactic and acetic acids during long-time sourdough fermentation changed significantly along with the change in the type of LAB. The C. milleri yeast strain was retained throughout the entire period of sourdough propagation. Funded by Russian foundation for basic research, project № 19-016-00085.

Keywords: Lactic Acid Bacteria, Yeast, Sourdough, Microbiome, Metagenome, Rye Flour.

Biography:

Pentosan characteristics of different Indian wheat varieties and their relationship to Bread-making quality

Hemalatha M.S* and Prasada Rao UJS
CSIR-Central Food Technological Research Institute, Mysuru, India

Wheat flour contains 2-3% of pentosans and are reported to influence quality of bakery products. They play key role in dough rheology, bread quality by increasing the bread volume and textural properties of crumb due to viscosity, water binding and oxidative gelation. The study was done to test the suitability of Indian wheat varieties for breadmaking and to correlate the pentosans relativity to bread quality. Eight different wheat varieties (GW322, HD2189, HD2501, HD2781, K9644, MACS2496, NI5439 and NIAW34) grown at a single geographical location were procured and milled to refined wheat flour. Wheat flour were evaluated for total protein, total sugars, damaged starch, Ash, total starch, falling number and SDS sedimentation. Rheological experiments like farinograph, extensograph and amylograph were done. Gas liquid chromatography were done for wheat flour and Pentosans isolated from wheat flour by derivatising to alditol acetates. Test baked bread prepared were subjected to objective and subjective sensory evaluation. The damaged starch in wheat flour ranged from 7.0 -11.1%, falling number from 604-1109 sec and total starch from 75.2-83.8%. Rheological experiments showed water absorption was high ranging from 59.8 to 68.4% with higher resistance to extension with a value of 770 BU and highest peak viscosity of 850 BU. The arabinose content ranged from 0.71% to 13.2% and xylose content ranged from 1.42% to 16.1% in wheat flour. The arabinose content ranged from 21.44% to 74.11% and xylose content ranged from 21.8% to 71.9% in isolated pentosans of respective wheat flours. The objective and subjective sensory evaluation showed that higher arabinose/xylose ratio had better bread quality.

Keywords: Bread, Pentosans, rheology, isolation

Biography:

Hemalatha M.S. is a Assistant Professor at Department of Food Science and Nutrition, Karnataka state Open University, Mukthagangothri, Mysuru. She has completed Ph.D. from CSIR-Central food Technological Research Institute, Mysuru. She was awarded Research fellowships from Bhaba Atomic Research Centre and also from Department of Science and Technology. She has more than 15 years of research and teaching experience. She has published many research papers in peer reviewed journals and authored Book Chapter. She has presented research abstracts in many National and International Conferences and also been awarded for Best Research Papers.
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DAY 2 KEYNOTE SPEAKERS
Clarifying the minefield of ever-changing nutrition advice

The scientific, professional and lay literature provide confusing messages regarding what should constitute healthy eating for the population at large and appropriate dietary advice for those with conditions such as diabetes for which medical nutrition therapy plays a key role. What should be regarded as appropriate amounts and types of fat and carbohydrate and how to translate the science of nutrition into appropriate food choices are issues which confront healthy individuals and patients and those who advise them on a daily basis. The aim of the Webinar is to provide guidance for nurses who, regardless of their area of speciality, are often in the front line and are expected to be able to provide advice regarding one of the most important determinants of human health.

Biography:

Jim Mann, CNZM, PhD, DM, FRACP, FRSNZ has been Professor in Medicine and Human Nutrition at the University of Otago and Consultant Physician (Endocrinology) in Dunedin Hospital for the past 32 years. Previously he lectured at the University of Oxford and was a Physician in the Radcliffe Infirmary. He is Director of the World Health Organisation (WHO) Collaborating Centre for Human Nutrition, the ‘Healthier Lives’ National Science Challenge and the New Zealand-China Non Communicable Diseases Research Collaboration Centre and; co-Director of the Edgar Diabetes and Obesity Research Centre (EDOR). He is principal investigator for the Riddet Institute, a national Centre of Research Excellence at Massey University.
Appraisal of maize as a nutraceutical: Prospects and Challenges

The world is facing multiple challenges of production and quality, including the need for diversification in certain areas. Maize is a promising crop that can cater to such multiple needs. Maize is an important crop in many parts of the world, and is suitable for cultivation in many agro-ecological zones. Understanding of maize biology over the years has led to directed efforts in developing varieties that are nutritionally as well as agronomically superior. Breeding efforts have resulted in newer varieties of maize, that are richer in nutritional quality. Emphasis has been given on traits like high protein quality, low phytic acid, enhanced levels of provitamins etc. There is also a need to link growers and industry, including consumer awareness for increased use of maize as food. To harness the full potential of maize, sustainable value chains that are remunerative to diverse range of range and industry are needed. The increasing use of advanced technologies offers new dimensions in combining the desired features in one cultivar. In this context, recent scientific developments in the area will be discussed.

**Keywords:** Maize, High nutrition, Quality Protein Maize, Low phytic acid, Advanced breeding technologies

**Biography:**

Alla Singh is working as a Scientist (Agricultural Biotechnology) at the ICAR-Indian Institute of Maize Research, Ludhiana. He is currently working on the evaluation of potential of maize in the bio-based industry. He is also working to develop rapid tests for differentiating quality protein maize (QPM) from normal maize, to integrate it into the market chain for increased farmer remuneration. He has worked on the computational prioritization of gene targets for low phytate maize, which is expected to deliver low phytate phenotype without negative pleiotropic effects, known in case of natural null mutants.
Concept of turning points and improvement in visceral organ function during and after 14 days’ prebiotic-assisted total dietary deprivation in human

Life time fasting has demonstrated to be a robust lifespan extension in yeast and C. elegans. Although prolonged fasting in human have been evaluated in history, there were long-term safety and practical concerns regarding with these regimens. We have applied a novel prebiotics-assisted fasting approach for 7–14 days’ continual dietary deprivation (CDD) regimen, which were designed as taking prebiotic and mineral at three meal times daily to protect the gut from potential damage by intestinal flora. Bioelectrical and biochemical results indicated significant reducing in both lean and fat mass at 7D CDD, while lean mass (protein level) remained stable at 14D CDD. In addition, we found that lab-biochemistry results, which showed either significant increasing or reducing at 7thD CDD, would turn to be an opposite direction toward a satiation pattern. We defined this phenomenon as turning point (TP). Among the factors tested, some pathological related factor levels such as creatine kinase (CK), alanine transaminase (ALT) glutamic oxalacetic transaminase (GOT) or uric acid (UA) baselines were significantly increased at 7thD of CDD but started to reduce at 14thD of CDD. The blood levels remained lower than individuals’ baselines even after 3–6 months’ refeeding. Our results indicated that, when the CDD applied less than 7D, fasting related autophagy have utilized reserved energy of the system and caused a release of harmful factors in blood. Following a longer term of CDD treatment (14D), while ketone body metabolism has been established, the system started to facilitate the regeneration of damaged tissues and showed lower in CK, ALT or GOT than baseline levels even after refeeding. Our results indicated a novel health improvement strategy in preventing metabolic syndrome in clinic.

