The International Society for Nutraceuticals and Functional Foods

ISNFF Newsletter **Volume 13, Issue 1**
July 2020

CONTENT

MESSAGE FROM THE ISNFF

The International Society for Nutraceuticals and Functional Foods (ISNFF), like other organizations has been affected by the COVID-19 pandemic. This resulted in our decision to postpone the annual conference and exhibition to 2021. Despite this, we have continued to make remarkable contributions in research and development of functional foods, nutraceuticals, dietary supplements, and natural health products. In doing so, our activities have given great benefit to foster strong, wide, and international communication among professionals in academia, industry, governments, and other organizations, and among inventors, investors, and all interested parties. Our success has been due to the support received from our members who have provided state-of-the-art expertise in the field. Industry relevant R & D work and establishing true pre-clinical and clinical support for the ideas put forth is still needed to establish strong relationship between what is found in the laboratory to reach production and supported by *in vivo* health promotion and disease risk reduction studies.

The primary journal of the ISNFF, Journal of Food Bioactives, has just is completed its 30 months of activities with publication of important articles in research, perspectives and reviews that are easily accessible through our dedicated website <isnff-jfb.com> or through ISNFF website <isnff.org>. All manuscripts processed in 2020 continue to receive a waiver of applicable fees, if qualified.

Meanwhile, the 2020 Annual Conference and Exhibition that was planned for Nanjing, China, had to be postponed to 2021 with expanded exciting new sessions that are planned. We will keep you informed of the details and look forward to hearing your latest findings and developments, to meet old friends and to make new ones in the meeting planned for September of next year with exact dates to be announced soon. Please note that applications for the ISNFF Merit Award, Fellow Award, and Fereidoon Shahidi Fellowship should be sent directly to the ISNFF office <isnffsecretary@gmail.com> and to be copied to the attention of Professor Chi-Tang Ho ctho@sebs.rutgers.edu for 2021.

The 2021 conference site, Nanjing, is the old capital of China and an exciting place with many historical places to visit during the evenings and any free time you may find as well as the technical and cultural tours planned during the conference period. We sincerely hope that the world overcomes challenges posed by the pandemic and we arrive stronger than ever in the new junction this situation has created by leading into new findings that offer opportunities for food production, processing, and nutrition. We will keep you informed through our website, the journal, and also newsletters.

Dr. Fereidoon Shahidi (Principal Founder and Executive Board Member of ISNFF)
Dr. Kazuo Miyashita (Chair of ISNFF)

SCIENTIFIC REVIEW ARTICLES

Health Benefits of Dried Fruits

Cesarettin ALASALVAR
(Ph.D, FIFT, FISNFF, FIAFoST)
Director of Food Institute
TÜBİTAK MAM Food Institute
Gebze-Kocaeli,TURKEY

Dried fruits (dates, figs, prunes, raisins, apricots, peaches, apples, and pears are referred to as "conventional" or "traditional") are part of our daily diet. They are nutrient-rich foods and constitute an excellent means to deliver health-promoting bioactive compounds. Dried fruits are consumed whole or as ingredients of many food products such as muffins, cereals, chocolates, energy bars, breads, and cookies, among others. Frequent consumption of dried fruits is highly recommended to obtain the full benefit of the nutrients, bioactives, and antioxidants that they contain, together with their desirable flavour [1,2].

So far, there is only one health claim approved by the European Food Safety Authority (EFSA) for dry fruits, which refers to prunes and gastrointestinal health. The EFSA authorized the health claim: "dried plums/prunes can contribute to normal bowel function". To gain the beneficial effect, about 100 g of prunes should be consumed daily [3]. Dried fruits are a useful way to include more fruit in our diet regardless of the season [4].

Since many health-promoting phytochemicals remain after processing, regular intake of dried fruits can exert various health benefits [5]. Many *in vivo* and *in vitro* studies point to a beneficial effect of dried fruits and/or their constituents on the modulation of lipid and glucose metabolism and tumorigenesis [6]. The health benefits ascribed to frequent dried fruit consumption comprise improvements in the lipid profile, appetite, and satiety control [7], cardiovascular disease and cardiometabolic syndrome (e.g., inflammation, endothelial function, and blood pressure) [8], glucose and insulin homeostasis [5], bone health [9], and cancer [10], among others. More importantly, dried fruits have also been proven to influence gastrointestinal physiology, including gut microbiota, and a recently designed randomized clinical trial (RCTs) explored their benefits on endurance exercise [1]. A beneficial effect on bone health – mainly in postmenopausal women – has been ascribed to dried plums due to the variety of phenolics present in them. *In vitro* and *in vivo* studies and RCTs have suggested that dried plums may have beneficial effects on bone formation and inhibition of bone resorption. However, long-term prospective cohort studies using fractures and bone mineral density as primary endpoints are required to confirm previous findings [9].

