

Soy & Health

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Research finds new soybean plant that lacks allergy protein

Researchers at the University of Illinois have found a soybean seed that lacks the protein, known as P34, responsible for most allergic reactions. The painstaking research took about 8 months sorting and crushing seeds from about 15,000 varieties in the US Agriculture Department's soybean germplasm collection at the University.

Scientists have already used genetic engineering to silence the gene that creates P34 in most soybeans, but because of concerns about the technology it is thought that it will be much easier to market soybeans that naturally lack the protein. Obviously more testing needs to be done before farmers can grow allergy-free soybeans, but the research shows promise for people who are allergic to soy. The allergen-free soybean comes from a plant that normally grows wild so it will have to be crossbred into varieties that farmers grow, a process that could take from 5 to 10 years.

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Further growth for US soyfoods market

According to a new market study by Soyatech and SPINS, the US market for soy-based food products grew by 7.2% overall in 2003 to reach \$3.9billion. The reason for this increase is mainly because of strong consumer interest in soymilk, energy bars, and meat and dairy alternatives. However, whilst the increase may seem relatively strong in comparison to other food categories, the rate of growth for soy-based foods is beginning to slow down quite rapidly, indicating that perhaps the market has reached a more mature stage of development.

At the same time as products, such as soymilk, tofu and soy burgers, are beginning to show signs of a slow down in growth, there are signs that new emerging categories, such as non-dairy frozen desserts, frozen entrées, shelf-stable juices with soy, snack foods and yogurts are beginning to play an increasingly larger role. For example, total sales of these emerging categories has almost doubled from 6.3% of total sales in 2001 to 11.6% in 2003.

Soytech/SPINS Study, Soyfoods: The US Market 2004, <<http://www.soyatech.com>>.



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Prostate cancer and diet

Research in the October 2004 issue of the journal 'Urology', carried out by the Urological Sciences Foundation in the US may help explain why prostate cancer is more common in the West than in Asia. The study compared the dietary influences on prostate tissues of Japanese men who spent their life in Japan with other Japanese men who spent their life in the US. The Western diet, relatively rich in animal fat and poor in soy, was found to exert cancer causing influences that could be traced directly into prostate tissues.

The mechanism of cancerous change appears to depend on how fat is handled by the prostate tissues and the action of capsase enzymes in the tissues. It is also thought that there may be the possibility of gene-nutrient interaction. The researchers suggest that oxidative damage from saturated fat (in the Western diet) and a protective effect from soy isoflavones (in the traditional diet) are possible mechanisms which, if confirmed by other studies, have implications for public health and nutrition-related treatment methods.

More support for the cholesterol-lowering function of soy protein

A study published in the American Journal of Clinical Nutrition (Vol 80, No 5, pp1391-1396) has provided further evidence that soy protein intake is inversely associated with total and LDL-cholesterol concentrations and the ratio of total to HDL-cholesterol but not with HDL-concentrations. The cross-sectional study included 1033 pre- and post- menopausal women selected from the Oxford arm of the European Prospective Investigation into Cancer and Nutrition. The research team from the Cancer Research UK Epidemiology Unit at the University of Oxford in the UK, found that women who consumed at least 6g of soy protein per day had mean blood levels of LDL-cholesterol that were over 12% lower than in women who consumed less than 0.5g per day.

Extension for soyfoods health claim review

The US Food & Drug Administration has asked for a 90 day extension in the review process for a qualified health claim linking soy protein containing foods with a reduced risk of certain cancers. The extension is apparently necessary to allow enough time to review new scientific evidence and is part of the standard FDA approval process.

Soy as medicine to treat breast cancer?

At a British Pharmaceutical Conference in September, researchers from the School of Pharmacy and Biomedical Sciences at the University of Portsmouth announced that they are investigating whether it is possible to turn the active ingredients of soy into a useful medicine that may help to treat breast cancer. Using derivatives of daidzein, the researchers tested the effect on the growth of hormone-dependent breast cancer cells and found that they had a stimulant effect at lower concentrations and reduced cancer growth at high concentrations. More research is needed to determine whether there are any side effects from these potent synthetic compounds when used as medicines.

BPC 2004, Medicines: from Cell to Society" was held in Manchester from 27-29 September 2004.

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Irish study reveals soy-rich foods could reduce risk of breast cancer

A new study from the University of Ulster suggests that soy-rich foods could reduce the spread of breast cancer. Breast cancer is the most common form of cancer in women in the western world but in South East Asian populations and areas where soy products are traditionally consumed in high amounts in the diet, the incidence is low. Researchers from the University of Ulster School of Biomedical Sciences have been investigating the effects of isoflavones on the invasion of breast cancer cells in cell cultures. They found that the isoflavones exerted a potent inhibitory effect on breast cancer cell invasion, even at concentrations similar to those found in South East Asian populations.

