The International Society for
Nutraceuticals and Functional Foods

ISNFF Newsletter **Volume 13, Issue 2**
December 23, 2020

CONTENT

MESSAGE FROM THE ISNFF

Warm greetings for the holiday season from the ISNFF! We have had a challenging year due to the COVID-19 pandemic. As the year draws to a close, we wish you good health, happiness, and success in the coming year.

The 2020 ISNFF Conference and Exhibition had to be postponed due to the coronavirus and its devastating consequences. The emergence of vaccines will hopefully end this saga so that we could meet in person in Nanjing in 2021. However, to be realistic, we plan to have the meeting in a hybrid or a virtual way, pending new developments and the situation at the time. Travel restrictions and self-isolation requirements coupled with increasing transportation costs make it difficult for many of us to attend meetings. We will monitor and respond to the situation accordingly for our conference.

Please stay safe, take advantage of foods that are known for their health benefits, and strengthen your immune system. Do not forget those who are not fortunate enough to help themselves and follow instructions by authorities. Take care of yourself, your families, and your friends so that we can overcome this hurdle of a lifetime.

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

THE ANNUAL GENERAL MEETING (AGM)

This AGM activity was held as a virtual gathering on December 22, 2020 with participation of members present and reviewed the activities of the society and its current status as well as journal activities. The new members of the executive board were elected, and these are as follows.

ISNFF Board: 2020-2022 Term

Chair	Dr. Rotimi Aluko (Canada)
Vice Chair	Dr. Bradley Bolling (USA)
Past Chair	Dr. Kazuo Miyashita (Japan)
Treasurer	Dr. Jianping Wu (Canada)
Secretary	Dr. Rong Tsao (Canada)
Director	Dr. Fereidoon Shahidi (Canada)
Awards	Dr. Chi-Tang Ho (USA)

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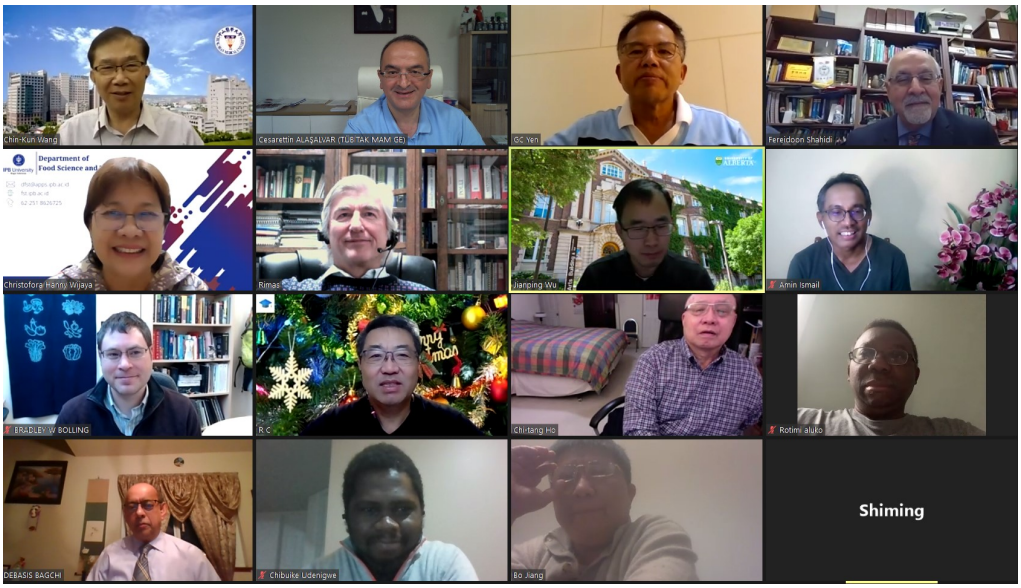
Dr. Shiming Li (China)
Dr. Petras Rimantas Venskutonis (Lithuania)
Dr. Chin-Kun Wang (Taiwan)
Dr. Christofora Hanny Wijaya (Indonesia)
Dr. Gow-Chin Yen (Taiwan)



