International Society for Nutraceuticals and Functional Foods

ISNFF Newsletter **Volume 3, Issue 1**

April 2010

The activities of the ISNFF during 2009 included a short course on nutraceuticals, functional foods and dietary supplements in Skiathos, Greece (May 25-26). This short course preceded the International Flavor Conference organized by the Agricultural and Food Chemistry Division of the American Chemical Society. The conference was attended by participants from 11 countries and was a total success.

The Annual Conference and pre-conference events of the ISNFF were held in San Francisco, CA, October 31-November 4, 2009. The two pre-conferences on "Antioxidants" and "Omega-3s and Beyond" were attended by participants from 12 countries. The Conference itself had 29 sessions including 3 plenary sessions. 180 Oral (48 pre-conference & 132 conference) and 94 poster presentations were made in these events; they were of the highest quality and cutting edge information was provided by internationally-renowned scientists in the field. The events attracted some 400 participants from academia, industry, government, and regulatory agencies with 180. The conference was complemented by a small, but important exhibition that displayed products and services as well as books and journals from different publishers.

Several awards were presented to firms and individuals. These included the following:

Industry Merit Award

KGK Synergize, Inc, London, ON, Canada

Science and Service Merit Award

Dr. Chin-Kun Wang, Chung Shan Medical University, Taiwan

Fereidoon Shahidi Fellowship Award

Leah Cahill, University of Toronto, Toronto, ON, Canada

Ying (Joy) Zhong, Memorial University of Newfoundland, St. John's, NL, Canada

Best Poster Presentation Awards

Anusha Samaranayaka (First Place), University of British Columbia, Vancouver, BC, Canada; Urado Daisuke (Second Place), Kyoto Prefectural University, Kyoto, Japan; and Shu-Ru Zhuang (Third Place), Chung Shan Medical University, Taichung, Taiwan

The industry and science awards included a plaque and those for Fereidoon Shahidi Fellowship award a plaque and $1,500 USD cheque each. The poster awards included a certificate and cheques for $500, 300 and 200 USD, respectively, for 1st, 2nd, and 3rd place recipients.

This year, the 2010 meeting of the ISNFF will be held October 11-15 in Bali, Indonesia and short course events in Ghent, Belgium (June 17 & 18) as well as St. John's, Canada (September 7).

Heartnut for Heart Health

Rong (Cao) Tsao, Guelph Food Research Centre, Agriculture & Agri-Food Canada

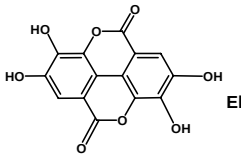
While most consumers are not aware of its existence, heartnut (*Juglan ailanthifolia* var. *cordiformis)* has become a recent favor of the North American nut growers and nut enthusiasts in the Great Lakes Region of Canada and the U.S., for its sweeter taste and natural heart-shape. Heartnut is a naturally occurring genetic oddity of the more common Japanese walnut (*J. ailantifolia*). Its hardy characteristic and the rapid increase in commercial production may bring to the region a great economic benefit.

Campbell CW1 Heartnut

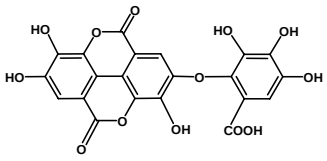
The nut, unlike the oval or egg-shaped Japanese walnut, is heart shaped, including the kernel. Typical sizes of heartnut range between 2 and 5 cm in length (See left). Commercial orchards normally grow grafted trees in order to ensure the production of heartnut with consistent heart-shape and good quality. Trees begin to bear fruits in 1-3 years, with commercial production expected in 6-8 years. At maturity, good heartnut trees are capable of producing an average of 1,000-3,000 kg/acre in Ontario, Canada, equivalent to California walnut production.

Heartnut contains similar phytochemical composition to the more commonly consumed Persian walnut. The macronutrients of heartnut are similar to those of walnuts, which contain 60-70% total oil, 13-18% protein, 4- 5% dietary fiber, and 3% starch. Other components include ~2% sugar and 0.34% total tannins and other micronutrients/constituents.

Phytochemicals of heartnut include both hydrophilic and lipophilic portions. The hydrophilic phytochemicals are mainly phenolic compounds, and are mostly found in a special protective tan-brown skin known as the pellicle which surrounds the kernel (5% of the fruit weight). These phenolic compounds are the first line of antioxidant defense for the highly oxidizable oils in the kernel. Ellagic acid and its derivatives, mostly in bound forms, are the dominant phenolic compounds (See right).