Keywords: dietary deprivation, prebiotic, turning point, creatine kinase, alanine transaminase, metabolic syndrome

Biography:
Garrick D Lee is a Professor in Molecular Gerontology Study in Aging and anti-aging approaches. Recent research interest is in dietary regulation in metabolic syndrom, obesity, and anti-cancer approaches.
Josef Illek and Dana Kumprechtová

1University of Veterinary and Pharmaceutical Sciences Brno, Department of Large Animal Clinical Laboratory, Czech Republic
2Institute of Animal Science Prague, Department of Farm Animal Nutrition, Czech Republic

Evaluation of Oxidant/Antioxidant status, Metabolic profile and Milk production in Cows with Metritis

The time around calving is challenging for the dairy cow because of significant morphological, metabolic and immunological changes in her body. The prevalence of metritis and endometritis is high in Czech dairy herds, and therefore to implement efficient preventative measures. The aim of the study was to evaluate the oxidant/antioxidant status in 10 cows with metritis and 10 healthy cows in a high-yielding (10,200kg) Holstein herd. The multiparous cows were subjected to clinical and blood chemistry monitoring from 5 to 15 days postpartum. Metritis diagnosis was based on rectal palpation, presence of altered vaginal discharge and increased body temperature (>39.5°C). Between 7 and 15 days postpartum blood samples were taken from the metritic and control cows to measure serum levels of calcium, NEFA, BHB, vitamin A, vitamin E, betacarotene, haptoglobin, activities of AST, GPx, total antioxidant capacity (TAC), and milk samples to measure somatic cell count (SCC). Compared to the healthy cows, the metritic cows showed lower serum levels of calcium (2.13 vs. 2.30 mmol/L), vitamin A (0.52 vs. 1.06 µmol/L, P<0.001), vitamin E (3.72 vs. 5.97 µmol/L, P<0.001), betacarotene (3.58 vs 6.62 µmol/L, P<0.001), blood GPx activity (896 vs. 935 µkat/L) and TAC (0.768 vs. 1.01 mmol/L, P<0.001); and higher levels of serum NEFA ( 0.90 vs. 0.4 mmol/L), BHB( 1.02 vs. 0.72 mmol/L), AST ( 1.65 vs. 1.5 ukat/L) and haptoglobin ( 3.30 vs. 0.71 g/L, P<0.001). The metritic cows had significantly lower average daily milk yield (31.7 vs. 49.2 kg, P<0.001) and higher milk SCC (162,000 vs. 103,000 cells/mL). The results indicated impaired metabolism, higher oxidant status, vitamin A, E and betacarotene deficiencies and reduced milk yield in metritic cows. 

Key words: dairy cows, metritis, oxidative stress, antioxidants
Biography:

Josef Illek is Associate professor at University of Veterinary and Pharmaceutical Sciences Brno, Czech Republic. He graduated from the Veterinary faculty Brno in 1969 as MVDr. Since he graduated he was working at University of Veterinary and Pharmaceutical Sciences Brno as Assistant Professor at the Institute of Pathophysiology (1969-1970), Assistant Professor at the Clinic of Ruminant Diseases (1971-1986), Associate Professor at the Clinic of Ruminants Diseases (1987-2009). Since 2010 he has been working as Head of Large Animal Clinical Laboratory. During his work at the clinic he was educating at the clinic. He had 10 successfully completed leadership of dissertations thesis, and leadership of 10 dissertations thesis that are still in the process along with leadership of 15 completed diploma thesis. His research is focused on a study of metabolic disorders in cattle, small ruminants and development of laboratory diagnostics and clinical biochemistry. He has 95 scientific publications in journals with IF and 260 publications in professional journals. He has also successfully completed series of research projects oriented on ruminant problematics. Over the years he held numerous lectures for veterinary and professional agricultural public. He is a member of many professional associations, scientific boards, editorial boards and doctoral committee. Since 2008 he has been President of the Czech buiatric association.
Food production – Retail – Consumption, do we need new paradigms? A different approach to labelling and rework

A glimpse at the food industry, retailers and consumers relationship, through the aspects of labelling and rework at present times. How the actual legislation in relation to important aspects like labelling has been working, should we continue to uphold this paradigm or should it be revisited and updated? Do we need a new different one? The Food industry produces to satisfy the demand of the consumers and the retailers are the interface in this relation producer – consumer; could we make this process more efficient so less food goes to waste? through a different approach in the way the products are labelled and packed? Is it possible to reduce the amount of that goes to waste at retailers by a different approach to rework where suitable

Biography:

Edgardo Carrillo Cabrera is a Food science and technology professional, with management experience and more than 16 years of work in the Food Industry. Dairy manager (Terregio cheese factory, Bedfordshire UK), Quality manager (Premier Foods, Sudan and Nestle?, Cuba), Quality technologist for Mars Chocolate Drinks and Treats Europe (UK), Quality technician for Muller Dairies (UK) and Food Researcher at the Food Research Institute (Dairy plant, Cuba). Main qualifications: Food engineering (Master’s degree), Specialist in dairy products technology (Cheese Technology), BRC (Food safety and third-party auditor), Food industry management (Diploma), Researcher and Chemical engineer. Areas of expertise: Cheese manufacturing, Dairy and dairy derivatives technology, Food science and technology, Food quality management systems (Nestle, Mars and BRC)
Food as Medicine

Ancestrally and indigenously food has been used since the beginning of times for its medicinal qualities. Current culinary medicine applications recognize the medicinal qualities of foods. Phytochemicals, functional foods, and culinary practices all seek to merge the understanding of how to apply food as medicine within current times and towards current chronic disease risks. Fruits, vegetables, plants, herbs, spices, and fungi all contain potent phytochemicals known to impact inflammatory reactions and aid immune system responses. Learning ways to incorporate using food as medicine into daily living can aid not only in prevention but foster efficacy in utilizing culinary medicine applications. As current research validates ancestral wisdom, food as medicine offers an opportunity to reconnect with prevention, culinary applications, and personal efficacy.