SCIENTIFIC REVIEW ARTICLES

Food Processing and Ultra-processed Food: A commentary

Fereidoon SHAHIDI, PhD, FACS, FAGFD-ACS, FAOCS, FCIC, FCIFST, FIAFoST, FIFT, FISNFF, FRSC

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Raw materials intended for use as food may undergo pre-processing before they are used in food preparation. These may include cleaning, tampering and dehulling as well as other types of operations. Conversion of the raw material into food requires processing that often includes thermal and non-thermal processing. The impact of processing has been examined by several systems, among which the NOVA system has received considerable attention and generated much discussion. In this system, food is categorized in four groups as unprocessed, processed culinary ingredients, processed, and ultra-processed (UPF). Ultra-processed foods are defined as mass production formulations that contain a high amount of salt, sugar, and oil/fat and may provide insufficient amounts of fibre, micronutrients and bioactive compounds. Although one may infer that UPFs are certain types of ready-to-eat food that are rich in salt, sugar and fat along with a long list of chemical ingredients and preservatives, one should pay attention to the fact that there are many variations in such foods and while presence of too much salt, sugar and fat may not be healthful, use of certain additives and preservatives is essential for safety and wholesomeness of food and the elimination of pathogenic microorganisms. However, their uncontrolled use may not necessarily help the consumer and thus search for natural alternatives, when and where possible, must continue.

However, in this regard, half-baked solutions should be avoided. For example, using modified celery juice as an alternative to direct use of nitrites may lead to products that have more residual nitrite than those prepared directly with nitrites. This sort of manipulation may even be considered unethical and both scientists and manufacturers should pay attention to details so that the consumer is not fooled by misuse of terminologies. Therefore, food that is subjected to new processing methods using sophisticated technologies should not be included in this category. Minimally processed and whole foods are always preferred if safety aspects are carefully considered as this would have an impact on the retention of bioactive compounds that have health benefits. Furthermore, junk food should not necessarily be equated with ultra-processed food. However, there is much confusion and controversy over the categorization of junk food and definitions obscured by sensational arguments are not helpful. However, condemnation of UPF by some has resulted in revisiting of the formulations by multi-national companies and delivery of somewhat better food and beverages to the public. The responsible action of the progressive segment of the food industry has therefore been essential for striving to develop new products that ensure wholesomeness and nutritional value of a safe and sustainable food supply to address the needs of consumers.

The International Union of Food Science and Technology (IUFoST) held a roundtable discussion on December 9, 2020, titled “Food Processing Overview: Perceptions, Policies, and Implication”, moderated by its Scientific Council Chair, Fereidoon Shahidi (Canada), and its committee member Stephane Guilbert (France) with presentations from eminent scientists including Nathan Anderson (USA), Alexander Mathys (Switzerland), Paulo Sobral (Brazil), Pur Hariyadi (Indonesia), Ian Noble (UK), and Carlos Monteiro (Brazil). This discussion was preceded by publication of a Scientific Information Bulletin (SIB) by Emmanuel Hatzakis and Julie Jones. In this roundtable, different views were expressed, and existing confusions noted. In this regard, for example, in the previously alluded to NOVA system, while ultra-high temperature (UHT) milk is categorized as not being ultra-processed, the addition of chocolate makes it ultra-processed. Of course, such simplifications are incorrect as all depends on what type of chocolate is being used and if this is accompanied by use of high amounts of sugar and other components. Therefore, while positive aspects of NOVA food system categorization should be acknowledged, its limitations and erroneous use of certain definitions should also be clearly highlighted.

