

# Soy & Health



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## Review finds soy does not have feminising effects on men

A new study published in *Fertility & Sterility*<sup>1</sup> has found that soy does not have feminising effects on men. The review, by Dr Mark Messina<sup>2</sup>, examined published data from over 150 clinical studies to critically evaluate the effects of soy isoflavones on men. Results show that soyfood consumption has no effect on circulating levels of testosterone or estrogen, sperm count, semen quality, breast size or erectile function in men and concludes that there is no evidence indicating that the isoflavones or other components of soyfoods exert feminising effects on men.

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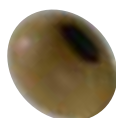
Soy isoflavones have a chemical structure similar to estrogen and exert estrogen-like effects in some tissues under certain conditions. Consequently concerns have been raised that soy isoflavones have feminising effects in men and adversely affect male reproductive health. Findings supporting this concern include those from a pilot epidemiological study that linked soy intake with lower sperm concentration among infertile men, a case report linking excessive isoflavone intake with raised estrogen levels and gynecomastia (development of abnormally large mammary glands in males), limited clinical research showing soy intake lowers blood testosterone levels, and rodent research suggesting isoflavone (daidzein) exposure can lead to erectile dysfunction.

However, according to this latest review, the clinical evidence overwhelmingly indicates that there is essentially no basis for concern. Isoflavone exposure at levels even greatly exceeding reasonable dietary intakes does not affect blood testosterone or estrogen levels in men or sperm and semen parameters. The erectile dysfunction-related findings in rats can be attributed to excessive isoflavone exposure and to differences in isoflavone metabolism between rodents and humans. The author concludes that men can feel confident that making soy a part of their diet will not compromise their virility or reproductive health.

1. M Messina 2010, *Fertility & Sterility* 1 May 2010 (Vol. 93, Issue 7, Pages 2095-2104)

doi:10.1016/j.fertnstert.2010.03.002. (<[http://www.fertnstert.org/article/S0015-0282\(10\)00368-7/abstract](http://www.fertnstert.org/article/S0015-0282(10)00368-7/abstract)>).

2. Mark Messina PhD. Department of Nutrition, School of Public Health, Loma Linda University, Loma Linda, California, USA regularly consults for companies that manufacture and/or sell soyfoods and/or isoflavone supplements, and is Executive Director of the Soy Nutrition Institute, a science-based organisation that is funded in part by the soy industry and the United Soybean Board.



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## 2

### Vegetarian and Vegan Foundation launches soy guide

The health benefits of eating soy are presented in a new guide published by the Vegetarian and Vegan Foundation (VVF). "*The Soya Story: Everything you wanted to know about Soya. The truth about how it impacts our health and the environment*" aims to set the record straight on health and environmental issues around the soybean.

According to Dr Justine Butler, VVF senior health campaigner and co-author of the guide: "There is a lot of misinformation and complete bunkum about soya. VVF get more nutritional enquiries about soya than any other subject. Every day someone asks us if soya is safe, can it harm children? Does it contain hormones? This 60 page full colour guide describes the

nutritional benefits of soyfoods and explains what the scientific research really shows. It will leave people in no doubt that soyfoods are a healthy, nutritious and safe food for people of all ages."

The easy-to-read colour guide explains the nutritional benefits of soyfoods and describes the wide range of positive health effects, from lowering the risk of heart disease to reducing menopausal hot flashes. It also addresses concerns about soy and breast cancer, thyroid function and explores the safety of soy infant formula. The section on soy and the environment addresses important questions about soy farming and deforestation. The guide also includes practical information and recipe ideas. The guide costs £3.30 (inc p&p) and is available from the Vegetarian & Vegan Foundation, tel: +44 (0)117 970 5190 (<http://www.vegetarian.org.uk>).

### Australian soybean a hit in Japan

A new soybean variety from Australia's Commonwealth, Science & Industrial Research Organisation (CSIRO) is gaining popularity in Japan due to its enhanced suitability as an ingredient in traditional Japanese dishes. Bred by CSIRO from an old Japanese variety the Bunya soybean produces a suite of proteins that gel quickly and firmly - important characteristics for making a range of soy-based foods like tofu and custard. Bunya has become the preferred Australian soybean variety sold in Japan, and the preferred variety used by Australian tofu manufacturers, because it has a traditional Asian flavour and its large seeds produce higher yields of soymilk and custard. Farmers that grow the Bunya soybean can also see benefits, such as its increased yields of better quality beans when grown in favourable conditions.