Keywords: Culinary Medicine, prevention, Chronic disease, obesity, diabetes, cardiovascular disease, ancestral ways, herbalism, food as medicine

Biography:

Aubrey Mast is a herbalist, plant-based chef, holistic health coach and educator. Aubrey Mast, MPH is an lecturing professor for the University of North Carolina Asheville. Her interests lie in nutrition research, understanding inflammation, and using food as medicine in the prevention of disease. Aubrey is currently working currently working on her PhD in Integrative Nutrition and its connection to Mind Body Medicine. Aubrey received her B.S. in Health and Wellness Promotion from the University of North Carolina at Asheville. Her Masters is in Public Health, concentrating in nutrition from Walden University. Her research was on the role of childhood nutrition and the impacts of artificial food dyes
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DAY 2 SPEAKER PRESENTATIONS
The Covid-19 crisis and the effect of measures taken to reduce its impact on health systems have had major repercussions on food security. These repercussions have raised the alarm about the prospects of a global food crisis. To find short- and medium-term solutions we need to consider what triggered the alarm; and to analyze the repercussions of measures taken to contain Covid-19. An analysis is needed at local, national and regional levels - and also by function. Key areas impacted by the Covid-19 crisis and the dedicated response include various sub-sectors of the agricultural sector; agricultural value chains; food and farming, systems. The impact of the Covid-19 crisis on agricultural prices is complex, and generally associated with speculation. The impact is strong in the agricultural trade, whether focused on supplying urban markets or oriented towards exports. The result is a steep decline in farmers’ revenues. In the rural economy, restrictions on mobility are the main reason for the negative repercussions of the COVID-19 crisis. These restrictions hinder transport of agricultural products to key trading and commercial hubs; the supply of and access to agricultural inputs; seasonal “transhumances”. All these challenges leave rural populations more vulnerable to attack from other hostile forces, such as the Covid-19 crisis. Their capacity to be resilient is likely to be already weakened.

Keywords: Food Security, Mobility, Rural Markets, Vulnerability

Biography:

Francois Grunewald (Engineer in agriculture science and rural economy) is worked for more than 35 years in rural development, food security, humanitarian aid an crisis management with NGOs, UN agencies, ICRC and main bilateral and multilateral donors. He wrote numerous articles and coordinated number of books. He teaches in several universities in Europe, in USA and Canada.
Different diet programs and mobile apps are available to assist weight loss efforts. These interventions are dependent on an individual’s willingness and motivation to self report their data. These approaches do not make use of molecular information in providing the feedback to its users. To enable a more quantitative approach, we investigated the use of molecular information in combination with a digital platform for dieting. Here, we studied the three biomolecules, insulin, lactate and Angiotensin Converting Enzyme, as potential bio-markers to provide feedback on an individual’s lifestyle. In this study, 52 participants who were 18 years or older were recruited. They were asked to omit one main meal from the usual three-meal routine. Daily caloric intake was restricted to ~1200KCal with one optional snack of ≤250KCal. An in house mobile health platform (personalhealth.warwick.ac.uk) was used to maintain diaries of food intake, weight, urine collection and volume. Skipping one of the main meal of the day resulted in weight loss in contrast to 3-meal control days regardless of the meal that was skipped, breakfast, lunch or dinner (p < 0.001). Total insulin and lactate values were significantly different between healthy and obese groups at p = 0.01 and 0.05 respectively. Following a day of dieting, urine ACE levels negatively correlated with weight loss (p = 0.015). This reduction was more robust in BMI > 25 group (p = 0.0025). In a proof of concept study, we showed that insulin, ACE and lactate values in urine correlate with weight loss, making these molecules potential candidates for quantitative personalised feedback on food intake behaviour to people undergoing dieting.

**Keywords:** Dieting, Personalised feedback, lifestyle, biomarkers

**Biography:**

Shilpa Tejpal is a Research Associate at Imperial College London. I have an undergraduate engineering degree in Biotechnology from Jaypee University of Information Technology, India. I was awarded Vice-Chancellor’s gold medal for being the top student in the Department of Biotechnology. I was later awarded Warwick-India scholarship by University of Warwick (UoW) to pursue MSc in Biotechnology, Bioprocessing and Business Management. I went on to do PhD Medical Sciences at UoW through Chancellor’s International Scholarship. My research interests include integration of molecular information with technology for a personlised feedback. I am also interested in investigating association between nutrition and gut microbiome.
Mindful eating, in the most simple words is eating with full awareness and attention to what’s on your plate and savouring every bite. Often we are in a hurry, or busy watching television and just gulp down the food, in giant sized bites mindlessly. Simply following the practise of 3 S’s i.e sitting down, chewing the food slowly (32 times) and silently or mindfully. As kids you may have always heard your elders asking you to, chew your food 32 times! As I was researching more about this, it blew my mind to know that 70% of the digestion of carbs, which is our primary source of energy, happens in the mouth. So if we don’t chew enough, the carbs don’t get digested as they should and they fail to get energy from the meal, even though you may be eating the right type of food. Also, the saliva is slightly alkaline with a ph of just above 7, so whatever you chew goes into the stomach in a more alkaline state and the stomach wouldn’t have to produce more acid. Chewing your food, mindfully would give you overall deep satisfaction.

Nutrition and Health: Its quite surprising to know how much we eat in a day. It is around 2 kgs which goes through the opening we call the mouth. If you calculate, this rounds up to 60 kgs a month which is a tonne a year. The diet that helps us to reduce weight in the short run needs to be the same diet that creates and maintains health in the long run. We can control the cause. It is right at the end of our fork. Our whole quality of life is dependent on how and what we eat and nourish our body with. When you start eating mindfully, you would observe that these changes start happening on its own. You take time to observe what you are putting into your body and how it makes you feel, if you allow yourself to do so by switching off the television or staying away from the mobile phones while you eat your meal. Furthermore, discussing about the importance of Sleep. All healing of our body only happens in a state of complete rest. No matter how much organic food you grow or get the best treatment in the world but the body only heals and repairs itself in a state of complete rest i.e either through deep meditation or sleep. Sleep Deprivation makes you dumb! There is a liquid in our brain called the Cerebrospinal fluid (CSF) which surrounds the brain, into many folds and flushes out toxins and unwanted substances. Amyloid beta is one particular toxic protein which accumulates in the brain. It is this protein that is responsible for degenerative brain diseases like Alzheimer’s and needs to be eliminated. For example, make a fist and immerse it in water. Very little water will be able to seep in the fist. For the water to go inside, fingers need to loosen up, similarly for the CSF to reach deeper parts of brain and flush put toins, it needs to reach deeper parts of brain. The space between tissues of our brain increases by 60% when we sleep, which allows the CSF to get inside and remove the trash. Sleep Deprivation makes you fat. There are two hormones called Leptin and Ghrelin which are known as hunger hormones. Leptin is manufactured by fat cells and decreases appetite. Ghrelin is the hormone which regulates our body weight and makes us feel hungry. Less sleep means less leptin and i.e more ghrelin and more hunger. Thus, sleeping less is also related to the incidence of obesity!

