PFNDAI Bulletin September 2008

Editorial

Lately there is much interest in foods that are natural or having natural ingredients. The word 'natural' has different connotations when used in different contexts. However, consumers like it when the word natural is seen on the pack of food products and normally it is considered to be safe and healthy and nutritious.

The marketing has at times taken advantage of this obsession to promote all kinds of products as natural or containing natural ingredients and/or additives. Until recently there was an additive that chemically synthesised but was marketed as made from natural raw material. So this 'natural' label becomes a useful tool to promote food products to gullible consumers that crave for anything natural.

One example of natural food is unprocessed or raw. The fruits are commonly eaten unprocessed and so natural is preferred here as any process may cause degradation in some of the nutrients. Heat is a common process used that might degrade heat sensitive vitamins. However, it has been known that in some of the processes like HTST or UHT processes there is very little damage and the product may remain without further losses for long time unlike unprocessed food.

Heat also helps in some foods to destroy pathogens like in milk pasteurisation and cooking of legumes where some anti-nutritional factors are destroyed. It also makes the food more digestible and better utilised by body. So processes do not always cause the food to be less nutritious or less safe, but the opposite may be true.

Natural may mean not artificial or synthetic or man-made with respect to additives used in foods for example, there are natural sweeteners and there are artificial sweeteners. The use of synthetics in foods came about when flavours and colours were used in foods to simulate those occurring naturally. These were more powerful and stable with the added advantage of being cheaper. However, some of these were found to be unsafe and were later banned.

When natural flavours are used there are advantages of superior quality because of many small traces of unidentified compounds contributing to the rich flavour. However, there are advantages of synthetics also besides being cost-effective. For example, new and exotic flavours could be prepared that do not exist in nature. With sweeteners, calorie intake or blood sugar could be controlled. Some synthetic emulsifiers have far superior properties over natural.
Additives and ingredients are considered to be natural when these are extracted or derived from natural materials. It is sometimes isolated from a source not commonly used as food. Thus natural colours may be extracted from plant sources that are not edible and may still be called natural and more acceptable to consumers. Some of these sources may also contain substances in trace quantities whose safety has not yet been established.

It might be desirable to have fruits and vegetables from nearby garden, picked fresh and consumed. Processed food products do have an important role in our daily diet. However, when one sees the word natural on label of a food product, consumers must ensure that it is not just a marketing statement than a guarantee of the food product being safe, nutritious and healthy.

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Health Benefits of Natural Mixed Carotenoids

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Carotenoids – Important Natural Micronutrients

Carotenoids have become recognised as an important component of the human diet. For many years, the health benefits of carotenoids focused predominantly on the vitamin A activity of beta-carotene. Today, many natural carotenoids are being investigated for their role in a variety of health benefits, particularly protection against chronic diseases. This interest in carotenoids beyond their vitamin A activity stems from an enormous amount of epidemiological data showing that high intakes of fruits and vegetables, which contain carotenoids, are protective against a number of different diseases states, especially some forms of cancer.

Carotenoids are highly coloured (yellow to red) pigments found in plants where they facilitate photosynthesis by aiding in the collection of radiant energy from sunlight. These pigments, which are responsible for the colour of carrots and tomatoes also protect the plants against excess ultraviolet radiation. From a chemical standpoint, carotenoids are tetraterpenoid compounds, which contain 40 carbon atoms arranged in a repeating pattern of 5 carbon units. Carotenoids are further subdivided into carotenes which contain only carbon and hydrogen and xanthophylls which also contain oxygen. More than 600 different carotenoids have been identified in nature and about 40 to 50 are present in the normal human diet. Approximately 20 different carotenoids have been found in human blood. Animals (including humans) do not synthesise carotenoids, they must obtain carotenoids from the diet.

Carotenoids – Safe Source of Vitamin A

As mentioned above, carotenoids are a safe source of vitamin A which is essential for growth, cellular differentiation and reproduction, vision and proper immune function. In high doses, preformed vitamin A can be toxic and cause birth defects, if taken during some stages of pregnancy. Because the body only converts carotenoids into vitamin A when necessary, eating large quantities will not cause vitamin A toxicity, but may result in a harmless yellow discolouration of the skin, which rapidly disappears when carotenoid consumption is reduced. About 50 different carotenoids can be converted into vitamin A, but beta-carotene is the only carotenoid with the potential of forming two molecules of vitamin A from one molecule of carotenoid. In terms of biological equivalency, 1mg all-trans retinol is equivalent to 6mg all-trans beta-carotene and 12 mg other provitamin A carotenoids.

As pigments in food products, beta-carotene and other carotenoids are very useful because of their high colour intensity and low toxicity compared to other colours. Although they are lipid soluble compounds, water digestible products are available in the form of liquid emulsions or dry powders. Because of their antioxidant properties, they readily react with oxygen and must be protected. However, once incorporated into the food product beta-carotene is usually quite stable.