The researchers suggest that eating soy rich products, such as soy milk, soy drinks and desserts, could have an important role in preventing the spread of cancer cells in the body. Further studies in human volunteers are now needed to confirm whether soy isoflavones will protect against breast cancer in patients.

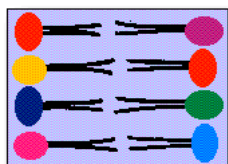


Calcium in soy/high calcium diet is mostly the reason for improved bone mineral density

A study published in the journal, 'Bone' (Fonseca et al, Bone 2004, Vol 35, No 2, pp489-497) has reported that daidzein plus a high calcium diet improved bone strength and density, but the effect was primarily due to the high calcium diet.

The researchers from the University of Toronto studied the effects of purified daidzein in combination with high calcium on preserving femur and lumbar vertebrae bone mineral density and biomechanical bone strength at three different sites in ovariectomized mice. They found that the combination of daidzein and high calcium favourably affected cortical and trabecular bone but most of the effect is mediated by the high calcium diet.

Further studies are needed to determine the optimal dietary levels of daidzein and calcium with the long-term goal of developing a dietary strategy to prevent postmenopausal osteoporosis and related fragility fractures. All mice fed daidzein produced equal and there were no uterotrophic effects of daidzein noted at the doses used.



SHORT COURSE

LECITHIN: PROPERTIES AND TECHNOLOGICAL FUNCTIONS

14-15 February 2005, Het Pand, Ghent, Belgium

Organised by the International Lecithin & Phospholipid Society and Ghent University, this short course is aimed at Product Developers, QA/QC Managers, Lab Technicians, Scientists, Application Technologists, Plant Supervisors, working with lecithins and emulsions in food, Pharmaceutical and other industries, institutes and academia.

For further details visit [<http://www.ilps.org/>](http://www.ilps.org/).





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Solbar launches soy isoflavones for the dairy market

Solbar Plant Extracts has launched Solgen 3/S, a highly soluble soy isoflavone product with the benefits of a bland taste specially designed for dairy foods. Solgen 3S can be used to fortify a variety of functional dairy beverages, including soy milks, yogurts and instant powders.

Solgen 3/S (3%) natural soy extracts have high levels of genistein and daidzein which are known to reduce total and LDL-cholesterol (the "bad" cholesterol), and elevate HDL-cholesterol (the "good" cholesterol). Furthermore, they have been shown to alleviate menopausal symptoms, prevent bone loss while building new bone cells.

All Solbar soy products are certified by CERT ID Non-GMO IP. Solbar's factory in Israel is GMP/HAACP, ISO 9001:2000 approved, Kosher and Halal. Solbar recently completed its EDMF (European Drug Master File), which has been submitted to European health authorities.

Solbar Plant Extracts Ltd. POB 2230 Ashdod 77121, Israel, tel: +972 8 86232111, fax: +972 8 8561455, e-mail: spe@solbar.com, website: <<http://www.solbar.com>>.

Sojaland Company and the Soy & Joy range of soy drinks



The Soy & Joy range of soy drinks are produced by Sojaland GmbH, from organic whole soybeans and are available in variety of flavours: Natural, Chocolate, and Vanilla. There are two fruit varieties made with 30% concentrate – Orange-Passion Fruit and Strawberry-Banana.

Sojaland GmbH, Otto-Hahn-Strasse 10, D-19061 Schwerin, website: <<http://www.soyandjoy.com>>.

Solae soy and fish paste products for Japanese supermarkets

A range of Solae-branded fish paste products have been launched in mainstream supermarkets in northern and eastern Japan. Rich in Solae's soy protein, the fish paste products are designed for the consumer to grill at home. They are available in 3 flavours - Salmon Mayonnaise, Octopus Cheese, and Scallop Butter. **The Solae Company website: <<http://www.solae.com>>.**

New breakfast soy milk

A new long-life soy milk product is to be launched by So Good exclusively for the breakfast table. SoyaBreakfast is slightly sweeter and creamier than the company's SoyaLife product and has been specifically formulated to be consumed with breakfast cereals. Available in 1 litre cartons. **So Good website: <<http://www.sogood123.com>>.**

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(7 - 8 October 2004 in Bruges, Belgium)

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www.solae.com



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Safety of isoflavones in dietary supplements

A new five year study on the effects of soy isoflavones found in dietary supplements on various parts of the body is to begin at the University of Illinois. The project is funded by an \$8 million grant from the US National Institutes of Health. Leading the multi-disciplinary team is Professor Helferich from the Department of Food Science and Human Nutrition, whose research has shown that high levels of genistein promote the growth of cancerous cells in animal models representative of post-menopausal women with estrogen dependent cancer.