Keywords: Nutrition, Mindful Eating, Sleep, Hunger, Mindfulness.
Biography:

Malvika Gupta is a aspiring Nutritionist currently in the second phase of my Masters. I’m also a Yoga and Meditation certified coach and have been teaching people through online classes, ever since the lockdown began. I am also a part time volunteer with the Art of Living organisation and organize and coordinate for the ‘Youth Empowerment Seminars’ and the ‘Online Breath and Meditation Workshops’, which are known to help people with stress management, life skills and general self help practises through yoga, pranayama and meditation. I have also volunteered with Teach for Change organisation, where we were required to teach spoken English to kids at the Government Schools. I have worked as a counselor at a 15 day rural camp with Voice4girls, and have also worked as a camp counselor at kids’ adventure camps organised by Outlife. I’ve done a 20-Hour Yoga Intern (Common Yoga Protocol) training Program with the Kaivalyadham Yoga Institute (Lonavala). I have also done a certification on Sleep Health. I am currently working with my research, which is based on Mindful eating amongst various Fitness Practitioners. I strongly believe in this practise of mindful eating, ancient ayurvedic techniques, healing foods and lifestyle practises and also see myself helping my clients with the same approaches in the near future.
Anti-Proteinase and Antioxidant properties of cold pressed Prunus Domestica Kernel Oil

Saoussem Harrabia, Sakri Hamza, Azza Ferchichi, Hayet Fellah

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Recently, there has been an increasing interest for the oils obtained from non-conventional plant seeds, due to their valuable functional compounds with various therapeutic effects. The present study aimed to determine the anti-proteinase and antioxidant effects of prunus domestica seed oil. The cold pressed oil was obtained by pressing plum seeds using a screw expeller. GC-FID and HPLC were employed to determine fatty acid and tocopherol profile, respectively. The anti-proteinase effect of oil samples was evaluated by determination of the percent inhibition of trypsin action. The DPPH radical scavenging assay was used to determine the antioxidant activity of the tested oil at different concentrations. Three tocopherol homologues were detected in the tested oil (δ- (24.28%), α- (32.35) and η- tocopherol (43.38%)). The dominant fatty acids were oleic (57.53%) and linoleic (32.57%) acids. The high amounts of those bioactive compounds are of importance in nutritional and pharmaceutical applications. The concentration dependent (0-50 μg/mL) increases of antioxidant activity of oil was observed. The tested oil showed important antioxidant capacity with an IC₅₀ value of 55 μg / ml in comparison with the standard quercetin (IC₅₀ =63 μg / ml). At the concentration of 50 μg/mL, the oil was also found to inhibit 92.3% of proteinase activity. These important proprieties of plum oil may be due to its high content of η-tocopherol and oleic acid. Proteinase inhibitors have a potential therapeutic value as anti-inflammatory agents. Therefore, more in vivo and in vitro studies are needed in order to potentially exploit plum oil as natural anti-inflammatory and antioxidant agent for medicinal health, functional food, and nutraceuticals applications.

Keywords: plum seeds, cold pressing oil, proteinase inhibitors, antioxidants.

Biography:

Saoussem Harrabia obtained in 2003 her Master’s degree in Biochemistry at the Faculty of Science of Tunis (Tunisia). She earned her PhD from the University of Tunis El Manar in 2008. During her doctorate, she gained great experience in analytical techniques like HPLC-MS/MS and GC-MS in the Chemistry Department, University of Ottawa. In 2013, Dr. Harrabi joined the Faculty of Medicine of Tunis, University of Tunis El Manar as assistant Professor in Biochemistry. Her current research program is focused on the natural lipids with antioxidant and anti-inflammatory the potential.
Extracted Total Carotenoids from Sporidiobolus pararoseus Relieve Acute Lung Inflammation Induced by Cigarette Smoking in Mice

Margaret Zaitoun\textsuperscript{1,2,3}, Qing Feng\textsuperscript{1}, Yahui Guo\textsuperscript{2}, He Qian\textsuperscript{2}

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\textsuperscript{3}Faculty of Health Science, Al-baath University, Homs, Syria

Cigarette Smoke (CS) has been correlated with increased susceptibility to respiratory infections and it is a major risk for acute lung inflammation and Chronic Obstructive Pulmonary Disease (COPD). Carotenoids have enormous applications in fields of industry, medicine and health due to their properties such as color and functional activities like antioxidant, anticancer and anti-inflammation. Carotenoids, extracted from Sporidiobolus pararoseus, have antioxidant, antidiabetic and antitumor effects. These carotenoids have a similar structure to lycopene, which is demonstrated effective in the treatment of lung inflammation and COPD. In our study, Sporidiobolus pararoseus cells were broken and total carotenoids were applied to a silica gel column to separate and purify these pigments. Forty-eight C57BL/6 male mice were randomly divided into 6 groups, exposed to ambient air or CS and treated with vehicle, lycopene or total carotenoids at different doses (9, 12, 18 mg/kg body weight). In groups treated with total carotenoids, especially at the highest dosage (18 mg/kg), the results showed decrease in the high levels of MDA and the activities of CAT, SOD in lung samples, as well as TNF–α and IL 6 levels in lungs and Bronchoalveolar Lavage Fluid (BALF). In addition, it decreased nitrite content and MPO activity in BALF, restored the level of GSH in lung samples and attenuated the morphological changes in the lung tissues. The highest dose of total carotenoids showed a stronger effect than lycopene. These results demonstrated that total carotenoids from Sporidiobolus pararoseus have effective functions for acute lung inflammation induced by cigarette smoke, which suggested a possible positive intervention for the treatment of COPD.

Keywords: Sporidiobolus Pararoseus, Total Carotenoids, Acute Lung Inflammation, Cigarette Smoking.

Biography:

Margaret Zaitoun is a PhD student in Nutrition and Food Hygiene, at Nanjing Medical University (China) under the supervision of Prof. Qing Feng. I joined the research group with prof. He Qian and Yahui Guo in Food science and technology department, at Jiangnan University (China) then i got master’s degree in 2019.I got my bachelor degree in Health Sciences/Nutrition at al Baath University (Syria) in 2010 and hired as teaching assistant. I attended several forums in Nanjing, China and i published various articles.
Introduction to Culinary Medicine

Michael S. Fenster
Professor of Culinary Medicine, Kansas Health Science Center, USA
Professor of Culinary Medicine, University of Montana, USA

Since the inception of the first national dietary guidelines recommendations introduced in the United States roughly a half-century ago, and followed shortly thereafter in the United Kingdom, there has been a worldwide increase in chronic disability and disease associated with dietary practices. Incidence and prevalence of conditions like obesity and diabetes continue to skyrocket across the globe. Not one country that is seen an increase in its population’s rise in obesity has been able to reverse that trend with current approaches. In the United States, conflicting data has led to recommendation reversals, contradictory advice, and generalized confusion amongst the public at large. It is clear the current practices, recommendations, guidelines, and algorithms require a new perspective and method of engagement. Culinary Medicine is an evolving discipline that is a result of the union between The Culinary Arts and The Medical Sciences. At the University of Montana (Missoula, Montana, USA) Culinary Medicine is defined as:

The multidisciplinary application of evidence-based decision making in the selection of ingredients and techniques used in preparing foodstuffs with a goal of achieving and maintaining health and wellness through an optimized food experience.