Carotene Sources – Fruits, Vegetables and Bioavailable Supplements

Carotenoids also are available as supplements to enhance the diets of those who eat few fruits and vegetables on a daily basis. Despite the recommendations from multinational health organisations to eat more fruits and vegetables, many populations, on average, fail to eat a minimum of five servings per day. In addition, several recent studies have shown that bioavailability is very low in fresh fruits and vegetables, while carotenoids in supplements have excellent bioavailability. Food sources of carotenoids have the advantage of providing a wide variety of carotenoids, but using supplements containing natural mixed carotenoids, provide five of the more important and most common carotenoids. Natural mixed carotenoids are produced by the alga Dunaliella salina and contain alpha carotene, beta carotene (both cis and trans isomers), zeaxanthin, cryptoxanthin and lutein.

Positive Epidemiological Evidence of Health Benefits vs. Clinical Trials

A varied diet rich in fruits and vegetables form the basis for good health as indicated by epidemiological studies. This epidemiologic evidence supports the use of the mixed carotenoids in human nutrition and formed the basis for recent large clinical trials of beta carotene. Two large clinical trials both aimed at preventing the progression of lung cancer in high risk subjects (heavy smokers treated with synthetic beta carotene in the ATBC (alpha tocopherol beta carotene) Study, heavy smokers and asbestos workers treated with synthetic beta carotene and high doses of vitamin A in the CARET Study did not show any benefit and indicated potential harm in some individuals. However, in the Physical Health Study (PHS), which was the largest and longest clinical trial with beta carotene to date, there was clearly no harm to the 22,000 healthy male physicians over 12 years of supplements use.

At annual meeting of the American Society of Clinical Oncology, Stampfer, a principal investigator of the PHS, reported a protective effect of beta carotene against prostate cancer. As hypothesised, men with the lowest plasma beta carotene had an increased risk of prostate cancer compared to those in the highest levels. Furthermore, men with initial low beta carotene supplements had a 36% reduced risk of prostate cancer and a reduction (not statistically significant) in total cancer.

In another epidemiological study using a new carotenoid database, Ziegler investigated the relationship between consumption of various foods and the risk of developing lung cancer. This study involved approximately 2000 white males in New Jersey and found that men with the highest intakes of beta carotene had a 50% reduction in the risk of lung cancer. This result is compatible with many previous studies. However, alpha carotene was even more protective with 63% reduction in the risk of developing lung cancer. Based on these results, Dr. Ziegler concluded that beta carotene is not the dominant protective factor in vegetables and fruits.

One plausible explanation of the different results between epidemiological and clinical trials is that only one carotenoid was tested in the clinical trials, whereas the epidemiological data are based on eating a variety of fruits and vegetables which contain many carotenoids. This explanation argues that consuming a mixture of different carotenoids would have been protective.

Increased Lycopene Bioavailability and Reduced Risk of Prostate

Another carotenoid, lycopene, recently has been associated with a decreased risk of prostate cancer. Men who consumed at least 10 servings per week of tomato-based foods were found to have a 35% reduced risk of prostate cancer. Lycopene is the major carotenoid in tomatoes but several others (including beta carotene) also are present. Lycopene is the most effective carotenoid at quenching singlet oxygen, a powerful oxidising agent. The greatest benefit was obtained from cooked tomato foods such as tomato sauce. High consumption of tomato juice was not protective, which is consistent with the poor bioavailability of lycopene from raw tomatoes and tomato juice. It is interesting to note that lycopene is the most abundant carotenoid found in the prostate gland, which supports a possible protective role in this tissue.

Lutein and Zeaxanthin – Important Carotenoids in Eye Health

Another disease where carotenoids appear to be protective is age-related macular degeneration (AMD). AMD is progressive degeneration of the macula (a yellow region on the retina directly behind the iris of the eye) resulting in irreversible blindness. Dr. Seddon discovered that eating foods, such as spinach, which is rich in lutein and zeaxanthin (xanthophylls) reduced the risk of developing AMD. These results are consistent with the fact that the macula is yellow because it contains a high concentration of lutein and zeaxanthin, the only carotenoids found in the macula. Consumption of 6mg per day of lutein appeared to be effective in reducing the risk of developing AMD.

Photo-protective Effects of Carotenoids in Human Skin

Lately, interest has focused on the photo-protective properties of carotenoids. With greater evidence that excessive exposure to the sun can result not only in sunburn but also skin cancers, protection is needed against damaging UV rays. Recent human studies provide evidence that systemic UV protection by ingestion of carotenoids offers another line of defence. Recognising that beta carotene provided sun protection in plants, bacteria and mice, Mathews-Roth and colleagues demonstrated that beta carotene also protected against photo-sensitivity in people with a rare genetic disease called erythropotetic protoporphyria. More recently Gollnick and Biesalski demonstrated in normal humans that beta carotene intake of 30mg per day for 6 weeks, prior to sun exposure, resulted in sun protection that was optimised by carotene intake and sunscreen use. In addition to reduced redness, Biesalski demonstrated that Langerhans cells, important components of the immune system, were maintained by beta carotene intake, to protect against UV damage. Confirmation of UV protection by natural mixed carotenoids in normal humans was demonstrated by Heinrich with daily dose of 50mg for 6 weeks of mixed carotenoids, sourced from the D. salina algae. Oral ingestion of high doses of carotenoids provides a preventive measure in skin protection from sun exposure in addition (not as a replacement) to topical creams and sensible exposure habits.