Ellagic acid



Valoneic acid dilactone

The average total lipid content of heartnut varieties was significantly lower (51%) than that of the walnut (60%), but the major fatty acid profiles were similar; *e.g.,* 18:2ω6, 18:1ω9, 18:3ω3, 16:0, and 18:0, in decreasing order. What is interesting to note, however, is that heartnut contained significantly higher PUFA (80.1%) than walnut (73.1%), and lower MUFA and SFA contents (15.7 *vs* 17.9%, and 3.87 *vs* 8.61%, respectively)[3]. The higher PUFA and lower SFA contents suggest that heartnut may potentially contribute more significantly to health promotion, compared to walnut.

Heartnut is also a rich source of tocopherols with a profile similar to the common walnut. The total tocopherol concentration in heartnut oil ranges from 12.84 to 20.03 mg/100 g, which is significantly lower than in walnut oil (from 22.22 to 30.80 mg/100 g). However, the contribution of γ-tocopherol to the total vitamin E homologues is higher (up to 96% of the total). These tocopherols are protectants for the highly unsaturated fat content in the kernel.

Phytochemical antioxidants in heartnut, *e.g.* phenolic compounds and tocopherols, have been found to contribute significantly to the total antioxidant activities measured using *in vitro* models. These antioxidants can partially explain some of the existing findings that consumption of nuts lowers the risk of several diseases, such as coronary heart disease (CHD) and type 2 diabetes. This inverse association is supported by studies that have shown frequent nut and seed consumption lowers the levels of inflammatory markers, and total and low-density lipoprotein (LDL) cholesterol concentrations. The positive health benefit of walnut is reported in increased levels of high-density lipoprotein (HDL) cholesterol concentration and apolipoprotein A-1. The cholesterol lowering effect was considered to arise from the polyunsaturated fatty acids (PUFA) and antioxidant phytochemicals.

A human clinical trial on the effect of heartnut consumption on health risks is yet to be conducted; however, the similar phytochemical profiles to walnut suggest that this special tree nut has a good potential as a reliable source of phytochemical antioxidants and bioactives. The lower phenolic content may also explain the "sweeter" taste of the heartnut that many consumers prefer. The high concentration of PUFA also adds to the value of heartnut. Considering heartnut breeding and growing has only been a recent trend, better quality heartnuts with enhanced nutritional value are just a matter of time.

References:

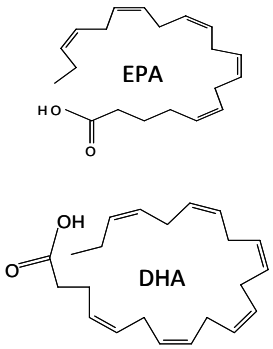
1. Li, L., Tsao, R., Yang, R., Kramer, J. K. G. and Hernandez, M. 2007. Fatty acid profiles, tocopherol contents, and antioxidant activities of heartnut (*Juglans ailanthifolia* Var. *cordiformis*) and Persian walnut (*Juglans regia* L.). *J. Agric. Food Chem., 55*, 1164-1169.
2. Li, L., Tsao, R., Yang, R., Liu, C., Zhu, H. and Young, J. C. 2006. Polyphenolic profiles and antioxidant activities of heartnut (*Juglans ailanthifolia* Var. *cordiformis*) and Persian walnut (*Juglans regia* L.). *J. Agric. Food Chem., 54*, 8033-8040.
3. Tsao, R. and Li, L., 2009. Phytochemical profiles and potential health benefits of heartnut (*Juglans ailanthifolia* var. *cordiformis*): A comparison with the common walnut (*Juglans regia* L.). *In*: Tree Nuts: Composition, Phytochemicals, and Health Effects (C. Alasalvar and F. Shahidi, eds.), CRC Press, Taylor & Francis Group, Boca Raton, FL, pp. 237-247.

Omega-3 Polyunsaturated Fatty Acids and Health

Fereidoon Shahidi, Department of Biochemistry, Memorial University of Newfoundland, St. John's, NL, Canada

Long-chain omega-3 polyunsaturated fatty acids (LC omega-3 PUFA) are extensively used as dietary supplements and as functional food ingredients. The omega-3 PUFA are present in the liver of white lean fish, the flesh of fatty fish and the blubber of marine mammals. Furthermore, single cell organisms have been used to produce omega-3 PUFA. Efforts have recently been extended to the production of LC omega-3 PUFA in certain plants such as those of brassica species and flax. However, the latter may face obstacles for commercialization in Europe where genetically modified organisms (GMO) remain a challenge due to lack of consumer acceptance. The role of LC omega-3 PUFA in reducing the level of triacylglycerols and the incidence of arrhythmias has been well demonstrated. Other research has indicated their efficacy in alleviating depression, Schizophrenia and other mental disorders, among others. New developments in application and delivery of omega-3 oils include their use in foods that are used within a short period of time as shown in the table. The delivery of omega-3s may also be achieved in the form of nano-emulsions or as microencapsulated products. In the supplement area, their potential use as a chromium complex as well as calcium salts has been established, but such products have not yet reached the marketplace. In addition, derivatives of omega-3 PUFA with other bioactives such as sterols and phenolics have been successfully prepared in our laboratories.