Note: Views expressed in this contribution are solely those of the author and do not represent any organization

ACE2 is Modulated by Dietary Bioactives

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Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection is mediated by its interaction with human angiotensin converting enzyme 2 (ACE2), which facilitates entry into host cells. It is well known that bioactives can inhibit angiotensin converting enzyme (ACE), but less is known about how bioactives specifically modulate ACE2. The balance between ACE and ACE2 activity underlies regulation of the renin-angiotensin system (RAS) [**1**]. Increased production of angiotensin II (AngII) by ACE can enhance NF-κB and the pro-inflammatory response through interaction with AngII subtype 1 (AT_{1A}, AT_{1B}) receptors [**2**]. Dysregulation of RAS is thought to underlie the SARS-CoV-2 inflammatory response and its specific effects on the vasculature, heart, kidney, and gut [2]. Since ACE2 reduces AngII, strategies to inhibit or neutralize ACE2 need to consider the potential of a concomittant pro-inflammatory response. *In silico* analysis predicts that quercetin, luteolin, and eriodictyol inhibit SARS-CoV-2 S-protein and angiotensin converting enzyme 2 (ACE2) interactions [**3**]. Some polyphenols, polyphenol metabolites, crude extracts, and bioactives present in fruits, vegetables, and grains have been identified as inhibitors of ACE2 activity. These include kaempferol and water extracts of asparagus, soy, tomato, udo (*Arali cordata*), and junsai (*Brasenia schreberi*) [**4**]; quercetin, rutin, quercetin-3-glucuronide, 3,4-dihydroxyphenylacetic acid, tamarixetin, among other phenolics [**5**]; and nicotianamine from soy [**6**]. Importantly, it is not yet clear if these ACE2 inhibitors also inhibit ACE2/SARS-CoV-2 spike protein interactions or diminish viral transmission. Furthermore, the bioavailability and metabolism of bioactives needs to be considered for any direct ACE2 interactions to be plausible [**7**]. Beyond direct effects, bioactives can positively or negatively regulate ACE2 expression. Caco-2 cells treated with ascorbate and quercetin had reduced *ACE2* relative to the control, but not in the presence of quercetin alone [**8**]. There is more evidence that certain bioactives can increase ACE2 in the context of chronic disease. As described by **Wu [9]**, the peptide IRW (identified from egg whites) induces ACE2 expression and inhibits oxidative stress and inflammation in spontaneously hypertensive rats [**10**]. Treatment of aging mice with resveratrol also increased serum ACE2 [**11**]. Similarly, resveratrol consumption increased hepatic *ACE2* in mice fed post-weaning high-fat diets [*12*]. In summary, bioactives can inhibit ACE2 activity or induce its expression in rodent models of hypertension, obesity, and aging. Characterizing the impact of ACE2 on other animal models chronic disease will lead to improved understanding of how bioactives modulate ACE2 and the RAS. As discussed by others, understanding how bioactives modulate ACE2 is relevant to understanding the impact of diet on SARS-CoV-2 infection and resolution [**9, 13, 14**], and should be considered in the context of the many potential mechanisms by which bioactives may confer health benefits.

References

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13. Jack, N.L. (2020) *J. Food Bioactives* **11**: 11-12.
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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 was postponed to 2021. The new date will be announced in early 2021. Please note that this event will be a hybrid or a virtual one as well as travel conditions do not appear to be favourable.

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 in case the situation changes.

We welcome your participation in ISNFF2021 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 and market trends in functional foods and nutraceuticals
- New product development in and labelling of functional foods and nutraceuticals
- Chinese, Asian and other traditional medicine, and remedies
- Functional beverages, including caffeinated (tea, coffee, and cacao) products and human health
- Functional carbohydrates, lipids, proteins and peptides
- Gut microbiota, pre-and probiotics 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, immune enhancing and otherwise
- Soy and isoflavones in Asian diet
- Cereals, legumes and oilseeds, including supersedes and nuts
- 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
- Student poster sessions (e-posters and 5 min presentations)-Multiple fellowships and awards
- Other topics