Inclusive of the traditional nutritional sciences, Culinary Medicine expands the horizons and applicability of pertinent data through incorporation of both basic and applied sciences. In a nod to The Culinary Arts, Culinary Medicine seeks to establish a healthful lifestyle approach that is sustainable for the individual and planet through the construction of comestibles that please individual palates. In a nod to the Medical Sciences, the ingredients and preparatory techniques must be crafted in a way that promotes long-term healthfulness and wellness in accordance with a preventive medicine approach.

Keywords: Culinary Medicine, Chronic Disease, Obesity, Diabetes, Cardiovascular Disease, Culinary Arts

Biography:

Michael S. Fenster is one of less than twenty physicians worldwide who hold both culinary and medical degrees. He is the only Interventional Cardiologist and Professional Chef to do so. He is also the only cardiologist with joint academic appointments in both the Medical and Culinary Arts. He serves as faculty in The University of Montana College of Health and in The Missoula College Culinary Arts Program of the Department of Business Technology where he teaches Culinary Medicine. He also serves as an Adjunct Professor of Medicine (Culinary Medicine) at The Kansas Health Science Center.
Effects of Physical Activity on Brain Energy Biomarkers in Alzheimer’s Diseases

Navin H. Khan
Immune Whey, Sugar Hill, USA

The prevalence of dementia has substantially increased worldwide. Currently, there is no cure for dementia or Alzheimer’s Disease (AD), and care for affected patients is financially and psychologically costly. Of late, more attention has been given to preventive interventions—in particular, physical activity/exercise. In this review, examine the risk factors associated with AD and the effects physical activity may play in the prevention of the degenerative process of this disease, loss of memory and cognitive performance in the elderly. To date, research has shown that physical activity, especially aerobic exercise, has a protective effect on cognitive function and memory in the elderly and Alzheimer’s patients. In comparison with aerobic exercise, several strength training studies have also shown positive effects, and the rare studies that compare the two different modalities show no difference.

Keywords: Alzheimer’s; physical activity; Prevention and Memory

Biography:

Navin H. Khan is the sports nutritionist, exercise physiologist, and Chief Scientific Officer for Immune Whey LLC. He has conducted over 1000 VO2 max and resting metabolic assessment. He is known for determining client-specific nutrient and energy requirements, with consideration to specific lifestyles, physiology and medical concerns of all his clients. His research areas focus on the effect of dietary supplements on brain health and exercise performance. His passion is researching, innovating, and pushing the boundaries of human performance, sports nutrition, and exercise physiology. His career is dedicated to educating and motivating others to be optimal in their approach to naturopathic nutrition, training, and supplementation.
Evolution of Nutrition and Food Sciences in the country

Saima Khursheed
University of North Texas at Dallas, USA

The world has progressed through hunter–gatherer, agricultural, and industrial stages to provider of goods and services. This progression has been catalyzed by the cultural and social evolution of mankind and the need to solve specific societal issues, such as the need for preservation to free people from foraging for food, and the need for adequate nutrition via consistent food supply year round. These forces led to the development of the food industry, which has contributed immensely to the basis for a healthy human civilization and helped society prosper and flourish. Today, our production-to-consumption food system is complex, and our food is largely safe, tasty, nutritious, abundant, diverse, convenient, and less costly and more readily accessible than ever before. This vast food system includes agricultural production and harvesting, holding and storing of raw materials, food manufacturing (formulation, food processing, and packaging), transportation and distribution, retailing, foodservice, and food preparation in the home. Contemporary food science and technology contributed greatly to the success of this modern food system by integrating biology, chemistry, physics, engineering, materials science, microbiology, nutrition, toxicology, biotechnology, genomics, computer science, and many other disciplines to solve difficult problems, such as resolving nutritional deficiencies and enhancing food safety. The impact of modern food manufacturing methods is evident in today’s food supply. Food quality can be maintained or even improved, and food safety can be enhanced. Sensitive nutrients can be preserved, important vitamins and minerals can be added, toxins and antinutrients (substances such as phytate that limit bioavailability of nutrients) can be removed, and foods can be designed to optimize health and reduce the risk of disease. Waste and product loss can be reduced, and distribution around the world can be facilitated to allow seasonal availability of many foods. Modern food manufacturing also often improves the quality of life for individuals with specific health conditions, offering modified foods to meet their needs (for example, sugar-free foods sweetened with an alternative sweetener for people with diabetes).

Key Words: Nutrition, Food Technologies, Hunger, Public policies, Food industry

Biography:

Saima Khursheed is completed my PhD in soil science and agricultural chemistry. I have been using my Soil and Environmental science experience in consulting, fieldwork, litigation support/expert witness testimony, management, and scientific support and analysis; using my management and consulting experience in a team-oriented, multi-disciplinary professional environment that is proactively involved with environmental sustainability, ecology, natural resources, and soil science related projects including assistance with coordinating field activities, field work including soil/groundwater/vapor and ecological investigations, data evaluation, and report preparation. I am an experienced professional interested in leading and participating in the team effort.
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DAY 2

POSTER PRESENTATIONS
Analyzing food safety culture elements in foodservice operations

Aifaa Binti Roslan*, Siti Sarah Mustafar, Ungku Fatimah Ungku Zainal Abidin, Maimunah Sanny, Noor Azira Abdul-Mutalib, Farah Adibah Che Ishak, Muhammad Shahrim Karim
Department of Food Service and Management, Faculty of Food Science and Technology, Universiti Putra Malaysia

The food safety program’s breakdown is often reported due to poor food safety culture, in which the foodservice sector is frequently identified as a typical setting of foodborne outbreaks occurrence. Given the significance of the tourism industry and the increasing importance of food safety culture, this study explores the elements of food safety culture in micro and small restaurants in tourist spots. This study also assesses risk factors out-of-compliance among food handlers. A qualitative approach was used to conduct the study through observation and interviews with restaurant managers and food handlers. The interview included key questions on participants’ perceptions regarding food safety culture in their workplace. A purposive sampling technique was employed to select the research informants. A total of 20 informants from 10 restaurants participated in the interview sessions. All interviews were audio-recorded, transcribed verbatim, translated into English, and analyzed using Atlas.ti to identify themes and patterns in the data. The observation data were analyzed using Microsoft Excel to find the total number and percentage of restaurants out-of-compliance for each risk factor. Altogether nine themes emerged based on elements of food safety culture within micro and small restaurants: 1) risk perception and awareness, 2) communication, 3) food safety management system, style, and process, 4) accountability, 5) leadership and employees’ commitment, 6) internal environmental factors, 7) self-commitment, 8) work pressure, and 9) teamwork. The observation results showed that the two most commonly occurring risk factors out-of-compliance in the studied restaurants are poor personal hygiene and improper holding time and temperature. The findings provide insight into this under-studied context’s food safety culture to help better planning on training strategies and interventions to improve food safety practices.