Regardless of their source, omega-3 PUFA are oxidatively unstable and need to be stabilized so that their delivery into food is not compromised and affected by the production of off-flavors. The stability of omega-3 oils may be achieved by their encapsulation/ microencapsulation, use of antioxidants or their combination. As omega-3 oils contain eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA) and possibly docosapentaenoic acid (DPA) or stearidonic acid (SDA), they undergo rapid oxidation and produce a number of hydroperoxides that readily unstable and breakdown to secondary oxidation products that possess off-flavors with low threshold values that make such oils or products in which they are incorporated unacceptable. Ocean Nutrition Canada has been a leading R & D Center as well as a producer of omega-3 oils and concentrates. The microencapsulated omega-3 oils may be produced using a complex coacervation process. This is followed by controlled formation of an outer shell that surrounds the agglomeration to produce a multi-shell particle. This type of microencapsulation allows a payload of up to 70% and a better opportunity for its use into a wide range of products. The oils as such remain in the microcapsules and only are released in the gastrointestinal tract; hence, they are used in a wide range of products including milk, orange juice, yogurt, and other products. The oils, so protected, were found to have similar beneficial effects to those in the free or in the capsule form at room temperature.



Our recent work has conjugated EPA, DHA, and DPA with a number of bioactive phenolic and polyphenolic compounds as well as phytosterols. Some of the products so obtained exhibited exceptional biological activities and this depended on the nature of the moieties present and the hydrophilic-lipophilic balance (HLB) of the molecules involved.

Different classes of food products in which omega-3 oils are used for fortification

Class	Items
Dairy	Milk, yogurt, yogurt-based drinks
Grain-based	Bread, cereals, pasta, bars
Confectionary	Sweets, candies, bars
Spreads	Margarine, butter, spreads
Dressings	Salad dressing, mayonnaise, etc.
Juices	Orange juice, fruit juices, etc.
Muscle foods	Meat, fish, and poultry products
Others	Specialty products, infant foods and formula

Animal studies confirmed the *in vitro* results and further investigations in this area are continuing to unravel the mechanisms of actions of products of interest. Improvement in the absorption of bioactives involved as well as their access to membrane and cell sites in mammals are of particular importance in the delivery of such products for rendering their health benefits and in disease risk reduction.

Further Readings and References:

1. Barrow, C.J., Nolan, C. and Holub, B.J. 2009. Bioequivalence of encapsulated and microencapsulated fish-oil supplementation. *J. Functional Foods, 1*, 38-43.
2. Kralovec, J.A., Ewart, H.S., Wright, J.H.D., Watson, L.V., Dennis, D. and Barrow, C.J. 2009. Production and bioavailability of calcium and magnesium salts of omega-3 fatty acids. *J. Functional Foods, 1*, 217-221.
3. Kralovec, J.A., Potvin, M.A., Wright, J.H.D., Watson, L.W., Ewart, H.S., Curtis, J.M. and Barrow, C.J. 2009. Chromium(III)-docosahexaenoic acid complex: Synthesis and characterization. *J. Functional Foods, 1*, 291-297.
4. Shahidi, F. 2006. Nutraceutical and Specialty Lipids and their Co-products, CRC Press, Taylor & Francis Group: Boca Raton, FL.
5. Shahidi, F. and Finley, J.W. 2001. Omega-3 Fatty Acids: Chemistry, Nutrition and Health Effects. ACS Symposium Series 788. American Chemical Society: Washington, DC.
6. Shahidi, F. and Miraliakbari, H. 2005. Omega-3 fatty acids in health and disease: Part 2 – Health effects of omega-3 fatty acids in autoimmune diseases, mental health and gene expression. *J. Med. Food, 8*, 133-150.
7. Shahidi, F. and Miraliakbari, H. 2004. Omega-3 fatty acids in health and disease: Part 1 – Cardiovascular disease and cancer. *J. Med. Food, 7*, 387-401.
8. Zhong, Y. and Shahidi, F. 2009. Fish in the Tea Pot: Do Catechin-PUFA Esters Offer Additional Benefits? Presented at the ISNFF Conference and Exhibition, San Francisco, CA, October 31- November 4.

ISNFF Short Course Series
International Forum and Practical Short Course on

Nutraceuticals, Functional Foods, and Dietary Supplements: Fundamentals, Applications, and Health Effects

Holiday Inn, Maaltekouter 3,
St. Denijs-Westrem 9051
Ghent, Belgium
June 17 & 18, 2010

Registration is Now Open!