UPCOMING NUTRACEUTICALS AND FUNCTIONAL FOODS EVENTS

April 2021

5-16, American Chemical Society Spring 2021 Meeting (virtual meeting)

May 2021

2-5, American Oil Chemists' Society Meeting, Portland, OR, USA

June 2021

10-11, NUTS 2021, Reus, Spain

July 2021

13-15, XXX International Conference on Polyphenols (ICP2020 Turku, Finland) (Virtual)

18-21, Institute of Food Technologists IFT 2021, Chicago, IL USA

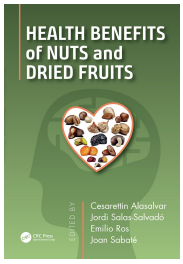
September 2021

23-24, Polyphenols Applications, Valencia, Spain

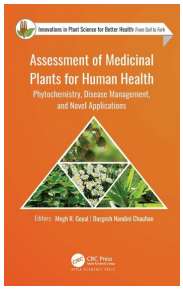
September-November 2021
TBD, ISNFF Annual Meeting, Nanjing, China

December 2021
15-20, Pacifichem Conference, Honolulu, USA

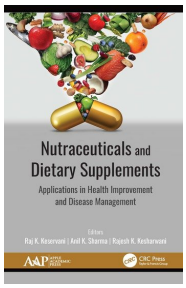
NEW TITLES



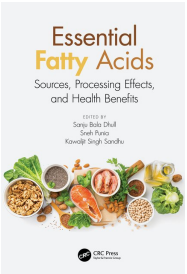
Health Benefits of Nuts and Dried Fruits
Cesarettin Alasalvar, Jordi Salas-Salvado, Emilio Ros, Joan Sabate
February 2020 by CRC Press



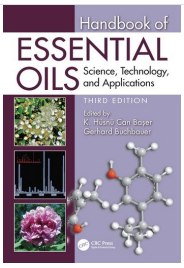
Assessment of Medicinal Plants for Human Health
Megh R. Goyal, Durgesh Nandini Chauhan
October 2020 by CRC Press



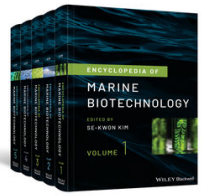
Nutraceuticals and Dietary Supplements
Applications in Health Improvement and Disease Management
Raj K. Keservani, Anil K. Sharma, Rajesh K. Kesharwani
November 2020 by CRC Press



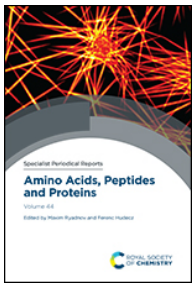
Essential Fatty Acids
Sources, Processing Effects, and Health Benefits
Sanju Bala Dhull, Sneh Punia, Kawaljit Singh Sandhu
October 2020 by CRC Press



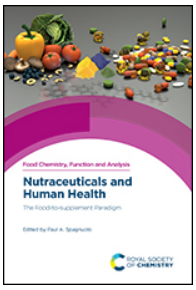
Handbook of Essential Oils, 3rd Edition
Science, Technology, and Applications
K. Husnu Can Baser, Gerhard Buchbauer
July 2020 by CRC Press



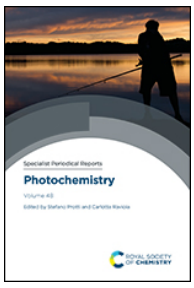
Encyclopedia of Marine Biotechnology
Se-Kwon Kim
August 2020 by Wiley-Blackwell



Amino Acids, Peptides and Proteins
Maxim Ryadnov, Ferenc Hudecz
December 2020 by RSC

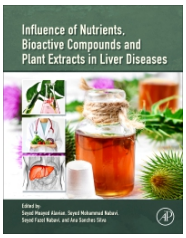


Nutraceuticals and Human Health
The Food-to-supplement Paradigm
Paul A Spagnuolo
March 2020 by RSC