Conclusion

In conclusion, there is much evidence that diets rich in fruit and vegetables or supplements, have important effects on disease prevention and contribute to human health. Studies also show that bioavailability is dependent on the source of carotenoids and that supplements provide a more bioavailable form than fruits and vegetables. A mixture of carotenoids appears to be more beneficial than one single compound. The most important and prevalent carotenoids in human plasma and tissues include alpha- and beta-carotenene, lycopene, lutein and zeaxanthin.

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Nutrition Week at SNDT Juhu

Report by Ms. Ummeayman Rangwala, Nutritionist, PFNDAI

Nutrition week activity was organized by PFNDAI in collaboration with the Food science and Nutrition department of SNDT on 6th Sep'08 at the Mini Auditorium of SNDT, Juhu.

The event was sponsored by Tetra Pak India and Dabur India. It had many activities for the students such as Cookery competition, Nutrition Quiz competition, Pamphlet or Bookmaking competition and Debate competition. In cookery competition, students had prepared recipes incorporating flax seeds and made the recipe more nutritious along with being more palatable. Pamphlets prepared by students seemed to be done with such perfection that they gave an impression of being done professionally with a major focus on Obesity and its preventive measures. In Nutrition Quiz and Debate competition, the students came up with very high spirit of confidence and knowledge relating the subjects of food, science and nutrition. An overwhelming response was seen both among the students and the audience. The students' competitions were judged by Mr. Arun Kelkar, Dr.Deepa Bhajekar, Dr. U. Y. Rege, Mr. Vilas M. Kowjalgi, Dr. M.R.Vora, and Dr. S.V. Padgaonkar. There were more than 40 delegates from industry and academia to encourage the students and to attend the seminar thereafter.

Eminent speakers from various sectors of industry gave a bright insight on health benefits and applications of fruit & vegetable juices and also gave a scientific insight, legal perspective, and usage of cost effective techniques like aseptic packaging.

Dr. Shobha Udipi (Director, PG Studies & Research in Home Science, SNDT Women's University) gave a presentation on Vitamins- New Directions and Future Trends for Pharmacologic Use. The main focus was on vitamins specially Vitamin D, folic acid and Niacin as these vitamins are vital for few of the basic metabolisms. Deficiency of vitamin D not only causes metabolic bone disease in children and adults but may also increase risk of many common chronic diseases. There is more concern for the aging population as the cutaneous production of D3 is reduced to ~25% of the amount produced in a 20 yr old. Also research has found Vit D to be one of the most potent regulators of cellular growth in normal and cancer cells. There is concern about risk of cancer throughout the world .In US, people living at higher latitudes are at greater risk of cancer and 2-fold risk for colon cancer, 25% more risk for breast cancer which is possibly due to deficiency of vitamin D.

Folic acid deficiency is linked to depression in 15-38% adults suffering from depression and Neural tube defects (anencephaly, spina bifida, encephalocele) in 1 in approx 1000 births in US. Low blood folate is associated with risk of dementia, Alzheimer's, Crohn's disease, Alzheimer's, Depression, Parkinson's disease and chronic fatigue syndrome. In women, to decrease the risk factors of these diseases folic acid should be increased to 4000 μg/d beginning at least 1 month before conception and continue through the 1st trimester .

Niacin decreases fatty acid mobilization from adipose tissue triglyceride stores , it also raises HDL by decreasing fractional catabolic rate of HDL-apoA1 without affecting synthetic rates leading to reduced rates of cardiovascular diseases. Mortality due to cardiovascular diseases is on a rise and so this is a major area of concern and administration of niacin has provided a ray of hope to combat this as on coadministration of simvastatin with Niacin showed a significantly greater reduction in LDL cholesterol, TG, Apolipoprotein B, lipid/lipoprotein ratios.

Major natural source of these vitamins are fruits. Ms. Deepti Sharma (Manager-Nutrition, Dabur India) provided an insight into the Nutritional benefits of Fruit Juices. Juices play an important role in healthy diet and contribute to a good healthy lifestyle when consumed as a part of balanced nutritional lifestyle. They are fat free, rich in phytonutrients and are also a good source of some vitamin; they are also low in sodium but high in potassium content. NHANEs studies have shown an inverse association between dietary folate intake and stroke incidence. Dietary intake of folate has shown to increase the plasma concentration of homocysteine. It is also known that diet rich in potassium may protect against increased risk of strokes through lowering blood pressure.

She explained many health benefits associated with the consumption of different juices such as a glass of orange juice daily can reduce the incidence of kidney stones better than other citrus drinks like lemonade. Also pomegranate juice has been associated with the reduction of prostrate specific antigens and increased apoptosis of cancer cells. There was an interesting insight provided on the percentage fruit juice content in different types of fruit juices. Though fruit juices contain beneficial nutrients, these need to be preserved not only until it reaches the consumer but until the end of the shelf life period and this can be most effectively achieved by aseptic packaging technology.

Further insight into this technology was provided by Mr. D. P. Tripathi (Senior advisor- Corporate & Legal Affairs, AFPPA) in his presentation of Aseptic technology. He gave an insight on protecting nutrition by this technology which has been hailed as the most important in foods science advancement of 20th century. Aseptic technology is synonymous as a brand for food which is safe, hygienic, healthy, longer shelf life and nutritious. Aseptic packaging of six layers is like a soldier that protects the product against micro-organisms invasion, sunlight & U.V., dust. There are several more benefits of aseptic technology compared to other packaging technologies; there are higher vitamin retention, lower protein damage, less browning, less ingredient loss and better stability. When discussing about aseptic technology, it has been found to be a good fit for nutritional beverages. It has a more natural taste and color and most importantly no additional preservatives are required, and moreover it is portable and light, tamper evident.