Program

Organizer: Dr. Fereidoon Shahidi
Local Organizers: Prof. Roland Verhé, Dr. ir. Vera Van Hoed, and Ms. Ingrid Van Kerkhove

Day 1 – Thursday, June 17, 2010

8:25 a.m. Registration

8:55 a.m. Welcome and Opening Remarks
Dr. Fereidoon Shahidi (Memorial University of Newfoundland, Canada) and Prof. Roland Verhé (Ghent University, Belgium)

9:05 a.m. Application of Genomics, Proteomics, and Metabolomics in Nutraceuticals and Function Foods
Dr. Debasis Bagchi (InterHealth, USA)

9:35 a.m. Production of Oil and Value-Added Nutraceuticals from Agri-Food Processing By-Products
Dr. Roland Verhé and Dr. ir. Vera van Hoed (Ghent University, Belgium)

10:05 a.m. Omega-3 Oils and Novel Products in Food, Health Promotion and Health Care Cost Reduction
Dr. Fereidoon Shahidi (Memorial University of Newfoundland, Canada)

10:35-11:00 Nutrition Break & Free Discussion

11:00 a.m. Application of Omega-3 Oils in Foods and Emulsified Products
Dr. Charlotte Jacobsen (Danish Technical University, Denmark)

11:30 p.m. Functional Foods and Claims in the EU: A Critical Appraisal of the Actual Situation
Prof. Dr. ir. Em. André Huyghebaert (Ghent University, Belgium)

12:00 p.m. Promises and Unexpected Nutritional Effects of Partial Acylglycerols and Structural Significance of Products
Dr. Armand Christophe (Ghent University, Belgium)

12:30-2:00 Lunch Break & Free Discussion

2:00 p.m. Phenolic and Polyphenolic Antioxidants in Health and Disease: Absorption and Metabolism
Dr. Paul Kroon (Institute of Food Research, UK)

2:30 p.m. Oxidation Challenges in Nutraceuticals and Food Application of Omega-3 Oils
Dr. Mogens Andersen (Copenhagen University, Denmark)

3:00 p.m. Pre- and Probiotics in Functional Foods, Beverages, and Dietary Supplements
Prof. Ralf Hartemink (Wageningen University, The Netherlands)

3:30-4:00 Nutrition Break & Free Discussion

4:00 p.m. Omega-3 Oils and Novel Food and Dietary Supplement Products
TBD

4:30 p.m. Protein Hydrolyzates and Biopeptides in Nutrition and Health
Dr. Rotimi Aluko (University of Manitoba, Canada)

5:00 p.m. Seaweed and Marine Resources for Bioactive Compounds and Carotenoids
Dr. Kazuo Miyashita (Hokkaido University, Japan)

5:30 p.m. Aroma and Flavor Aspects of Functional Foods and Products
Dr. Inge Dirinck and Dr. Patrick Dirinck (Catholic Technical University, Belgium)

7:30-9:30 Dinner

Day 2 – Friday, June 18, 2010

8:30 a.m. Novel Beverages Containing Bioactives and Functional Ingredients
Presenter TBD (Frank Lipnizki, Alfa Laval Spendhagen)

9:00 a.m. Natural Health Products in Disease Risk Reduction: Collagen, Berries, Bound Chromium and Beyond
Dr. Debasis Bagchi (InterHealth, USA)

9:30 a.m. Dietary Phenolic Antioxidants and Health: Novel Modified Products and Unexpected Results
Dr. Fereidoon Shahidi (Memorial University of Newfoundland, Canada)

10:00 a.m. Structural Design for Functional Foods and Beverages: Heart Health and Weight Management
Dr. Sergey Melnikov (Unilever, The Netherlands)

10:30-11:00 Nutrition Break & Free Discussion

11:00 a.m. The Relative Importance of Bioactive Components for Nutrition and Health: A Critical Evaluation
Prof. Wim van Dokkum (TNO Quality of Life, The Netherlands)

11:30 a.m. Dairy Bioactives: Phospholipids and Membrane Specific Proteins
Dr. ir. Thien Trung Le (Ghent University, Belgium)

12:00 p.m. Optimized Process Technology for Refining Omega-3 and Specialty Oils
Prof. Roland Verhé (Ghent University, Belgium)

12:30 p.m. Antioxidants from Herbs and Spices in Production of Functional Meat-Based and Other Novel Products
Dr. ir. Evelyne Dooleghe (Ghent University, Belgium)

1:00-3:00 Lunch Break / Round Table and Concluding Remarks

Registration Fee Structure:
Participants: Euro 595, before May 17, 2010; Euro 695, after May 17, 2010
Students: Euro 245, before May 17, 2010; Euro 345, after May 17, 2010
Academic Discount: Euro 100
[Registration includes nutrition breaks, luncheons, and dinner]

For further information please contact the ISNFF Secretary:
Peggy Ann Parsons @
Tel: (709) 737-8239
Fax: (709) 737-4000
E-mail: ISNFFSecretary@gmail.com

We reserve the right to change speakers or make other necessary changes, as required.