Keywords: Food safety culture, Food handler, Food safety, Risk factor, Tourism.

Biography:
Aifaa Binti Roslan was born on 14th May 1995 in Ipoh, Perak. She attended Universiti Putra Malaysia from 2015 to 2019 and graduated with a B.Sc. in Food Service and Management. She is currently a Master’s student working with Dr. Ungku Fatimah Ungku Zainal Abidin at Universiti Putra Malaysia in Selangor, Malaysia. Her research at UPM focuses on exploring the elements of food safety culture in foodservice sector and developing the assessment tool for improving food safety performance in Malaysia.
Short-term sodium phosphate supplementation improve VO\textsubscript{2max} under hypoxia without calcium-phosphate imbalance in athletes

Kamila Płoszczyca*, Miłosz Czuba
Department of Kinesiology, Institute of Sport, Warsaw, Poland

AIM: Several previous studies revealed that sodium phosphate (SP) supplementation may enhance functional capacity of the aerobic energy system in normoxia. The aim of this study was to evaluate the effect of short-term intake of SP on aerobic capacity under hypoxia in endurance athletes. Additionally, we investigated the effect of SP supplementation on the phosphate-calcium balance.

METHODS: Ten trained cyclists and triathletes (age, 33 ± 2.5 years; VO\textsubscript{2max}, 60.2 ± 4.7 ml·kg\textsuperscript{-1}·min\textsuperscript{-1}; body height, 1.81 ± 0.06 m; body mass, 70.5 ± 5.9 kg; fat free mass (FFM), 61.2 ± 6.2 kg; fat content, 13.3 ± 2.2%) received tri-sodium phosphate (50 mg·kg\textsuperscript{-1} of FFM/d) or placebo for 6 days in a randomized, cross-over study, with a three-week washout period between supplementation. Before and after each supplementation phase, the subjects performed an incremental exercise test to exhaustion under normobaric hypoxia (FiO\textsubscript{2}=16\%, ~2500 m) to determine VO\textsubscript{2max}. Furthermore, in fasting conditions, venous blood samples were drawn to determine phosphates and calcium serum concentration.

RESULTS: The results indicated a significant (p<0.01) increase in relative and absolute VO\textsubscript{2max} values (by 3.6%) due to SP supplementation. Serum phosphates levels increased from 3.03 to 3.24 mg/dl, however, these changes were not statistically significant. The calcium levels did not change significantly after phosphate salts intake (9.49 vs. 9.43 mg/dl).

CONCLUSION: Short-term sodium phosphate supplementation improve aerobic capacity under hypoxic conditions without calcium-phosphate imbalance. Sodium phosphate may be considered as an ergogenic aid for endurance athletes.

*This study has been conducted in the framework of the grant awarded by the National Science Centre of Poland, No. 2019/33/N/NZ7/00376

Keywords: Sodium Phosphate, Hypoxia, Oxygen uptake, Aerobic Capacity, Athletes

Biography:

Kamila Płoszczyca is a (since 2020) - principal investigator in research project: “Effect of sodium phosphate supplementation on aerobic capacity under normobaric hypoxia in cyclists”; grant No. 2019/33/N/NZ7/00376 from the National Science Centre of Poland, since 2018 - employed in the Department of Kinesiology at the Institute of Sport - National Research Institute in Warsaw, since 2016 – PhD student, the Jerzy Kukuczka Academy of Physical Education in Katowice. Department of Sports Training. Scientific field: Sport sciences; Dissertation title: “The effect of high intensity interval training in normobaric hypoxia on levels of selected hormones and lipid profile in swimmers”. 
In the northern zone of Patagonia in Argentina, fruit and vegetable processing industries generate a lot of volumes of lignocellulosic by-products that can become suitable raw materials for the production of edible mushrooms. This paper presents studies carried out on the productivity of mushrooms grown on vegetable by-products of regional industries, as well as the nutritional quality of these mushroom. Pleurotus sajor caju and apple bagasse were used as primary inoculum and substrate, respectively. Biological Efficiency (BE), Yield (Y), Production Rate (PR) and morphometry of the fruiting bodies, were the productive parameters calculated. The composition in water, total proteins, fat and minerals constituted the nutritional analyzes. Among the results obtained we can mention: BE 62.6%, Y 35%, PR 1.57% in a productive period of 40 days. The dimensions of the structures of the fruiting bodies were: pileus diameter 15.70 ± 4.37cm and stipe diameter 5.09 ± 0.98 cm, being the pileus length: 3.91 ± 0.56 cm. Regarding the nutritional composition, the analyzes revealed: water 80.0%, proteins 27.6%, fat 0.75%. The concentration of C was 40g% and the other minerals (in ppm): K: 34938, Ca: 6034, Mg: 8265, Fe: 21.6, Cu: 11.1, Zn: 56, Mn: 5.79. While there are traces of Cd and Pb. Energy content 1.45 KJ / 100g. Although the productivity indicators were not high, they revealed the feasibility of introducing regional fruit and vegetable by-products into a new food chain. In addition, the nutritional importance of edible mushrooms was proven, so their consumption can be recommended in all types of diets.

Keywords: Mushroom, Apple Bagasse, Nutrition

Biography:

Marcela Viviana Filippi is a Chemical engineer and Safety and Hygiene Engineer. Since 2009 I have been a research professor at the Universidad Nacional de Rio Negro. At present I am associate professor of the subjects of Transport Phenomena and Unit Operations in Food and Biotechnology Engineering. From 2005 to 2012 I worked in the concentrated juice production industry. I have been the director of the Technology and Environment Production School since 2018 and as director of the Food Engineering career since 2017. I am doing a doctorate in Food Science and Technology at the Universidad Nacional del Sur, Bahía Blanca.
Effect of sweet potato addition on sensorial evaluation, rheological and microstructure properties of yoghurt

Aisha Mohamed Mohamed Abdel Maksoud ELATTAR*1, Nour elhoda Ahmed1, Silvia M.Zaki2, Mai Hesham1 and Morsi Elsoda1

1Laboratory of Microbial Biochemistry of Dairy Microorganisms, Department of Dairy Science and Technology, Faculty of Agriculture, Alexandria University, Egypt.
2Dairy Science and Technology Dept., Faculty of Agric., Alexandria University, Alexandria, Egypt.