This technology is highly helpful in developing countries and specially India due to its tropical climate, infrastructure deficiencies which do not allow for efficient distribution of food, where clean water is not available, electricity, transportation, refrigeration are not easily available and where food wastage is high. Further to many advantages of the Aseptic technology, he also commented on the possible future scenario for feeding programme in schools using this technology and how it is a cost-effective rather than costly technology.

With the concern for a better health and more awareness created of the health implications of consumption of fruit juices, consumers want to fulfill more of their daily requirements of vitamins and minerals naturally. Fruit juice consumption is more preferred than eating whole fruits and this is giving a boost to the fruit juice market. Food and beverage purchases continue to lead personal consumption in India, accounting for more than 40% of consumer spending in 2004. Ms Ummeayman R.(Nutritionist, PFNDAI), presented a brief insight into the PFA rules and FPO which have to be followed by imported fruit juice products and the labeling to be done as per these laws. In her presentation of Truth about imported beverage ,various imported products available in different shops were being looked at with respect to the mandatory declarations including manufacturing date, best before date, ingredients list etc. as well as such declarations about colours, preservatives, artificial sweeteners, etc. and comparing the Indian labels to highlight the hardships Indian companies have to bear.

Implications of different terms used on the fruit juice packs were also looked upon. As per the FPO Unsweetened juice should contain 100% fruit juice in final product where as Sweetened juice can contain 85% and Fruit Syrup, Crush, Squash can contain 25% fruit juice in the final product and Mango nectar-20%. Ready to serve beverages, including aerated water containing fruit juice or pulp should contain 10% fruit juice. Any beverage which does not contain at least 25% of fruit juice in its composition shall not be described as fruit syrup, fruit juice, squashes or cordial or crush and shall be described as a [non fruit] syrup. Labels of various imported fruit juice packs were shown to explain how these terms are used as a tool for marketing.

There was a lively discussion that followed all the presentations which showed that audience appreciated and enjoyed the presentations. Dr. Sanjog Surve, Vice Chairman, PFNDAI gave away the prizes to winning students and encouraged all the students to participate more actively in such future programs as they would be future industry decision makers and would help the India food industry to grow in pace with the global trends .

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Adding Nutrients from One Food to Another

By **Julia Moskin**

Sardines and anchovies are oily, smelly little fish but rich in nutritious omega-3 fatty acids. Most are caught, ground up and fed as fish meal to bigger animals but some may be transported, purified and served at American breakfast as Healthy Heart orange juice and Headstart bread. These new products deliver healthy benefits of fish oil without the smell and taste.

Benefits of eating omega-3 may include cardiovascular protection and improved neural development in children. People are not eating fish twice a day but they will drink two glasses of orange juice, if it has no fishy taste and all the benefits. Orange juice laced with anchovies is one of the latest ways food companies are competing for health-conscious consumers: plugging one food into another and claiming health benefits of both.

Shoppers are offered green tea extracts in ginger ale, yogurt bacteria in salsa and powdered beets in peanut butter. Staples like blueberries (antioxidants), cherries (anti-inflammatory benefits) and bananas (fiber when unripe) are broken down, shaken up and put to work in new ways.

These substances are nutraceuticals, the ingredients derived from food offering its health benefits. Nutraceuticals are like garlic pills and cranberry capsules became popular in 90s as dietary supplements.

Now many companies are adding nutraceuticals to existing foods: "fat-burning waffles" made from a newly developed corn flour, cheese that kills intestinal parasites, even ketchup that regulates digestion, are being developed. New technologies and a 1999 court decision giving the makers of supplements broad leeway to advertise their health benefits, have allowed these enhanced foods, that are called functional foods, meaning they have been modified to make them more nutritious, like genetically modified rice or fortified milk. Soon one may be able to buy all products enriched with omega-3 like milk, yogurt, tortillas etc.

Will food soon function as a nutrient delivery system made possible by microencapsulation and fine-spray coating? This whole area is quite complex as per Professor Lichtenstein of Tufts University. Since 70s nutrition research has progressed beyond vitamins and minerals to new health providing compounds like antioxidants (like lycopene, beta-carotene etc.), long chain omega-3 fatty acids (found in fish and some plants), and probiotics, live bacteria from yogurt and fermented vegetables.

There is significant scientific agreement (as is required by US FDA before allowing claims on labels) on the benefits of calcium, fibre, folate, soy protein, omega-3 fatty acids, lactic acid bacteria etc. These when taken in foods have been shown to protect against specific diseases e.g. calcium against osteoporosis and omega-3 fatty acids against heart disease. Many nutritionists believe that they are beneficial also in supplement form. However, recent studies on supplemental vitamin E, beta carotene and folate surprised everyone by showing no benefits for cardiovascular disease as antioxidants. So there is still a lot to learn about how the compounds in food are made available to body when ingested. One should be more cautious about individual nutrients but also should not close our minds, given the successes of the past.