According to CSIRO scientist, Dr Andrew James: "Bunya plants are small which means they can be planted more densely than other soybean varieties. This, combined with the very large seeds they produce, increases Bunya yields compared to other soybeans." Bunya also has a trait from tropical soybean varieties which enables it to extend its juvenile phase making it more suited to a wider range of growing environments than other soybean varieties. Bunya was selected and released via the National Soybean Breeding Program funded by the Grains Research and Development Corporation (<http://www.csiro.au/news/Bunya-soybeans.html>).

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**Important Dates to Remember:**

<b>July 1, 2010</b> Call for Papers Deadline	<b>September 17, 2010</b> Early Bird Registration Deadline
<b>July 30, 2010</b> Online Registration Discount Deadline	<b>September 30, 2010</b> Last Day for Advance Registration

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# 3

## NIH sponsored workshop provides guidelines for soy research

Participants in a workshop sponsored by the US National Institutes of Health (NIH) have developed guidelines on designing and evaluating clinical research studies investigating soy. These guidelines represent the first of their kind in the field of soy research and are an important tool for increasing the consistency of study design and validity of outcomes in future clinical research on soy.

The workshop, "Soy Protein/Isoflavone Research: Challenges in Designing and Evaluating Intervention Studies", was supported by six NIH components including: Office of Dietary Supplements, National Center for Complementary and Alternative Medicine, National Cancer Institute, National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institute on Aging, and the NIH Division of Nutrition Research Coordination.

Past results of clinical studies on soy have been inconsistent and difficult to compare, which could be attributed to a number of factors, including varying product composition and dosing, study adherence, and sample size. The new guidelines are intended to improve the quality of future research studies of soy and address:

- the need for sound justification for studying the health effects of soy in humans;
- approaches to understanding and ensuring product composition and integrity;
- methods for assessing exposure to non-study soy and intervention adherence;
- some appropriate analytical methods to test soy products;
- the importance of understanding how soy is processed and how it acts in the body;
- the role that genetic make-up may play in the health effects of soy.

While the guidelines are not requirements, it is suggested that investigators, journal editors, study sponsors, and protocol reviewers may wish to consider these guidelines for a variety of purposes, including study design and implementation, reporting results, and interpretation of published studies.

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The Guidelines are published in the June 2010 edition of the Journal of Nutrition (Klein MA, et al. Guidance from an NIH Workshop on Designing, Implementing, and Reporting Clinical Studies of Soy Interventions. The Journal of Nutrition. 2010; 140(suppl):1192S-1204S (<<http://jn.nutrition.org/cgi/reprint/140/6/1192S.pdf>>).

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# 4

## Healthy eating is also good for the planet

At a recent event at the Royal Institute of Public Health on 21st Century Diets, leading experts argued the case for more plant-based eating for health as well as environmental reasons. Mark Driscoll, head of the World Wildlife Fund (WWF) UK's One Planet Food Programme highlighted why we must support more plant-based healthy eating guidance to help meet the UK's target of 80% reduction in green house gas emissions: "We are living 40% beyond the earth's ecological limit and accumulating an ecological debt. Food accounts for 23% of global ecological footprint and in the UK the food we eat contributes 20% of our carbon footprint, but when we consider the land use change this rises to 30%. If the food industry is to play its part in keeping temperature rises below two degrees, emissions need to be cut by at least 70% by 2050. It is the expert view that removing meat from the diet and replacing it with plant-based foods with similar protein content reduces carbon footprint by about 20%. Replacing all animal products removes about 30%. However, this certainly doesn't mean no meat, but it is likely to mean less meat and more plant-based foods. The more progress made in terms of production efficiencies, green technology, waste reductions etc, the less impactful the behavioural changes will need to be."



Dr Janice Harland (HarlandHall Associates) and dietitian, Dr Lynne Garton, highlighted the health benefits of a plant protein-based diet suggesting that as people begin to make the transition to plant-based eating they are also likely to begin to incorporate more soyfoods into their diet. Soy is the only plant source of protein that is equivalent to meat and dairy protein but is naturally low in saturated fat and is produced more efficiently than meat and dairy.

The UK's Food Standards Agency Eat Well plate model on healthy eating now includes soy and if diets shifted to meet these guidelines there would be some significant gains for the environment and health. However, it was noted that the model was not developed for sustainability but if it were more gains for the environment would be likely. In conclusion what we eat and how that affects our wellbeing and the wellbeing of the planet can no longer be considered separately.