In conclusion, dried fruits, which serve as important healthful snacks worldwide, are nutritionally equivalent to fresh fruits while providing all of their bioactive components in a concentrated form. Individuals who consume dried fruits regularly have a lower risk of cardiovascular disease and other non-communicable diseases. Therefore, they can be incorporated into a healthy diet as snacks, in salads, sauces, and other recipes.

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Interindividual Variability in Gut Microbiota

Christine MORAND, PhD
Research Director
INRAE- Human Nutrition Unit
UMR 1019- Université
Clermont-Auvergne
Clermont-Ferrand, FRANCE

Gut microbiota refers to a complex ecosystem of bacteria that colonize the human gastrointestinal tract. Over the past decade, the development of omics technologies allowing the large scale analysis of the genetic and metabolic profiling of microbial communities has considerably increased our understanding of the composition and functionality of the gut microbiota. This has led to consider now the gut microbiota as an additional human organ system, comprising a multitude of cells, genes, and metabolic pathways, which performs pivotal functions in health and disease. A symbiotic host-microbe relationship is believed to shape an immune response that mediates the balance between health and disease, to extract nutrients and produce metabolites from undigested dietary components, and also to allow the synthesis of essential vitamins [1,2]. In contrast, intestinal dysbiosis has been suggested to promote or worsen the development of some diseases.

Human observational studies have established that diet has a pivotal role on the structural and functional capacity of the gut microbiota [3], enlightening the crucial interest of nutrition strategies to target modulation of the gut microbiota for health benefits. However, the gut microbiota response to dietary interventions seems highly variable among individuals [4]. As recently reviewed, results from a number of pre and probiotic interventions suggest that the gut microbiota response depends on the baseline gut microbiota composition, with individuals who have gut microbiota that are responsive to dietary interventions whereas others are not [5].

The host-microbes interactions are mediated through the release by microbial enzymes of bioactive compounds in the gut lumen, followed by their absorption and release in the blood. These molecules deriving from dietary constituents mainly include short-chain fatty acids (SCFA) released by the fermentation of dietary fibers, and also a diversity of compounds resulting from the catabolism of polyphenols. Polyphenols constitute the major plant food bioactives of the diet due to their abundance in fruits and plant derived beverages highly consumed worldwide. Polyphenols are increasingly recognized for their capacity to improve a range of physiological processes, with as a consequence a key role in the protection against chronic diseases, including cardiovascular diseases, obesity, type 2 diabetes and neurodegenerative diseases [6]. However, despite accumulating evidence from epidemiological and preclinical studies which support the health benefit of dietary polyphenols, clinical trials assessing the effects of polyphenols consumption on intermediate biomarkers of disease risk have often showed mixed results. This is due to a large heterogeneity in the individual responses which can lead to distinguish responders vs. non-responder's participants in the same trial [7]. Even if polyphenols represent a tremendous potential for innovation in the field of food nutrition and health, their full consideration in future preventive strategies requires to identify the main determinants responsible for the interindividual variability in response to their intake, regarding both their bioavailability and bio-efficacy [8].

Polyphenols generally display a low bioavailability. Their native forms (glycosides, esters, polymers) are largely resistant to enzymatic breakdown in the stomach and small intestine, and they mainly reach the colon intact where they interact in a two-ways mode with the gut microbes. A number of gut microbial species or strains have the capacity to metabolize polyphenols through well-characterized pathways [9]. These microbial conversions lead to the production of compounds

better absorbed than the parent polyphenols, including a diversity of small phenolic acids, and depending on the category of polyphenols also of specific microbial derived metabolites with a high bioactivity and recognized to produce clinical benefits [2]. Conversely, dietary interventions with polyphenols can also modulate the composition and function of the human gut microbiota towards a more health promoting profile because polyphenols can promote the growth of some bacterial species with beneficial effects for the host [2]. A growing body of evidence supports that the gut microbial metabolism of polyphenols can highly differed between individuals with impact on the bioactivity of these compounds; thereby interindividual variations in microbial metabolism could also affect the health benefits of polyphenols [10].