Fortified food has been a great triumph of public-health policy. When vitamin B enriched flour reduced pellagra, iodine fortified salt wiped out goiter and vitamin D enriched milk eliminated rickets in children. Those decisions were based on rigorous public health studies as per Professor Mechanick of Mount Sinai School of Medicine. He feels that science has not been applied enough with new nutraceuticals products while FDA came up with labeling standards.

The rules for labeling of functional foods depend on what type of claim is being made. An unqualified health claim like 'calcium reduces your risk of osteoporosis' has to be proved in advance. A more general claim like 'X keeps your heart healthy' has to be proved by manufacturer but would not require proof in advance.

FDA does not conduct nutritional research. Several other federal agencies do so, but functional foods are not evaluated by any specific office. Nutraceutical products have characteristics of both food and drugs. It is easy to slip through the cracks and industry is always ahead of the agency, as per a former commissioner of US FDA, Dr. Kesseler.

The free-market policy on claims for nutraceuticals benefits some companies. One company produces compounds extracted from tomatoes. Their marketer states that everybody knows that a tomato is healthy and it is not something from Mars. However, specially bred tomatoes, bright red and flavourless, are pulped and then compounds like lycopene, beta carotene and lutein are extrated, and encapsulated in beadlets so tiny that they cannot be felt by human tongue. One executive states that people want food to have same qualities and not taste different or feel weird.

The tiny capsules of fat, protein or even plastic, can be designed to deliver foods to particular part of the digestive tract. Other new technologies can remove fishy smell of fish, dry pomegranate into flavourless powder and possibly deliver nutritional benefits of green bean through a slice of cake. A new brand of peanut butter, Zap, is imperceptibly fortified with powdered beets, carrots and bananas.

Nutritious Chocolate, a new product includes besides the usual ingredients like chocolate, cocoa butter etc. such ingredients like broccoli, cranberries, nectarines, parsley, pomegranate, watermelons, kale and more – a total of 30 additional plants in powdered form.

Whether the nutritional benefits of the original foods survive in additive form is still to be seen. Dr. Kessler states that tomato is good for you but whether lycopene in a tomato is good for you or whether synthetic and microencapsulated lycopene is also good for you is to be shown.

One yogurt manufacturing company has cultivated 3,000 different strains of lactic acid bacteria for preparing 'probiotic' yogurt. It claims that each culture helps with different problems or ailments. One works on slow transit i.e. for constipation and another works for providing immunity. So different yogurts are made specially for different problems.

Such ailment specific products have been developed by others also. Orange juice manufacturer has offered one tailored for bone loss, another for acid reflux and yet another for weight loss. Drivers for these health-specific products are aging population, changes in labeling rules, general trend towards micromarketing that makes consumers accept etc. Soon there will be a large number of food products meant for such health problems.

Also due to rising costs of raw materials, flavourings and transport etc. the R&D is focusing on inexpensive 'value-added' products that consumers will pay extra for instead of adding expensive ingredients like sun-dried tomatoes or honey-roasted almonds to existing products. One chocolate company offers health benefits due to high levels of antioxidants and charges premium for its product.

Eating the right nutrients may be a complicated puzzle but may be solved by eating a wide range of basic foods. Dr. Lichtenstein of Tufts says that recent surprises and setbacks in nutrition research makes one wonder whether adding nutrients to diet is the right approach, although vitamin fortification has a role. The benefit of eating fish rather than using omega-3 in other foods is that due to fish you eat less of something else like steak. So the solution to the puzzle is long way away.

Condensed from an article in New York Times September 17, 2008

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Food & Nutrition News

Global Food Situation at a Crossroads, Says International Rice Research Institute

Los Baños, Philippines (19-Sep-2008) – Declining agricultural productivity and continued growing demand have brought the world food situation to a crossroads. Failure to act now through a wholesale reinvestment in agriculture—including research into improved technologies, infrastructure development, and training and education of agricultural scientists and trainers—could lead to a long-term crisis that makes the price spikes of 2008 seem a mere blip. This stark warning, in line with calls from organizations such as the World Bank, the World Food Program, and Asian Development Bank (ADB), was issued by members of the Board of Trustees (BOT) of the International Rice Research Institute (IRRI) following their meeting on 16-19 September at Institute headquarters in Los Baños, Philippines.

The global community needs to remember two key things," said BOT Chair Elizabeth Woods. "First, that growth in agricultural productivity is the only way to ensure that people have access to enough affordable food. Second, that achieving this is a long-term effort. A year or two of extra funding for

agricultural research is not enough. To ensure that improved technologies flow from the research and development pipeline, a sustained re-investment in agriculture is crucial."

Dr. Woods pointed out that the annual rice yield growth rate has dropped to less than 1% in recent years, compared with 2□% during the Green Revolution period of 1967-90. Based on projected income and population growth, annual productivity growth of almost 1.5% will be needed at least until 2020.

The meeting coincided with the release of a report by the Food and Agriculture Organization of the United Nations stating that higher food prices are partly to blame for the number of hungry people growing by 75 million to around 925 million worldwide—and further jeopardizing the UN Millennium Development Goal of halving hunger and poverty by 2015.