The event was organised for health professionals by Alpro UK (<http://www.alprosoya.co.uk>).

## Engineered foods to combat overeating

Contract research company, NIZO, is participating in an EU consortium, NeuroFAST, looking at why people eat too much. The Consortium involves 13 teams from 7 countries and will explore the neurobiology of addiction and eating behaviour as well as the complex socio-psychological forces that lead to its dysregulation. The findings will shed light on which new foods can be engineered to help to combat overeating. This 6 million Euro project started on 1 April 2010 and runs until 2015.

NIZO's role is to engineer, develop and produce foods to test which of a product's properties affect overeating. NIZO will evaluate specifically designed model foods. By selectively modifying, substituting, removing or microencapsulating their components they will test the reward value of sensory properties, metabolic effects, physico-chemical structure, and nutrient composition. The 12 other groups in the consortium, led by the University of Gothenburg, will be studying the processes connected with the addiction system in the brain and looking for answers as to why people abuse food or eat due to anxiety and stress.

Companies interested in participating and to see how their ingredients or foods perform in these studies are welcome to contact Dr Rianne Ruijschop at [Rianne.Ruijschop@nizo.nl](mailto:Rianne.Ruijschop@nizo.nl) or tel: +31 318 659 645. NIZO is based in The Netherlands with offices in USA, France, UK, and Japan (<http://www.nizo.com>).

## Snack Food Technology Forum 2010

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# 5

## Diet containing soy, fruit and vegetables may protect against breast cancer

The objective of this study was to evaluate whether the protective effect of soy is due to soy isoflavones alone or to their combination with other beneficial dietary factors in an Asian population. Using principal components analysis, the researchers previously identified a 'meat-dim sum' pattern characterised by meat, starch, and dim sum items and a 'vegetable-fruit-soy' pattern characterised by cruciferous vegetables, fruit, and tofu items in a population-based cohort of Singapore Chinese initiated between 1993 and 1998. Component scores representing intakes of each pattern were used in multivariable Cox regression models to analyse the relation between diet at baseline and breast cancer incidence. As of 31 December 2005, 629 incident breast cancer cases had been diagnosed among the 34,028 women. The researchers observed a dose-dependent trend for decreasing breast cancer risk among postmenopausal women with a greater intake of the vegetable-fruit-soy dietary pattern. A stronger association for the vegetable-fruit-soy pattern was observed among postmenopausal women with 5yr of follow-up. No trend was observed for a greater intake of the meat-dim sum dietary pattern and increased breast cancer risk. The researchers conclude that their findings support the hypothesis that a diet characterised by vegetables, fruit, and soy has an early-acting protective effect on breast cancer.

LM Butler et al, *AJCN*, doi:10.3945/ajcn.2009.28572 Vol. 91, No. 4, 1013-1019, April 2010 (<http://www.ajcn.org/cgi/content/abstract/91/4/1013?etoc>).

## Soy isoflavones and insulin resistance

Two recent studies looking at the effect of soy isoflavones on insulin resistance come to different conclusions.

Spanish researchers evaluated whether a standard dose of 40mg of soy isoflavones prescribed in routine clinical practice for treatment of menopausal symptoms has some influence on glucose homeostasis in postmenopausal women with insulin resistance (IR). A total of 116 postmenopausal women with IR were randomly assigned to a group of Mediterranean diet and physical exercise (control group) or a group of Mediterranean diet, physical exercise, and daily oral ingestion of 40mg of soy isoflavones (soy isoflavones group). Anthropometric measures, Kupperman Index values, Cervantes Scale score, and blood samples for glucose, insulin, lipid profile, creatinine, uric acid, homocysteine, folic acid, vitamin B12, selenium, and estradiol were determined at baseline and at intervals of 6, 12, 18, and 24 months. Mean homeostasis model assessment of IR (HOMA-IR) values remained unchanged from the baseline in the control group but steadily decreased in the soy isoflavones group at 6 months. There were no statistically significant differences between both groups in mean HOMA-IR scores at baseline, but statistically significantly lower values were found in the soy isoflavones group at 6 months, 12 months, 18 months, and 24 months. Changes in HOMA-IR values were also clearly related to body mass index, abdominal circumference, and treatment when a linear regression analysis was carried out. The researchers concluded that daily intake of 40mg of soy isoflavones together with a Mediterranean diet and exercise reduced IR in postmenopausal women who had IR in the first place. It was significantly better than lifestyle changes alone.