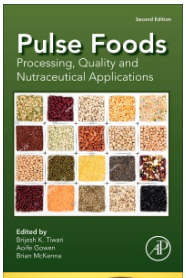


Photochemistry
Stefano Protti, Carlotta Raviola
November 2020 by RSC

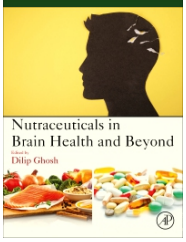
Olives and Olive Oil in Health and Disease Prevention, 2nd Edition
Victor Preedy Ronald Watson
December 2020 by Academic Press



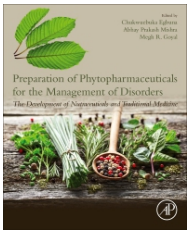
Influence of Nutrients, Bioactive Compounds, and Plant Extracts in Liver Diseases
Seyed M. Alavian, Seyed M. Nabavi, Seyed F. Nabavi, Ana Sanches Silva
November 2020 by Academic Press



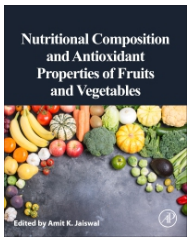
Pulse Foods, 2nd Edition
Processing, Quality and Nutraceutical Applications
Brijesh K. Tiwari Aoife Gowen Brian McKenna
November 2020 by Academic Press



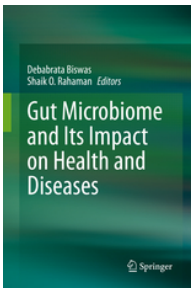
Nutraceuticals in Brain Health and Beyond
Dr. Dilip Ghosh
November 2020 by Academic Press



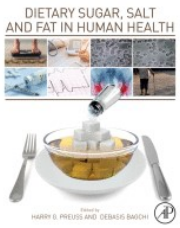
Preparation of Phytopharmaceuticals for the Management of Disorders
The Development of Nutraceuticals and Traditional Medicine
Chukwuebuka Egbuna Abhay Mishra Megh Goyal
November 2020 by Academic Press



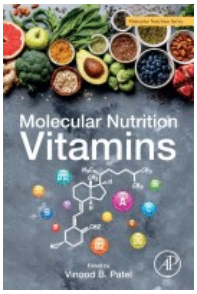
Nutritional Composition and Antioxidant Properties of Fruits and Vegetables
Amit Jaiswal
July 2020 by Academic Press



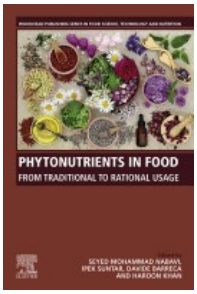
Gut Microbiome and Its Impact on Health and Diseases
Debabrata Biswas, Shaik Rahaman
September 2020 by Springer



Dietary Sugar, Salt and Fat in Human Health
Harry G. Preuss and Debasis Bagchi
September 2020 by Academic Press/Elsevier



Molecular Nutrition
Vitamins
Vinood B. Patel
October 2020 by Academic Press/Elsevier



Phytonutrients in Food
From Traditional to Rational Usage
Seyed Mohammad Nabavi, Ipek Suntar, Davide Barreca, Haroon Khan
September 2020 by Woodhead Publishing/Elsevier

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.

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, overtaken by Elsevier, was founded by Professor Fereidoon Shahidi who also serves as its Founding Editor who is also the principal Founding Member of ISNFF.

MEMBERSHIP APPLICATION 2021

All fees are in US dollar, but Canadian equiv. (US$ 1 = Can $1.35) will be accepted, if needed

Last Name: _____	**First Name:** _____
Membership #: ISNFF-	
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Email address:	

New Membership		☐
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Corporate Member	**$2,000**	☐
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Affiliate and Chapter Member	**$2,000**	☐

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