Another report, released this week by the ADB, argued that, for Asian countries to prevent future food price surges, agriculture needs wide-scale structural reform. This report also warned that, with demand remaining higher than supply, any supply shock would further increase cereal prices. An ADB report released in August increased the cut-off level for poverty from US$1 per day to $1.35 per day, meaning that millions more people are trapped in poverty than previously thought. Disturbingly, the new measure does not take into account the higher food and fuel prices of 2008, which, according to some estimates, have plunged a further 100 million people below the poverty line. Although the export price of rice has settled from more than $1,000 per ton in May to around $700 per ton, it is still double the price of one year ago.

The current crisis serves as a timely wakeup call for governments, multilateral organizations, and donors to refocus on agriculture. Various national and international bodies have called for a second Green Revolution to feed the world in the face of a growing population and shrinking land base for agricultural uses. Unlike the first Green Revolution, in which productivity growth was achieved with the introduction of modern varieties in tandem with assured irrigation and inputs (such as fertilizer), and guaranteed prices, the second Green Revolution needs to achieve the same goal in the face of several 21st-century challenges. These challenges include water and land scarcity, environmental degradation, skyrocketing input prices, and globalized marketplaces, all within the context of global climate change.

In short, the second Green Revolution will have to expand productivity sustainably, with fewer resources.

http://www.soyatech.com/news_story.php?id=10386

Food supply may already include clone offspring

The U.S. Food and Drug Administration (FDA) said this week that meat and milk from the offspring of cloned animals could already be in the U.S. food supply.

The FDA said it's not possible to know for sure since there is no way to tell the difference between cloned and conventional products. "It is theoretically possible," said FDA Spokesperson Siobhan DeLancey. "I don't know whether they are or not. I could imagine there are not very many of them."

The FDA released a risk assessment in January determining that meat and milk from cloned animals and their offspring were as safe as products from non-cloned animals. Reuters states that there are an estimated 600 cloned animals in the U.S.

Cloning opponents argue there hasn't been enough research investigating whether consuming the products of cloned animals and their offspring is safe.

IFT Weekly Newsletter September 3, 2008

Paprika food colour is safe

Paprika as food colour is increasingly being used by the food industry. Safety tests on rats found paprika food colour as safe. The toxicity and carcinogenicity studies of paprika colour were performed by Inoue and colleagues 2008.

Treatment with paprika color caused a significant increase in incidence of hepatocellular vacuolation, in 5% males, however, no toxicological effects or other abnormal effects such as tumors were noted.

The authors concluded that, based on slight histopathological changes, noted as hepatocellular vacuolation, the no-observed-effect level (NOEL) was estimated to be 2.5% in the diet (1253 mg/kg bw/day) and the the no-observed-effect level (NOEL) was 2.5 per cent in the diet, or 1253 mg per kg of bodyweight per day, for the male rats. The NOEL for the female rats was determined to be five per cent, or 2826 mg per kg of bodyweight per day. Paprika colour is therefore not carcinogenic nor toxic under present conditions.

http://www.ncbi.nlm.nih.gov/pubmed/18539379

Contaminated Chinese baby formula sickens more than 6,000

New information continues to emerge about the contaminated Chinese baby formula, which is linked to the deaths of three babies and sickened thousands of others.

Current estimates indicate that nearly 6,200 children have become ill due to milk formula powder that contained melamine, a chemical used in plastics. Melamine was implicated in last year's contaminated pet-food scandal during which an estimated 1,500 dogs and cats died after eating Chinese-manufactured pet food. Many of the children have developed urinary problems, including kidney stones, with some experiencing acute kidney failure. It is thought that the banned chemical was added to the milk to make it seem higher in protein.

Chinese milk producers have instituted massive recalls. This is the latest in a series of tainted Chinese product scandals, including one in 2004 that also involved baby formula.

Updates on the timeline of this latest incident show that certain companies and government officials may have known about the contamination for some time before it was finally made public. Two milk dealers have been arrested in connection with the scandal.

IFT Weekly Newsletter September 17, 2008

Italian Scientists Develop Methods to Remove All Traces of Allergenic Proteins From Refined Oils

It has been assumed that the physical and chemical processes involved in refining edible oils are so rigorous that there is an almost complete removal of proteins which might act as allergens. Nevertheless, there remains the possibility that residual traces could still provoke an allergic reaction in particularly sensitive individuals. With this in mind, Matteo Ramazzotti and colleagues from the University of Florence in Italy have developed methods for the extraction and analysis of any residual proteins in commercial samples of soy, peanut, sunflower and maize oils.

In their study, Ramazzotti et al. optimised a single step protein extraction method using phosphate buffered saline (PBS) at pH 6.5, which they applied to the commercial oil samples. Extracted proteins were quantified by colorimetric assays and amino acid analysis, and preliminary tests were carried out to assess the allergenicity of the proteins which had been extracted.

The authors explain that due to the extremely low protein content of the oils, attention was paid to the use of appropriately cleaned glassware or disposable plastics in order to avoid dust and protein contamination from other sources. Only in the case of soybean oil, for which the PBS/oil separation was poor, was isobutanol added prior to centrifugation. The samples were then dialysed for 48 hours at room temperature to remove the salt, and the salt-free proteins dried in a vacuum-concentrator centrifuge and stored at -20 o C until use. Following acid hydrolysis of the proteins, amino acids were separated and analysed with an amino acid analyser and results used to estimate average total protein content. Electrophoresis of the protein extracts allowed estimates of their molecular weights to be made. Extracted proteins were electro-transferred on to a nitrocellulose membrane by Western blot techniques and then incubated with sera derived from children allergic to soy, maize or peanut allergens. Negative control sera from non-allergic children were also obtained.