P Laneza et al, *Menopause* March 2010; 17(2) p372-8, doi: 10.1097/gme.0b013e3181ba56fa ([http://journals.lww.com/menopausejournal/Abstract/2010/17020/Soy\\_isoflavones,\\_Mediterranean\\_diet,\\_and\\_physical.27.aspx](http://journals.lww.com/menopausejournal/Abstract/2010/17020/Soy_isoflavones,_Mediterranean_diet,_and_physical.27.aspx)).

A Chinese study investigated whether soy protein with or without isoflavones could improve glycaemic control and insulin sensitivity in postmenopausal women with early hyperglycaemia. The study was a randomised, double-blind, placebo-controlled trial that included 180 postmenopausal Hong Kong Chinese women with prediabetes or early untreated diabetes. After a 2-week adaptation period, participants were randomly assigned to 1 of 3 arms to receive 15g soy protein and 100mg isoflavones, 15g milk protein and 100mg isoflavones, or 15g milk protein on a daily basis for 6 months. Three- or 6-month treatments with soy protein with or without isoflavone supplementation did not result in favourable changes for glycemic control and insulin resistance. The researchers conclude that this 6-month randomised controlled trial did not support the hypothesis that soy protein (with or without isoflavone supplementation) had beneficial effects on glycemic control and insulin sensitivity among postmenopausal Chinese women. It was also noted that the favourable change in postload glucose needs to be further confirmed.

Z-M Liu et al, *American Journal of Clinical Nutrition*, Vol. 91, No. 5, 1394-1401, May 2010, doi:10.3945/ajcn.2009.28813 (<http://www.ajcn.org/cgi/content/abstract/91/5/1394?etoc>).



# 6

## Thermal processing changes isoflavone properties

In this study researchers compared antiproliferation, antioxidant activities and total phytochemicals and individual isoflavone profiles in soymilk processed by various methods including traditional stove cooking, direct steam injection, direct ultra-high temperature (UHT), indirect UHT, a two-stage simulated industry method, and a selected commercial soymilk product. Various processing methods significantly affected total saponin, phytic acid, and total phenolic content and individual isoflavone distribution. The laboratory UHT and the two-stage processed soymilk showed relatively higher total phenolic content, total flavonoid content, saponin and phytic acid than those processed by traditional and steam processed methods. Thermal processing caused obvious inter-transformation but did not cause severe degradation except for breaking down of aglycones. Thermal processing significantly increased antioxidant capacities of soymilk

determined by chemical analyses, but decreased cellular antioxidant capacities as compared to the raw soymilk. The raw and all processed soymilk exhibited antiproliferative activities against human HL-60 leukemia cells, AGS gastric tumour cells, and DU145 prostate cancer cells in a dose-dependent manner. The raw soymilk, but not the processed soymilk, showed a dose-dependent antiproliferative effect against colorectal adenocarcinoma Caco-2 cells. The researchers conclude that their results show that various thermal processing methods change not only phytochemicals but also potential health-promoting effects of soymilk.

B Xu et al, J. Agric. Food Chem, 2010, 58(6), pp3558–3566 DOI: 10.1021/jf903796c (<http://pubs.acs.org/doi/abs/10.1021/jf903796c>).

## Microwave-assisted soy isoflavone extraction method tested

The purpose of this research was to design, test, and optimise a continuous microwave extraction method using temperature and residence time during and after microwave exposure as optimising parameters for extraction of major isoflavones from soy flour. The extraction yield of 4 isoflavones at different heating temperatures (55° and 73°C) and extraction times (0, 4, 8, 12, and 16 min) were investigated and compared with yields provided by a conventional solvent extraction method. The microwave prototype consisted of multiple, commercially available, batch-type, house-hold microwave units placed on top of each other in series to impart a continuous operation. The optimum parameters for microwave-assisted extraction of isoflavones were 73°C for 8 minutes using a 3:1 ethanol-to soy flour ratio. At these parameters, the total yield of isoflavones extracted doubled, while the amount of oil extracted was 12%. The researchers concluded that continuous microwave-assisted solvent extraction is a viable method for extraction of soybean isoflavones at relatively short residence times and high throughput.

BG Terigar et al. Bioresource Technology, 2010;101(7):2466-2471 (<http://www.sciencedirect.com/science/journal/09608524>).