Individuals harbor complex gut microbial communities presenting variable levels of bacterial diversity that may be more or less responsive to dietary changes, making so far very difficult to predict how an individual's gut microbiota may respond to a given dietary intervention and ultimately how the individual will benefit from this intervention. Additional research aiming to identify the factors responsible for the interindividual variability in gut microbiota and host response to dietary interventions are urgently required. In particular, future studies should carefully address the influence of the baseline gut microbiota composition on interindividual variability and focus on a better understanding of the bi-directional relationship between dietary polyphenols and the gut microbiota.

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WELCOME TO ISNFF2021

We are delighted to invite you to the 13th International Conference and Exhibition on Nutraceuticals and Functional Foods (ISNFF2021).

Considering the fact that we are still remaining amidst of an unprecedented "lockdown" and "travel restriction" in response to COVID-19, the ISNFF 2020 Conference, and Exhibition is postponed to 2021. The new date will be sometime in September with the exact dates to be announced shortly.

The organizing committee is putting its utmost efforts into preparing for the conference, which will be held at the Platinum Hanjue Hotel in Nanjing, China.

We welcome your participation in ISNFF2020 and very much look forward to welcoming all of you to our wonderful city.

SCIENTIFIC TOPICS OF ISNFF2021

Selected conference topics are given below. Other suggested topics will also be considered

- Do functional foods and nutraceutical help prevent COVID-19 and other pandemic viruses?
- Global regulations of functional foods, nutraceuticals and dietary supplements
- Health claims in functional foods and nutraceuticals
- Market trends in functional foods and nutraceuticals
- Labelling and standardization of nutraceuticals and dietary supplements
- New product development in functional foods and nutraceuticals
- Chinese herbal medicine and other remedies
- Functional beverages and human health
- Functional lipids
- Functional proteins and peptides
- Gut microbiota and health
- *In vitro*, *in vivo* and RCTs for functional foods and nutraceuticals
- Metabolomics in functional foods and nutraceuticals
- Nutraceuticals and functional foods in health promotion and disease prevention
- Personalized nutrition
- Phenolic and polyphenolics as antioxidants and beyond
- Pre- and probiotics and health
- Soy and isoflavones in Asian diet
- Tea, coffee and cocoa in health promotion and function
- Cereals, legumes and oilseeds
- Nuts and exotic seeds
- Analysis of bioactives and functional food ingredients
- Science to business and business to business
- Food production, processing, and nutrition, including ultra-processed foods
- How to prepare and publish your research findings successfully
- Others

UPCOMING NUTRACEUTICALS AND FUNCTIONAL FOODS EVENTS

August 2020

17-20, American Chemical Society Fall 2020 Meeting (virtual meeting)

July 2021

18-21, Institute of Food Technologists IFT21, Chicago, IL USA

September 2021

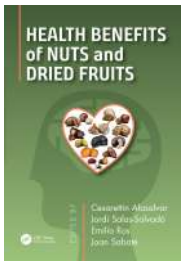
23-24, Polyphenols Applications, Valencia, Spain

September 2021
TBD, ISNFF Annual Meeting, Nanjing, China

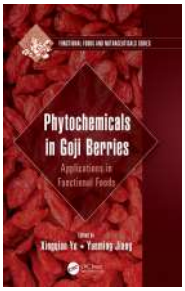
SAD NEWS

Professor Dr. Ir. Randit Pambayun, from the Sriwijaya University, a regular participant at the ISNFF Annual Conference and Exhibition, and a member of its international affiliate, the Indonesian Society for Functional Food and Nutraceutical (P3FNI) passed away on July 8, 2020 due to COVID-19. Professor Pambayun was an active member of the food science community and the 2012-2018 president of the Indonesian Association of Food Technologists and also served as an Advisory Board Member of P3FNI. Our condolences to his family, friends, and colleagues.

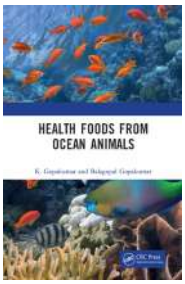
NEW TITLES



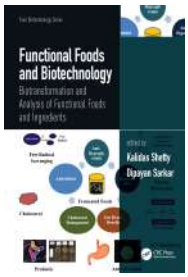
Health Benefits of Nuts and Dried Fruits
Cesarettin Alasalvar, Jordi Salas-Salvado, Emilio Ros, Joan Sabate
February 2020 by CRC Press



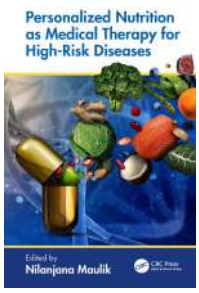
Phytochemicals in Goji Berries Applications in Functional Foods
Xingqian Ye, Yueming Jiang
June 2020 by CRC Press