The researchers will be investigating how different doses of isoflavones and the timing of exposure affect breast, brain and adipose tissues. The mechanisms at work between isoflavones and estrogen receptors will also be investigated. First the research will focus on the biological effects of pure isoflavones and then they will look at the effects of complex mixtures of the various soy isoflavones commonly found in commercial supplements.

ADM launches next generation of soy meat analogs

Nutrisoy® Next™, on show at the recent Health Ingredients Europe exhibition, is a new soy analog from ADM. Using ADM Technology the product has a fibrous texture which is more like muscle meat producing a more juicier, tender product with a realistic meat-like texture and taste.

Produced at ADM's vegetarian food plant Nutrisoy® Next™ is produced with the latest mixing, forming, batter/breading, frying, baking, freezing and packing equipment. It is available in strips, nuggets, patties and in breaded and unbreaded forms.

For more information visit <http://www.admworld.com/>.

'VitaGoat' food technology project sponsored by Alpro



VitaGoat system, left to right: steam boiler, pressure cooker with filter press and tofu box, cycle grinder.

A small non-profit organization, Malnutrition Matters, has developed and launched the VitaGoat system which has recently also received corporate sponsorship from Alpro NV. The equipment requires no electricity, generator or running water and so is particularly useful in developing countries and produces a range of value-added food products from soybeans, cereals, grains, nuts, fruits and vegetables.

Malnutrition Matters is looking for other sponsors and partners, commercial or NGO, to initiate technology transfers to the developing world. For more information e-mail: matters@malnutrition.org, tel: +1 613 742-6888, fax: +1 613 745-8258, website; <http://www.malnutrition.org>.



Soy & Health

2004

CLINICAL EVIDENCE • DIETETIC APPLICATIONS

Conference highlights

In a packed scientific programme reviewing the latest research, the 3rd International Conference on Soy and Health (October 8-9, 2004) attracted some 350 scientists, health professionals, and food industry representatives. Delegates from 32 countries travelled to the historic town of Bruges, Belgium, to hear presentations from leading experts in soy and health. In addition to the 20 presentations, participants could view 30 posters and visit the accompanying exhibition of new soy food products.

Key areas where soy may deliver tangible health benefits include heart disease, diabetes, chronic kidney disease, breast and prostate cancer, cognitive function, menopausal symptoms, osteoporosis, and the treatment of children with familial hypercholesterolemia.

The benefits of soy in relation to heart health are now generally accepted but studies now focus on how and why soy reduces harmful cholesterol levels. Kurt Widhalm (Medical University of Vienna, Austria) presented research to show that a soy protein diet may be particularly useful in reducing LDL cholesterol levels in children with familial hypocholesterolemia.

Diabetes and obesity are very topical at the moment and Stephen Atkin (Department of Diabetes and Endocrinology, Michael White Diabetes Centre, University of Hull, UK) reviewed evidence that suggests that dietary supplementation with soy may favourably alter insulin resistance, glycemic control and serum lipoproteins in post-menopausal women with Type 2 diabetes. The evidence for a role for soy in weight reduction, however, is less conclusive. A review of the literature by Janice Harland (Nutrition Consultant, UK) could only hint that there may be some advantage in including soy protein in weight reducing diets for the obese and overweight.

CONFERENCE PROCEEDINGS

The Soy & Health 2004

Conference proceedings can be ordered at the pre-registration price of 39 EUR (6% VAT included; advance payment is necessary). The proceedings will be mailed in Spring 2005.

Online order form at

<http://www.soyconference.com>

Manuel Velasquez (George Washington University, USA) reviewed the mounting evidence for soy having a beneficial role in helping patients with chronic kidney disease but further research is needed before any optimal dose can be recommended.

There is still keen interest in the potential role of soy isoflavones as an alternative to HRT and investigations indicate some advantages but more research is needed.

A more promising area is the potential role of soy in the prevention of osteoporosis. Eva Lydeking-Olsen (Institute for Optimum Nutrition, Copenhagen, Denmark) has carried out considerable research in this area. Her research suggests that consumption of soy may slow bone loss in post-menopausal women. However high levels of soy isoflavones (around 80mg per day) may be required for such an effect.

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Mark Messina (Loma Linda University, USA) reviewed the current research into the role of soy and the prevention of breast cancer. The role of soy remains controversial as clinical trials provide mixed results, however, the first 20 years of a woman's life are believed to be important with breastfeeding, early pregnancy, and caloric restriction associated with a lower risk of developing breast cancer. Animal studies suggest that prepubertal consumption of soy may protect against breast cancer in later life. Animal studies have also shown that soy isoflavones also inhibit the growth of prostate cancer cells. Ian Rowland (University of Ulster, Northern Ireland) and Risto Santti (University of Turku, Finland) reviewed research into this area. More human studies are needed

but evidence to date suggests a protective effect with soy acting in the later stages of prostatic hyperplasia possibly as an anti-inflammatory agent.