International Society for Nutraceuticals & Functional Foods

ISNFF

Registration Form

International Forum and Short Course Announcement
Holiday Inn, Ghent, Belgium
June 17 & 18, 2010

First Name: _____ Middle Name: _____
Family Name: _____ Title: _____

Affiliation: _____

Address: _____
_____
_____

E-mail: _____ Tel: _____ Fax: _____

Categories	Before May 17, 2010	After May 17, 2010
Short Course Registration		
☐ Participants	EURO 595	EURO 695
☐ Students	EURO 245	EURO 345
Academic Discount: Euro 100 [Registration includes nutrition breaks, luncheons, and dinner (June 17 and 18)]		

Total amount: EURO _____

Payment:
Credit Card: __VISA
___MASTERCARD

Credit Card #: _____
Card Holder: _____
Expiry Date: _____

Please fill in the form and fax to the conference secretary, Peggy-Ann Parsons @ (709) 737-4000 or scan and E-mail to ISNFFSecretary@gmail.com).

ISNFF Short Course Series
Atlantic Fisheries Technology Conference (AFTC)

International Forum and Pre-Conference Short Course on

Marine Nutraceuticals

Delta Hotel and Conference Centre
120 New Gower Street, St. John's, NL, A1C 6K4
Canada
September 7, 2010

Registration is Now Open!

Tentative Program

Tuesday, September 7, 2010

8:00 a.m.	**Registration Opens**
8:30 a.m.	Welcome and Introductory Remarks Dr. Fereidoon Shahidi and Ms. Heather Manuel, Canada
8:35 a.m.	Marine Oil Resources and Markets Dr. Tony Bimbo, USA
9:05 a.m.	Marine Oil Products and Food Applications Mr. Robert Orr and Ms. Sharon Spurvey, Canada
9:35 a.m.	Chemistry & Health Benefits of Marine Oils and Their Novel Omega-3 Derivatives Dr. Fereidoon Shahidi and Ms. Ying (Joy) Zhong, Canada
10:05 a.m.	Processing of Marine Oil and Total Removal of Environmental Contaminants Prof. Roland Verhé, Belgium
10:35-11:00	**Nutrition Break & Free Discussion**
11:00 a.m.	Algal Oils Dr. Roberto Armenta, Canada
11:30 a.m.	Protein Hydrolyzates from Marine Resources Dr. Hordur G. Kristinsson, Iceland
12:00 p.m.	Seaweed and its Bioactive Components Dr. Kazuo Miyashita, Japan

12:30 p.m. Seal Blubber Oil
Dr. Cosmos Ho, Canada

1:00-2:00 Lunch Break / Round Table and Concluding Remarks

2:00 p.m. Processing of Marine and Algal Oils: Production of Concentrated EPA, DPA, and DHA-Based Supplements
Dr. Udaya Wanasundara, Canada

2:30 p.m. Marine and Other Oils in Specialty Applications and in Biofuel Production
Prof. Roland Verhé, Belgium

3:00 p.m. Marine Products as Pharmaceutical
Dr. Russell Kerr, Canada

3:30-4:00 Nutrition Break & Free Discussion

4:00 p.m. Collagen and Gelatin from Seafood Processing By-Products, TBD

4:30 p.m. Quality Preservation of Marine Oils and Seafoods
Dr. Charlotte Jacobsen, Denmark

5:00 p.m. Glucosamine, Chitin, Chitosan and their Oligomers
Dr. Se-Kwon Kim, Korea

5:30 p.m. Novel Products, New Resources, and Strategic Planning for the Future
TBD

How to get to St. John's (YYT)

The city of St. John's, the capital of the province of Newfoundland and Labrador, is the oldest metropolitan city in North America's Atlantic coast and the most eastern part of the continent. With a population of ~200,000, it is readily accessible by air & sea. The St. John's International Airport is serviced by several airlines including Air Canada, Continental, Westjet, and Porter.

Hotel Information

The Delta Hotel and Conference Centre is located in downtown St. John's near the waterfront. The special hotel rate for the AFTC is $145 CDN plus applicable taxes for single or double occupancies. For reservations, call directly (709) 739-6404 or Toll-free (888) 793-3582 or book online www.deltahotels.com

Conference Registration

Participants: $350 CDN, before August 1, 2010; $400 CDN, after August 1, 2010
Students: $150 CDN, before August 1, 2010; $200 CDN, after August 1, $200

For questions, please contact Dr. Fereidoon Shahidi at Tel: (709) 737-8552; Fax: (709) 737-4000; or E-mail: fshahidi@gmail.com

International Society for Nutraceuticals & Functional Foods

Atlantic Fisheries Technology Conference (AFTC)