Yoghurt is one of the most popular dairy products worldwide. Sweet potato is added to improve the functional value of yoghurt. This research consists of two stages; the first stage is the preparation of the sweet potato in the added form whether crushed raw sweet potato (CRSP), Sweet Potato Flour Dehydrated in Lab (SPFL) or Sweet Potato Flour delivered from Factory (SPFF). The second stage is preparation of yoghurt fortified with three forms of sweet potato concentrations at 0, 0.5%, 1%, 2% and 4%. The aim of this research is to replace the stabilizer used in the manufacture of yoghurt by the sweet potato aimed at its functional properties and a less expensive alternative. Hardness, adhesiveness, cohesiveness and gumminess of yogurt increase with increase in sweet potato concentration in all treatments in compared with control yogurt. SPFL and SPFF supplementation to yoghurt showed higher values when compared to CRSP supplementation. An increase in the texture parameters of yoghurt was the great impact on the manufacture of yogurt to replace the industrial stabilizer by the sweet potato. Scanning Electron Micrograph (SEM) of yogurt fortified with sweet potato showed that CRSP exhibited fine granulated structure dispersed between thin gelatinous layers which enhanced consumer acceptability to gain sensory scores even higher than control yogurt. On the other hand, the microstructure of yogurts with SPFL showed denser and smaller voids when compared with control yogurt and was noticed that the sweet potato globules were embedded in and connected to the gel matrix. The results obtained in the present research suggest the use of sweet potato showed a cohesive and gummy yogurt which can replace with industrial stabilizer.

Keywords: Sweet Potato, Yogurt, Rheological Properties, Microstructural Properties

Biography:
Aisha Mohamed Mohamed Abdel Maksoud ELATTAR is a Professor . dairy science and technology department, faculty of Agriculture, Alexandria University. Alexandria, EGYPT. (Prof Dr. El-Attar Graduated from the Faculty of Agriculture, Dairy Department in 1993 with excellent grade, and obtained a master’s degree in the same department in 1997 with the title (Biotechnological studies on milk and milk products. Biochemical studies on enterococci) she also obtained a doctorate from France in 2001 from INA-PG with the title. Sélection et caractérisation de mutants de Lactococcus lactis. Présentant une forte activité gazogène Dr. El ATTAR has been working in isolation and identification of LAB for ≈20 years. Also, she studied the probiotic characteristics of isolates from Egyptian environment as well as from the camel milk.
Serum albumin is associated with fluid overload but not with BMI and muscle mass index in haemodialysis patients

Maria Fernanda Naufel1*, Raquel Carreia1, Clara Gunji1

1Fresenius Medical Care, Brazil.

Hypoalbuminemia is a major concern among haemodialysis patients as it is associated with increased morbidity and mortality risk. Besides protein-energy malnutrition due to inadequate protein and/or caloric intake, hypoalbuminemia in patients with end-stage renal dialysis is also attributed to several other factors which can negatively influences the albumin synthesis. Thus, the aim of the present study is to investigate other variables that may influences albumin levels in patients on maintenance haemodialysis. One hundred ninety-eight adult patients undergoing haemodialysis (20-97 years-old, 64% male) were included in the analysis. Body composition was measured by bioimpedance spectroscopy (Body Composition Monitor – BCM, Fresenius Medical Care, Germany) and blood samples were assessed before dialysis session. The patients were then allocated into two groups according to their serum albumin levels: normal-albumin (albumin ≥3.5g/dL; n=145) and hypoalbuminemia (albumin <3.5g/dL; n=53) groups. Fluid overload was calculated by the time-average fluid overload (TAFO). Data were analysed by either Student’s t test or Mann-Whitney, for p<0.05. Pearson’s correlation were applied. The group with hypoalbuminemia were older and had higher pre-and postdialysis systolic blood pressure, and fluid overload. The correlations showed that age and TAFO were negatively associated with serum albumin levels, whereas BMI, muscle-mass index, urea levels and other biochemical and anthropometric parameters did not showed a significant correlation with serum albumin. We concluded that pre-dialysis albumin levels were more associated with fluid overload and aging than with body muscle mass and protein intake. We wonder that our results might be due to the impact of dilution on serum albumin levels in the pre-dialysis period in patients with fluid overload and if the post-dialysis analysis would be the more appropriate to mitigate such effect. Accordingly, fluid overload should always be considered when the patient is diagnosed with hypoalbuminemia.

Keywords: albumin, protein malnutrition, dialysis, chronic kidney disease, overhydration

Biography:
Maria Fernanda Soares Naufel, Dietitian at Fresenius Medical Care – Vila Mariana. Postdoctoral researcher / Departamento de Fisiologia, Programa de Pós-Graduação em Nutrição – Universidade Federal de São Paulo – UNIFESP/EPM. Dr Maria Fernanda Naufel is graduated as a Dietitian, specialist and master at Nephropediatry and PhD at Nutrition from Universidade Federal de São Paulo (UNIFESP). Research experience focusing on clinical nutrition, acting on the following subjects: gut hormones, obesity, sleep and mood disorders, nephrology and postmenopause. At the moment works as a postdoctoral researcher at the Pós-Graduação em Nutrição-UNIFESP. Current project: The influence of obesity on sleep and mood disorders in postmenopausal women.
Aging, alkaline phosphatase and fat mass index are associated with fluid overload in haemodialysis patients

Maria Fernanda Naufel¹, Raquel Carreia¹, Clara Gunji¹
¹Fresenius Medical Care, Brazil.

The chronic Fluid Overload (FO) is considered a major cause of hypertension, heart failure and mortality among patients with end-stage renal disease. The aim of the present study was to investigate whether aging, anthropometric, and biochemical parameters are associated with FO in haemodialysis patients. One hundred ninety-eight adult patients undergoing haemodialysis (20-97 years-old, 64% male) were included in the analysis. Body composition was measured by bioimpedance spectroscopy (Body Composition Monitor - BCM, Fresenius Medical Care, Germany) and blood samples were assessed before dialysis session. FO was assessed by the time-average fluid overload (TAFO). Data were analysed by Pearson´s correlation, and linear regression model was applied. Significance was set at p<0.05. Correlation analysis including all the 198 haemodialysis patients showed age, post-dialysis systolic blood pressure, and alkaline phosphatase to correlate positively, whereas BMI, fat mass index and albumin levels correlated negatively with TAFO. The linear regression model showed positive association of TAFO with age (p<0.001) and alkaline phosphatase (p<0.001), and a negative association with fat mass index (p<0.001). To the best of our knowledge, this is the first demonstration of an important association between FO and alkaline phosphatase. Our findings showed that the fluid overload can be associated with several factors, and that the higher the age and phosphatase alkaline levels, and the lower the fat mass, the more severe is the FO in haemodialysis patients. Further studies are necessary to better understand these associations.

Keywords: End-stage Renal Disease, Hypervolemia, Dialysis, Bioimpedance, Heart failure and Anthropometry.