## Russian study shows soy protein consumption helps lower cholesterol

Russian subjects were used in this study because the death rate in Russia from heart disease is very high. Russian style cookies were used as a favourable way of introducing 30g protein a day from soybean protein isolate (SPI) or skimmed curd protein (SMP) into the diet. Thirty subjects with hyperlipidemia were recruited but only 28 (19 females and 9 males aged 50±2 y) completed the trial. They were randomly assigned to two groups and were given either cookies for 2 months separated by a month-long washout interval in a cross-over design. Fasting blood samples were drawn before and after the dietary treatments. Fasting blood samples at 1 month were also measured as a health check and to observe the trends of the blood parameters in the middle of the study period. Serum samples were used for the lipid and other biochemical measurements. Every month for 3 non-consecutive days, energy and nutrient intakes were assessed and physical activity was estimated by pedometer. With the consumption of SPI for 2 months, concentrations of total-cholesterol changed from 280±7 to 263±8 mg/dL (-6.5%, p=0.0099), HDL-cholesterol from 57.4±2.5 to 62.6±2.9 mg/dL (+9%, p=0.0047), non-HDL-cholesterol (total-cholesterol-HDL-cholesterol) from 223±7 to 201±8 mg/dL (-11%, p=0.0023) and triglycerides from 204±23 to 173±19 mg/dL (-18%, p=0.022). There were no significant changes with SMP (p >0.05). The researchers concluded that 30g of SPI a day for 2 months had favourable effects on serum lipids in Russians with hyperlipidemia.

EA Borodin et al, Journal of Nutritional Science and Vitaminology, 2009;55(6):492-7 ([http://www.jstage.jst.go.jp/article/jnsv/55/6/55\\_492/article](http://www.jstage.jst.go.jp/article/jnsv/55/6/55_492/article)).



## Solae introduces new soy fibre meat solution

As meat manufacturers in Europe continue to look for ways to improve product development and profitability, Solae is introducing a solution - a new soy fibre meat ingredient, CENERGY™ FMS. This ingredient is recommended for ground meat and kebab manufacturers and is shown to increase cooking yield, reduce cooking time and provide cost savings.

Solae believes that CENERGY™ FMS provides additional advantages to current ingredient solutions being used with meat manufacturers today. For example it can produce significant overall formulation cost savings when added to standard ground meat products. Other functional benefits include improved purge control, improved moisture and fast hydration and integration. CENERGY™ FMS is a unique product derived from the cell wall of the soybean cotyledon. It is composed of a complex matrix of insoluble fibre, soluble fibre and protein. The combination of these ingredients allows it to control purge, increase water retention and improve cooking yields in ground meat applications (<http://www.solae.com>).

## Superior full fat soy grits from Cargill

Cargill has launched 'superior' full fat soy grits as result of significant investment in new, state-of-the-art production equipment at their Ghent facility, Belgium. Aimed at bakery manufacturers in Europe, the Middle-East and Africa, Cargill's ProFull™ range of full fat soy grits are produced using the latest optical sorting technology which optimises visual appearance, texture profile and flavour stability.



ProFull™ full fat soy grits are golden yellow grains with a mild, nutty taste and distinctive bite, and can be used in a wide variety of bakery products, from breads and cookies to cereal products. For example, ProFull™ full fat soy grits can be used to replace nuts in granola cereals, or contribute to the crunchy texture and rustic appearance of multi-grain breads. Containing a minimum of 38% protein, products containing soy grits are also gaining widespread appeal among consumers, as a nutritious and healthy source of vegetable proteins.

The new technology uses a jet of compressed air to remove any small particles that can remain after the typical toasting and sifting process. In addition to full fat soy grits, Cargill offers ProFull™ full-fat soy flour, Prolia™ defatted soy flour and grits, and Prosanté™ textured soy flour. These are complementary to Cargill's wider product offering for the baking industry, which encompasses lecithins, hydrocolloids, starches and functional systems (<http://www.cargilltexturizing.com>).

## Garden Protein International launches new line of prepared meals

Canadian manufacturer Garden Protein International has launched 3 meat-free single-serve meals marketed under the name gardein™ trio. These new complete chilled meals for one include a serving of plant-protein, vegetables and rice in a savoury sauce and are available in three varieties, including gardein™ thai trio, gardein™ sicilian trio and gardein™ burgundy trio. All gardein™ trio meals provide a good source of protein and fibre. Each meal is free of animal and dairy ingredients and cholesterol. Trio meals are one serving size and ready in 3 minutes in the microwave and 5 minutes on the stove-top.