Kenneth Setchell (University of Cincinnati, College of Medicine, Ohio) highlighted the role of equol, a metabolite of daidzein, one of the two main isoflavones found in soy, which is thought to be particularly important in relation to soy's lipid-lowering and anti-oxidant activity. Studies suggest that equol may be important in the prevention of hormone-related conditions, such as breast and prostate cancer, and osteoporosis in post-menopausal women

Very few studies on cognitive function have been carried out but there is some interest in the role of soy in improving memory function in post-menopausal women. David Hartley (King's College London, UK) reviewed the latest studies which indicate that some cognitive functions are improved as a result of soy intervention.

Preliminary results from a major long-term US study started in 2003 on the consequences of early soy exposure on development, metabolism, body composition and health were presented by Tom Badger (Arkansas Children's Nutritional Centre and University of Arkansas for Medical Sciences, USA). Studies so far demonstrate equal growth and development and normal central nervous system function in breastfed and both cows' milk and soy formula fed infants. This study is due to run for several years with follow-ups at key stages in the children's lives.

Finally Angie Jefferson (Nutrition Consultant, UK) addressed the important issue of how to introduce soy successfully into the western diet and Jo Goossens (Bio-Sense) looked forward to the year 2020 to understand what the future might hold for soy in a health conscious society.

Other speakers included Maria Rosa Lovati (University of Milan, Italy), Francesco Squadrito (University of Messina, Italy), Jaak Janssens (The European Cancer Prevention Organisation), Jose L Penalvo (University of Helsinki, Finland), and Yves-Jean Bignon (Oncogenetic Unit, J Perrin Centre, Clermont-Ferrand, France).

The conference was well supported by sponsors Alpro, the Solae Company, Cerestar Food & Pharma Products (Cargill), SPE Israel, Vitafytea, Triballat Sojasun, Agro-Food Industry HiTech magazine, Functional Foods and Nutraceuticals magazine, and additional exhibitors Arkopharma, Wild Sojaland, and Soya Inc.

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6–8 December 2004

European Functional Foods Summit, London, UK. Website: <http://www.iir-conferences.com/site/_prod-grp.cfm?dirname=XFF04&Confcode=XFF04&iv=12>.

9–10 December 2004

5th Nutrition & Health Conference, Excel Conference Centre, London. More information on <<http://www.nutritionandhealth.co.uk/>>.

14–15 February 2005

Short Course: Lecithin: Properties and Technological Functions, Ghent, Belgium. Organised by International Lecithin and Phospholipid Society and Ghent University. Website: <<http://www.ilps.org/>>.

1–3 March 2005

Food Ingredients Asia, Shanghai Everbright Convention & Exhibition Centre, China. Contact CMP, website: <<http://asiachina2005.fi-events.com/>>.

6–11 March 2005

Practical Short Course on Snack Food Processing, Texas A&M University, USA. Contact: Dr Mian Riaz +1 979/845 2774, e-mail: mnriaz@tamu.edu, website: <<http://www.tamu.edu/extrusion/>>.

17–19 March 2005

Food Ingredients China, Shanghai Everbright Convention & Exhibition Centre, China. Contact CFAA, tel: +86 10 6839 6330, fax: +86 10 6839 6422, e-mail: cfaa@a-l.net.cn, website: <<http://www.ChinaFoodAdditives.com/>>.

18–20 March 2005

Natural Products Expo West, Anaheim, California, USA. Contact: New Hope Communications, tel: +1 303 390 1776, e-mail: tradshows@newhope.com, website: <<http://www.expowest.com/>>.

2 April 2005

Congres voor Nutri- & Fytotherapie, Amsterdam, The Netherlands. Website: <<http://www.nutlifyto.org/>>.

24 April 2005

Congrès de Nutri & Phytothérapie, Brussels, Belgium. Website: <<http://www.nutriphyto.be/>>.

26–28 April 2005

IFIA Japan 2005 and Healthy Foods Expo, Tokyo, Japan. Contact Kathy Gianetti, EJ Krause & Associates, e-mail: gianetti@ejkrause.com.

1 May 2005

Practical Short Course on Soyfoods, Ingredients, Preparation and Utilisation, Salt Lake City, Utah, USA. Contact Filtration and Member World, tel/fax: +1 979 260 1747, e-mail: membrane@membraneworld.com, website: <<http://www.membraneworld.com/>>.

10 – 12 May 2005

Vitafoods International, Geneva, Switzerland. Contact IIR Exhibitions, tel: +44 20 7915 5132, website: <<http://www.vitafoods.co.uk/>>.

15–16 June 2005

Natural Products Expo Europe, Amsterdam, The Netherlands. Contact Katherine Tooby, New Hope Natural Media, tel: +44 20 8232 1600 x225, e-mail: ktooby@newhope.com, website: <<http://www.expoeurope.com/>>.

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