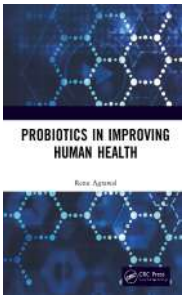
Health Foods from Ocean Animals
K. Gopakumar, Balagopal Gopakumar
May 2020 by CRC Press



Functional Foods and Biotechnology, Biotransformation and Analysis of Functional Foods and Ingredients
Kalidas Shetty, Dipayan Sarkar
April 2020 by CRC Press

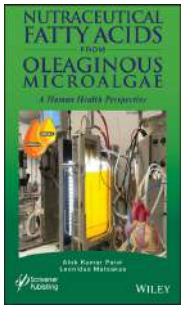


Personalized Nutrition as Medical Therapy for High-Risk Diseases
Nilanjana Maulik
April 2020 by CRC Press h 2020 by CRC Press

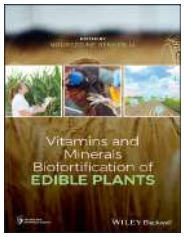


Probiotics in Improving Human Health
Renu Agrawal
March 2020 by CRC Press

Yogurt: Roles in Nutrition and Impacts on Health
André Marette, Éliane Picard-Deland, Melissa Anne Fernandez
February 2020 by CRC Press

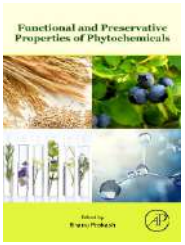


Nutraceutical Fatty Acids from Oleaginous Microalgae: A Human Health Perspective
Alok Kumar Patel, Leonidas Matsakas
June 2020 by Wiley-Blackwell



Vitamins and Minerals Biofortification of Edible Plants
Noureddine Benkeblia
March 2020 by Wiley-Blackwell

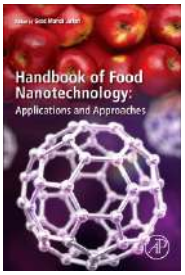
Aquaculture and By-Products: Challenges and Opportunities in the Use of Alternative Protein Sources and Bioactive Compounds, Volume 92
Jose Lorenzo, Francisco Barba
May 2020 by **Academic Press**



Functional and Preservative Properties of Phytochemicals
Bhanu Prakash
February 2020 by Academic Press

Release and Bioavailability of Nanoencapsulated Food Ingredients, Volume 5
Seid Jafari
June 2020 by A**cademic Press**

Recent Advances in Natural Products Analysis
Seyed Nabavi, Mina Saeedi, Seyed Nabavi, Ana Sanches Silva
March 2020 by Elsevier



Handbook of Food Nanotechnology
Seid Jafari
June 2020 by Academic Press

ISNFF JOURNALS

Journal of Food Bioactives (JFB)

The JFB, a dedicated publication of ISNFF, was launched in 2018 and completed a successful year with many reviews and original manuscripts. Please note that papers presented during ISNFF Conferences and Exhibition may be submitted for publication consideration to the Journal of Food Bioactives (isnff-jfb.com). To review the published manuscripts please refer to the journal website. Volume 10 was recently published. We have also moved to Scholar One Software which is more familiar to the authors. The journal is under consideration to become an official journal of the International Union of Food Science and Technology (IUFoST) for which ISNFF is a disciplinary Interest Group.

Web-site: http://www.isnff-jfb.com/index.php/JFB

Calculated Impact Factor (2019): > 2.000

Journal of Functional Foods (JFF)

The very first issue of the JFF, as the first publication, proposed by ISNFF, as a joint undertaking with Elsevier, was first released in October 2008 (dated January 2009). This journal, the Official Scientific Journal of ISNFF, was founded by its 10-years Editor-in-Chief Professor Fereidoon Shahidi who now serves as its Founding Editor. Dr. Shahidi is also the principal Founding Member of ISNFF.

Web-site:
https://www.journals.elsevier.com/journal-of-functional-foods

Impact Factor (2019): 3.701

MEMBERSHIP APPLICATION 2020

Last Name: _____	**First Name:** _____
Membership #: ISNFF-	
Company / Institution / University:	
Address:	
Telephone: ( )	Fax: ( )
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New Membership		☐
Renewal		☐
Cancel Membership		☐
Member	**$95**	☐
Student Member	**$45**	☐
Corporate Member	**$2,000**	☐
Corporate Member (Renewal)	**$500**	☐
Affiliate and Chapter Member	**$2,000**	☐

Payment Method:

Money Order: ☐

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Card Holder: _____

Expiry Date: _____

Please complete form and return to:

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Or scan and forward by Email: ISNFFsecretary@gmail.com