Registration for the Pre-Conference Short Course on Marine Nutraceuticals

Organized by
International Society for Nutraceuticals & Functional Foods (ISNFF)
Delta Hotel and Conference Centre
St. John's, Newfoundland, Canada
September 7, 2010

First Name: _____ Middle Name: _____
Family Name: _____ Title: _____
Affiliation: _____

Address: _____
_____
_____

E-mail: _____ Tel: _____ Fax: _____

Categories	Before August 1, 2010	After August 1, 2010
Short Course Registration		
☐ Member / Non-member	CAN $350	CAN $400
☐ Student member / Non-member	CAN $150	CAN $200

Total amount: CDN $_____

Payment:
Credit Card: __VISA
___MASTERCARD

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Expiry Date: _____

Please fill in the form and fax to the conference secretary, Peggy-Ann Parsons @ (709) 737-4000 or scan and E-mail to ISNFFSecretary@gmail.com).

International Society for Nutraceuticals & Functional Foods

2010 Annual Conference

Nutraceuticals, Functional Foods, and Dietary Supplements: Science, Methodologies, and Applications

October 11-15, 2010
Inna Grand Bali Beach Hotel, Sanur, Bali

International Advisory Board

Dr. Cesarettin Alasalvar (Turkey)
Mr. Anthony Almada (USA)
Dr. Anton Apriyantono (Indonesia)
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Dr. Zhen-Yu Chen (Hong Kong)
Ms. Audra Davies (USA)
Dr. Colin Dennis (UK)
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Dr. Se-Kwon Kim (Korea)
Dr. Hannu J. Korhonen (Finland)
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Dr. Fereidoon Shahidi (Canada)
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Dr. Chin-Kun Wang (Taiwan)
Dr. Paul Kroon (UK)
Dr. Hanny Wijaya (Indonesia)
Dr. Roland Verhé (Belgium)
Dr. Rickey Yada (Canada)
Dr. Jerzy Zawistowski (Canada)

Conference Co-Organizers

Dr. Fereidoon Shahidi (Canada)
Dr. Chi-Tang Ho (USA)
Dr. Debasis Bagchi (USA)
Dr. Chin-Kun Wang (Taiwan)

Local Committee Chair

Dr. Anton Apriyantono (Indonesia)

Conference Symposia

- Fermented foods
- Asian and other traditional functional foods
- Palm-based nutraceuticals and health products
- Spices and tropical foods
- Herbal and traditional medicinal products
- Cacao and other caffeinated products
- Nutraceuticals and functional foods in health and disease (heart health, cancer, diabetes, metabolic syndrome, *etc.*)
- Nutraceuticals for obesity and weight control
- Omega-3 and other nutraceutical oils
- Marine nutraceuticals
- Nutraceutical and functional beverages
- Pre-, pro- and synbiotics
- Protein hydrolysates and biopeptides
- Phytochemicals: phenolics, polyphenolics, carotenoids, *etc.*
- Delivery systems for nutraceuticals and functional food ingredients, including nano-technology
- Absorption, metabolism and action mechanism of nutraceuticals and functional food ingredients
- Nutrigenomics, proteomics, and metabolomics
- Global regulations, marketing and the business of nutraceuticals, dietary supplements, and functional foods
- Analytical methodologies
- Quality assurance for nutraceuticals, dietary supplements, and functional food ingredients
- Voluntary papers (both oral and poster)

Pre-Conference

Nutraceutical Ingredients: Challenges, Formulations, Flavours, Regulations and Marketing

For further information, visit: ***isnff.org***

Disclaimer: Program details and speakers may change

2010 ISNFF Conference Registration
October 11-15, 2010
Inna Grand Bali Beach Hotel, Sanur, Bali

First Name: _____ Middle Name: _____

Family Name: _____ Title: _____

Affiliation:_____

Address: _____

_____

E-mail: _____ Tel: _____ Fax: _____

Categories		Till August 30, 2010	After August 30, 2010
Conference registration	Member	USD $425	USD $495
	Non-member	USD $495	USD $575
	Student member	USD $195	USD $245
	Student non-member	USD $245	USD $295
	Exhibitor	USD $2,995 (includes 2 registrations) Double USD $4,995	USD $4,000 Double USD $6,000
Pre-conference Nutraceutical Ingredients: Challenges, Formulations, Flavours, Regulations and Marketing		USD $495	USD $595
Conference registration, membership		USD $520	USD $590
Conference registration, membership, and Journal		USD $620	USD $720
Gala Dinner		USD $50	USD $65

If registering for both the pre-conference and the conference, deduct $50.
Members, deduct $45 for pre-conference registration.

Payment: Total amount: USD $
Certified Cheque: Payable to the ISNFF
Credit Card: VISA Credit Card #:
MASTERCARD Card Holder:
Expiry Date:

Please fill in the form and fax to the conference secretary, Peggy-Ann Parsons @ (709) 737-4000 or scan and E-mail to ISNFFSecretary@gmail.com).