The colorimetric assays were able to measure total residual protein content varying from 6.5 - 19 µg/100 ml of oil. By amino acid analysis the figures ranged from 33 - 166 µg/100 ml of oil. Proteins were present in the two commercial samples of soybean oil analysed, with protein band patterns differing, probably due to the different refining methods used. For the two maize oils, similar results were seen, but in this case staining revealed three major proteins bands at 12 kDa, 60 kDa and >200 kDa.

Peanut oils were shown to contain three major protein bands around 30 - 40 kDa region with Coomassie Blue staining. Silver nitrate staining revealed a further two protein bands at 14 and 66 kDa. The band at 66 kDa had a molecular weight similar to the known peanut allergen - Ara h 1. However, results from the tests with the allergic-child sera showed the presence of IgE responsive proteins in refined peanut oil, but with molecular weights of 70 - 80 kDa, which the authors say are not presently known to be associated with peanut allergens.

There was a lack of response to the sera for soybean and maize extracts. IgE levels for soybean and maize were all classifiable in RAST CAP classes 1 and 2, with IgE levels below 17.5 kU/litre.

In conclusion, it is suggested that immuno-based methods should be applied more widely to refined seed oils before it can be confidently asserted they are safe for allergic individuals. (Ramazzotti et al. Food and Chemical Toxicology, article in press, doi:10.1016/j.fct.2008.08.005).

http://www.soyatech.com/news_story.php?id=9997

Is the Mediterranean diet a miracle diet?

Nutritionists have long touted the Mediterranean diet as having immense health benefits, but new research shows that those benefits may go far beyond what anyone imagined.

Italian researchers found that those who eat a diet high in olive oil, fish, nuts, grains, fruits, vegetables and red wine have a lower risk of developing many chronic diseases, such as heart disease, cancer, Alzheimer's and Parkinson's. They believe that a 10-percent reduction in the incidence of disease could be possible by eating a diet that follows Mediterranean guidelines and is also low in dairy, meat and alcohol.

The scientists collected data on 1,574,299 people who participated in 12 international studies of dietary habits and health. The data showed that those who followed a Mediterranean diet had a 9-percent lower mortality rate, a 6-percent lower rate of cancer, a 9-percent lower incidence of death due to cardiovascular disease and a13-percent lower rate of Parkinson's and Alzheimer's diseases.

The study appeared in the *British Medical Journal.*

IFT Weekly Newsletter September 17, 2008

Rice Bran Consumption May Considerably Increase Exposure to Arsenic

Eating rice bran - a "superfood" - may increase exposure to the carcinogen arsenic. The news is particularly worrying as the bran is given to malnourished children in poor countries as a food supplement.

Arsenic occurs naturally in groundwater as a result of minerals leaching into rocks. Although found in varying amounts in drinking water around the world, including in the US, Australia and China, these countries have limits on how much can be present based on World Health Organization (WHO) guidelines. In Bangladesh, where people are exposed to very high levels, the problem is more serious.

The toxic metal also gets taken up by plants grown in contaminated water, including rice. Despite this, only China has up-to-date standards for safe amounts of arsenic in food.

Previously, Andrew Meharg of the University of Aberdeen, UK, and colleagues showed that in areas where arsenic is present, brown rice contains more arsenic than "polished" white rice, in which the outer bran has been removed. Now a team led by Meharg has polished brown rice from China and Bangladesh, allowing them to separate and analyse the bran. They found that it contained four times as much arsenic as brown rice and six times as much as white rice, suggesting that arsenic is concentrated in the bran.

This sounds like good news - the bran is usually discarded. But in recent years, a number of rice bran products, rich in vitamins and fibre, have come onto the market, mainly targeted at health-food consumers.

Meharg purchased nine of these products online, made in the US and in Japan. All were found to contain between 0.48 and 1.16 milligrams of arsenic per kilogram, which exceeds China's legal limit of 0.15 mg/kg (Environmental Science and Technology , DOI: 10.1021/es801238p). Four of the products are "rice bran solubles", which can be mixed with water to make a drink. At least two of these - both made by Nutracea of Phoenix, Arizona - are distributed to children in the developing world.

So how dangerous is it to eat rice bran? Meharg says these arsenic-containing rice bran solubles are "inappropriate for use in food-aid programmes". Indeed, the risk of skin, lung, bladder and kidney cancer increases with arsenic intake, leading toxicologists to say that there is no "safe" limit.

But such risks must be weighed against the benefits of the foods. Nutracea has distributed rice bran solubles to 67,000 pre-school children in Guatemala, and monitored the nutritional state of 150 of

them. At the start, 37 per cent were deemed malnourished, but that dropped to just 5 per cent after taking 15 grams of solubles, five days a week for six months.

As *New Scientist* went to press, Nutracea had not responded to a request for comment.