The gardein™ (garden + protein) product range is a line of plant-based foods slow-cooked to have the taste and texture of premium lean meat. Made from a savoury blend of vegetables, grains and plant-based proteins including pea, wheat and soy, gardein™ is free of cholesterol and trans fats and the majority of products provide a good source of fibre and are low in fat. The product is available in the fresh and frozen sections of 9,500 grocery stores across the USA and Canada (<http://www.gardein.com>).

To receive Soy & Health please e-mail your contact details (including your name and company address) to [info@soyconference.com](mailto:info@soyconference.com)

**16–17 July 2010**

6th Practical Short Course: Specialty and Functional Oils. Omega-3 Fatty Acids: Market Trends, Regulations Stability and Specialty Applications, Chicago, IL, USA. Visit: <http://www.smartshortcourses.com> .

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IFT Annual Meeting and Food Expo, Chicago, IL, USA. Visit: <http://www.ift.org>.

**22–27 August 2010**

12th Annual Practical Short Course on Food Extrusion: Cereals, Protein & Other Ingredients (formerly Texturized Vegetable Protein and Other Soy Products). Texas A&M University, Texas USA. Visit: <http://www.tamu.edu/extrusion>.

**26–27 August 2010**

Soy Innovation Africa to Provide Strategic Insights Into Use of the Soybean in Emerging Markets (in conjunction with IUFOST World Congress, 22–26 August 2010), Cape Town, South Africa. Visit: <http://www.iufost2010.org.za/SoyInnovationAfrica.asp>.

**3–4 September 2010**

China Soybean Expo 2010 & Beidahuang Soybean Festival, Heilongjian Province, China. E-mail: Lu Lingang - [lul5715@vip.sina.com](mailto:lul5715@vip.sina.com).

**7–11 September 2010**

51st International Conference on the Bioscience of Lipids - The Golden Era of Lipids: 50 years of Lipoexcitement, Bilbao, Spain. Visit: <http://u006359.lc.ehu.es/icbl2010/>.

**21–23 September**

Food Ingredients South America, Sao Paulo, Brazil. Visit: <http://fi-southamerica.ingredientsnetwork.com/home>.

**28–30 September 2010**

4th Food Proteins Course 2010 - Hands-on Properties, Functionalities & Applications, Soesterberg, The Netherlands. Visit: <http://www.bridge2food.com/fpc2010.asp>.

**29 September – 1 October 2010**

Food Ingredients Asia, Jakarta, Indonesia. Visit: <http://fiasia.ingredientsnetwork.com/home>.

**4–6 October 2010**

Global Soybean & Grain Transport/Soya & Oilseed Summit, Minneapolis, MN, USA. Visit: <http://events.soyatech.com/conferences/GSGTSOS2010.htm>.

**4–5 October 2010**

Snack Food Technology Forum 2010, Het Pand - Ghent University, Belgium. Visit: <http://www.smartshortcourses.com/>.

**16–19 October 2010**

19th International Symposium on the Role of Soy in Health Promotion and Chronic Disease Prevention and Treatment, Capitol Hill, Washington, DC. Visit: <http://www.soy Symposium.org/>.

**22–23 October 2010**

Food Ingredients India, Mumbai, India. Visit: <http://fiindia.ingredientsnetwork.com/home>.

**27 October 2010**

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**4–5 November 2010**

2nd Practical Short Course: Functional and Bioactive Ingredients for Food Products and Specialty Drinks, Ghent University, Ghent, Belgium. Visit: <http://www.smartshortcourses.com>

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Buying Soy Seminar - Connecting Soy Supply & Demand/ Developing Soy Seminar - Connecting Product Development with Supply, Amsterdam, Netherlands. Visit: <http://bridge2food.com/Buyingsoy2010.asp> and <http://bridge2food.com/Developingsoy2010.asp>.

**16–17 November 2010**

Health Food Ingredients Exhibition, Madrid, Spain. Visit: <http://hieurope.ingredientsnetwork.com/1>.

**18–19 November 2010**

7th Practical Short course Omega-3 Fatty Acids: Market Trends, Nutrition & Health, Utilization in Food Systems, Madrid, Spain. Visit: <http://www.smartshortcourses.com>.