ISNFF Title and Abstract Submission

CALL FOR PRESENTATION PAPERS 2010

Nutraceuticals, Functional Foods, and Dietary Supplements: Science, Methodologies, and Applications

October 11-15, 2010

Inna Grand Bali Beach Hotel, Sanur, Bali

I would like to attend and present:	☐ Oral ☐ Poster ☐ Oral or Poster
Title:	
Abstract (150 words or less):	
Authors: (underline the presenting author):	
Address:	
Tel:	
Fax:	
E-mail:	

Deadlines: Title and abstract submission, respectively, May 31 and August 30, 2010

(Complete form and return to Peggy-Ann Parsons, Fax: 1-709-737-4000 or E-mail: ISNFFSecretary@gmail.com)

UPCOMING NUTRACEUTICAL AND FUNCTIONAL FOODS EVENTS

April 2010

16-17. International Probiotics Association World Congress 2010; Miami, FL, USA
18-22. 6th Conference on Aromatic and Medicinal Plants of Southeast European Countries (CMAPSEEC); Antalya, Turkey
26. NutraIngredients Antioxidants 2010; Brussels, Belgium

May 2010

18-20. Vitafoods 2010 – The Global Nutraceutical Event; Geneva, Switzerland

June 2010

1-4. 3rd International Symposium on Propionibacteria and Bifidobacteria: Dairy and Probiotic Applications; Oviedo, Spain
6-11. Bioactive Lipids: Biochemistry and Diseases; Kyoto, Japan
15-17. International Scientific Conference on Probiotics and Prebiotics; Kosice, Slovakia
17-18. ISNFF Short Course on Nutraceuticals, Functional Foods, and Dietary Supplements: Fundamentals, Applications, and Health Effects; Ghent, Belgium
23-25. 7th Symposium on Gut Microbioloby (Rowett-INRA 2010); Aberdeen, UK
24-25. Western Canadian Functional Food & Natural Health Product Network (WCFN) 11th Annual Conference; location in Canada TBD

August 2010

22-26. IUFoST 2010: 15th World Congress of Food Science and Technology; Cape Town, South Africa

September 2010

7. ISNFF Short Course on *Marine Nutraceuticals* in conjunction with the Atlantic Fisheries Technology Conference; St. John's, NL, Canada

October 2010

11-15. ISNFF 2010 Annual Conference; Bali, Indonesia
13-15. Health Ingredients Japan, 2010; Tokyo, Japan
16-19. 9th International Symposium on the Role of Soy in Health Promotion and Chronic Disease Prevention and Treatment; Washington, DC, USA
26-28. NUCE International 2010; Milan, Italy

November 2010

16-18. Health Ingredients Europe & Natural Ingredients; Madrid, Spain

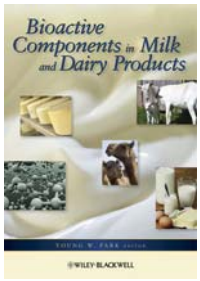
December 2010

15-20. Pacifichem 2010; Honolulu, HI, USA. (Agrochemistry has several symposia of interest on nutraceuticals, phytochemicals, and antioxidants).

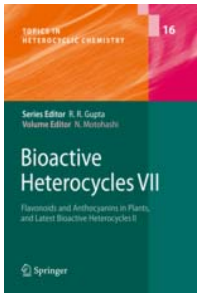
International Society for Nutraceutical and Functional Foods

NEW TITLES FOR 2009 and 2010 (only those already published)

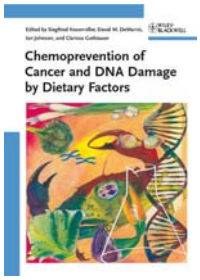
Listed alphabetically below are a number of recently published and upcoming titles dealing with nutraceuticals and functional foods.



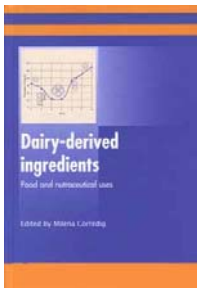
Bioactive Components in Milk and Dairy Products, Editors: Young W. Park, Wiley-Blackwell, 2009, pp 440.



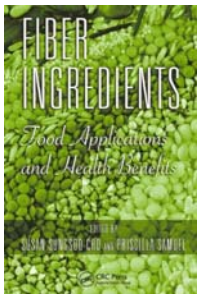
Bioactive Heterocycles VII, Editor: Noboru Motohashi, Springer, 2009, pp 236.



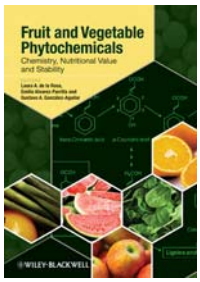
Chemoprevention of Cancer and DNA Damage by Dietary Factors, Editors: Siegfried Knasmüller, David M. DeMarini, Ian Johnson, and Clarissa Gerhäuser, Wiley-Blackwell, 2009, pp 838.