Biography:

Maria Fernanda Soares Naufel. Dietitian at Fresenius Medical Care – Vila Mariana. Postdoctoral researcher / Departamento de Fisiologia, Programa de Pós-Graduação em Nutrição – Universidade Federal de São Paulo – UNIFESP/EPM. Dr Maria Fernanda Naufel is graduated as a Dietitian, specialist and master at Nephropediatry and PhD at Nutrition from Universidade Federal de São Paulo (UNIFESP). Research experience focusing on clinical nutrition, acting on the following subjects: gut hormones, obesity, sleep and mood disorders, nephrology and postmenopause. At the moment works as a postdoctoral researcher at the Pós-Graduação em Nutrição-UNIFESP. Current project: The influence of obesity on sleep and mood disorders in postmenopausal women.
Use of bacteriophages in food production

Filip Beno*, Horsáková Iveta, Miasníkova Kataryna, Ševčík Rudolf
University of Chemistry and Technology, Prague, Czech republic

The bacteriophage is a bacterial virus as it utilizes bacteria as its host to complete its life cycle. Use of bacteriophages in the food and feed industry is an alternative for antibiotic and thermal preservation. Bacteriophages are used across dairy products, meat products, fresh and processed vegetable and fruit products. It has a narrow spectrum antimicrobial. Each phage has a specific target organism. The aim of this work was to verify the biological protection effectiveness of crop products. Selected bacteria in our experiment are Dickeya dianthicola and Pectobacterium carotovorum causing potatoes rots and other crops. These phytopathogens are returned to potato process. Cross-contamination of other crops occurs by returning the washing water and soil back to the agricultural land. Therefore, it is necessary to treat these contaminated materials to prevent further contamination of crops. The efficiency of bacteriophage utilization was tested in liquid media using a Biosan bioreactor. This instrument uses spectrophotometric continuous measurement of the increase in the number of bacteria (growth curves) at different temperatures. Bacterial growth curves were also monitored after the addition of bacteriophages. Further experiments were performed on solid agar media where the growth of bacteria was visually monitored and compared with the growth of bacteria inhibited by bacteriophages. Similar experiments were also performed directly on potato slices. The positive effect of using bacteriophages to treat food (potatoes) has been proved. In particular, it was an extension of the lag-phase of selected bacterial phytopathogens.

Keywords: Bacteriophages, Food Preservation, Non-Thermal, Phytopathogens, Potatoes

Acknowledgment: This project was supported by the Ministry of Agriculture of the Czech Republic, Project No. QK1910028.

Biography:
Filip Beno research focuses primarily on the quality of meat and meat products (from farm to meat/consumer). I am also involved in the development of new recipes to reduce the salt content of meat products. We cooperate with many companies, we consult technological problems and perform analyzes of their products. I also focus on technology and processing of vegetables and fruits and their products. The study at UCT Prague includes also consultations on bachelor’s and master’s theses, leading, laboratory work of students and, last but not least, publishing activities.
Determination of vitamin B12 (cobalamin) using HPLC

Filip Beno**, Škorpilová Tereza, Pohúnek Václav, Bauer Josef, Ševčík Rudolf
University of Chemistry and Technology, Czech republic

Vitamin B12 belongs to water-soluble vitamins and has a complex ring system with cobalt as a central atom. This vitamin is an important cofactor for many biochemical reactions and is produced exclusively by microorganisms. The largest amounts are found in the liver and kidneys (µg/kg) and low concentrations of vitamin B12 can be found in meat, fish, egg and milk in very low concentrations. Cobalamin is the most stable form of vitamin B12. It is stable in high temperatures, but degrades in very acidic and alkaline pH values, and in the presence of oxidizing agents and light. The aim of this study was to validate a quantitative method for the determination of vitamin B12 by RP-HPLC with UV detection and to determine the vitamin B12 content in the offal of livestock. Cyanocobalamin was detected as total vitamin B12 after extraction in 50 mM sodium acetate buffer in the presence of sodium cyanide and purification on an immunoaffinity column. The extraction was preceded by the release vitamin B12 protein-bound by pepsin treatment. Both the isocratic method and the gradient method were used to validate the determination method. The gradient method was evaluated as more suitable method with the limit of detection (LOD) 7 µg/kg and the limit of quantification (LOQ) 25 µg/kg. The calibration with six concentration points of vitamin B12 was linear with a regression coefficient R² = 1. The vitamin B12 concentrations measured by HPLC were 19.8 µg/100g in chicken liver, 47.7 µg/100g in turkey liver, 18.1 µg/100g in pork liver, 9.21 µg/100g in pork kidneys, and 46.3 µg/100g in beef liver.

Keywords: vitamin B12, HPLC-UV, liver, kidneys, meat

Acknowledgment: This work was supported from the grant of Specific university research – grant No A2_FPBT_2020_028.

Biography:

Filip Beno research focuses primarily on the quality of meat and meat products (from farm to meat/consumer). I am also involved in the development of new recipes to reduce the salt content of meat products. We cooperate with many companies, we consult technological problems and perform analyzes of their products. I also focus on technology and processing of vegetables and fruits and their products. The study at UCT Prague includes also consultations on bachelor’s and master’s theses, leading, laboratory work of students and, last but not least, publishing activities.
Functional ingredients for the restriction in the use of antibiotics in animals

Luciana Rossi
Department of Health, Animal Science and Food Safety, Università degli Studi di Milano, Milano, Italy

Antibiotic resistance became a major global threat which has led the major international organizations to develop holistic strategies focused on the prudent use of antibiotic in humans and in animals. Antimicrobial resistance is included as a priority in the One Health operational framework and interventions that restrict antibiotic use in food-producing animals are associated with a reduction of antibiotic-resistant bacteria. Even if the precise quantity of antimicrobials used in food production globally is difficult to estimate, evidences suggest that antibiotics consumed by animals worldwide is almost double that used by humans. For these reasons integrated strategy in food-producing animals replacing the antibiotics with novel functional additives and ingredients is urgently needed. In our studies several dietary additives and compounds with functional properties were in vivo evaluated as alternative to antibiotics on weaned piglets. Interesting results were obtained on the improvement of immune system and animal performance, on the modulation of the intestinal microbiota and the reduction of incidence of diarrhea. Obtained data suggested that many ingredients could be considered a valuable feed additive for weaned piglets. Even if no one alternative will replace all uses of antibiotics, health promotion and disease primary prevention is the best strategy for the reduction of antibiotics.

Keywords: Alternatives To Antibiotics, Animals, Antibiotic Resistance, Functional Ingredients, Diet

Biography:

Luciana Rossi is a Associate professor at the Department of Health, Animal Science and Food Safety “Carlo Cantoni” (VESPA), University of Milan. Professor of Animal nutrition at Veterinary Medicine Faculty and Designated Veterinarian at the University of Milan.
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