Dairy-Derived Ingredients: Food and Nutraceutical Uses, Editor: Milena Cooredig, CRC Press, 2009, pp 720.

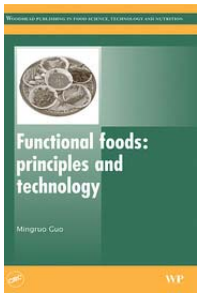


Fiber Ingredients: Food Applications and Health Benefits, Editor: Susan Sungsoo Cho, CRC Press, 2009, pp 480.

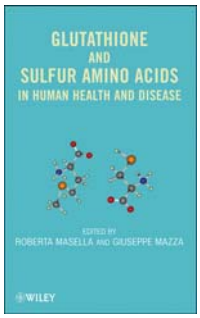


Fruit and Vegetable Phytochemicals: Chemistry, Nutritional Value and Stability, Editors: Laura A. de la Rosa, Emilio Alvarez-Parrilla, and Gustavo A. González-Aguilar, Wiley-Blackwell, 2010, pp 384.

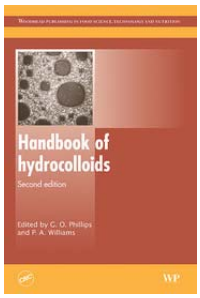
Functional and Specialty Beverage Technology, Paul Paquin, CRC Press, 2009.



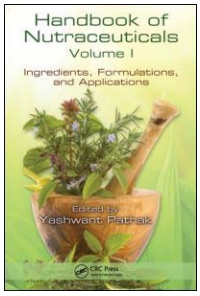
Functional Foods: Principles and Technology, Editor: Mingruo Guo, CRC Press, 2009, pp 358.



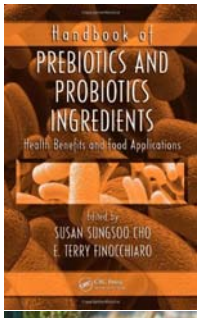
Glutathione and Sulfur Amino Acids in Human Health and Disease, Editor: Roberta Masella and Giuseppe Mazza, Wiley-Blackwell, 2009, pp 598.



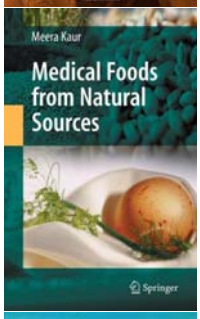
Handbook of Hydrocolloids, 2nd Edition, Editors: G.O. Phillips and P.A. Williams, CRC Press, 2009, pp 472.



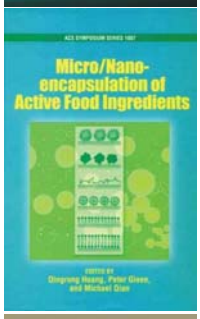
Handbook of Nutraceuticals Volume 1. Ingredients, Formulations, and Applications, Editor: Yashwant Pathak, CRC Press, 2009, pp 400.



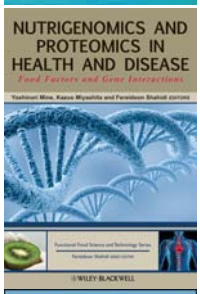
Handbook of Prebiotics and Probiotics Ingredients: Health Benefits and Food Applications, Editor: Susan Sungsoo Cho and E. Terry Finocchiaro, CRC Press, 2009, pp 454.



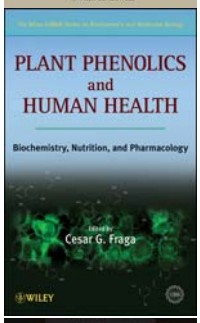
Medical Foods from Natural Sources, Meera Kaur, Springer, 2009, pp 212.



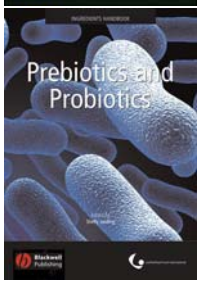
Micro/Nanoencapsulation of Active Food Ingredients, Editors: Qingrong Huang, Peter Given, & Michael Qian, American Chemical Society, 2009, pp 328.



Nutrigenomics and Proteomics in Health and Disease: Food Factors and Gene Interactions, Editors: Yoshinori Mine, Kazuo Miyashita, and Fereidoon Shahidi, Wiley-Blackwell, 2009, pp 412.



Plant Phenolics and Human Health: Biochemistry, Nutrition and Pharmacology, Editor: Cesar G. Fraga, 2009, pp 593.



Prebiotics and Probiotics, 2nd Edition, Editor: Shelly Jardine, Wiley-Blackwell, 2009, pp 320.