Marie Vahter, an environmental toxicologist at the Karolinska Institute in Stockholm, Sweden, believes the benefits of consuming tainted bran do not outweigh the risks. Her own studies suggest that children are particularly susceptible to the effects of arsenic.

"One would expect dietary supplements to be virtually free of unwanted substances like arsenic - especially when aimed at children," adds Philippe Grandjean of the Harvard School of Public Health.

The WHO told New Scientist : "We are looking for and are open to new evidence about the toxicity of chemicals that are important for public health, and obviously arsenic is one of these."

From: New Scientist: August 30, 2008

Back to School With Soy

Parents probably wouldn't have guessed, but kids like soyfoods. A Montgomery Country, Maryland study finds middle-school students enjoy soyfoods as much as meat counterparts. The trick—replacing foods kids already enjoy with tasty and nutritious soyfoods.

A plate waste study, funded by the United Soybean Board, took popular menu items, including macaroni & cheese, burgers, chicken nuggets, and chicken Caesar salad, and replaced them with soyfoods. Soy pasta was used in the macaroni and cheese, soy burgers and a spicy black bean burger replaced meat burgers, veggie chik'n nuggets substituted for chicken nuggets, and veggie chik'n was used in the Caesar salad. Kids ate just as much of the soyfoods as they did of traditional menu items—indicating a high acceptability of soyfoods. The study was such a success, that Montgomery County School Food Service has replaced a couple of its menu items with soyfoods despite slightly higher costs.

Soy: Complete Nutrition

Soyfoods are a complete source of protein with essential amino acids, vitamins, and minerals needed for growth and development. Soyfoods are also low in fat, calories, saturated fat and are cholesterol free—making them a healthy option. Studies have shown that eating soy at a young age may improve athletic performance, help manage diabetes, and may decrease risk of breast cancer. Picky kids and children with peanut and dairy allergies can choose from a wide variety of soy products—soy burgers, dairy free yogurts and frozen desserts, soy nut butter, edamame, soymilk, and more!

Try Soy at Home

Do your own study on soyfoods at home! Replace your children's favorite foods with nutritious soyfoods and see if they notice the difference. Try fun soyfoods, like edamame, that turn meal time into playtime. Help your family gain health with soyfoods at home!

SANA (Soyfood Association of North America) Press Release, September 08, 2008

Soyfoods Intake Appears to Have No Substantial Effect on Colorectal Cancer Risk: Japanese Study

A new study, 'Dietary soy and isoflavone intake and risk of colorectal cancer in the Japan public health center-based prospective study,' is now available (see also http://www.newsrx.com/library/topics/Colon-Cancer-Prevention.html). "Several experimental studies have reported that the anticarcinogenic properties of dietary soy play an important role in preventing colorectal cancer. However, few epidemiologic studies have examined this association in general populations and their findings have been inconsistent," scientists in Tokyo, Japan report.

"We investigated the association between dietary soy and isoflavone intake and incidence of colorectal cancer in a prospective cohort study of 83,063 Japanese men and women, ages 45 to 74 years. Dietary soy and isoflavone intake was measured through a validated food frequency questionnaire in 1995 and 1998. Throughout 2004, a total of 886 cases of colorectal cancer were newly identified (291 proximal colon, 286 distal colon, and 277 rectum). The hazard ratios and 95% confidence intervals (95% CIs) were estimated by fitting a Cox proportional hazards model. The intake of isoflavones, miso soup, and soy food was not associated with colorectal cancer in either men or women. By colorectal cancer subsite, the risk of proximal colon cancer in men decreased with increasing consumption of isoflavones, miso soup, and soy food. Compared with men in the lowest quartiles of isoflavones, miso soup, and soy food intake, the hazard ratios in the highest quartiles were 0.55 (95% CI, 0.33-0.92), 0.72 (95% CI, 0.43-1.21), and 0.51 (95% CI, 0.30-0.87), respectively. The results showed no association for distal colon and rectal cancer in men or for subsites of colorectal cancer in women," wrote M. Akhter and colleagues, Research Center for Cancer Prevention and Screening.

The researchers concluded: "These findings suggest that the intake of isoflavones, miso soup, and soy food has no substantial effect on the risk of colorectal cancer in Japanese men and women."

Akhter and colleagues published their study in Cancer Epidemiology, Biomarkers & Prevention (Dietary soy and isoflavone intake and risk of colorectal cancer in the Japan public health center-based prospective study. Cancer Epidemiology, Biomarkers & Prevention, 2008;17(8):2128-35).

Women's Health Weekly: SEP 11, 2008

GM Crops Protect Their Neighbors From Pests: Chinese Study

A study in northern China indicates that genetically modified cotton, altered to express the insecticide Bt, not only reduces pest populations among those crops, but also reduces pests among other nearby crops that have not been modified with Bt. These findings could offer promising new ideas for controlling pests and maximizing crop yields in the future. The report will be published by the journal Science on Friday, 19 September. Science is the journal of AAAS, the nonprofit science society.

Dr. Kong-Ming Wu from the Chinese Academy of Agricultural Sciences in Beijing and colleagues analyzed data from 1997 to 2007 about the agriculture of Bt cotton in six provinces in northern China, covering 38 million hectares of farmland cultivated by 10 million resource-poor farmers. They compared that information with data on pest populations in the region, focusing on the cotton bollworm, a serious pest for Chinese farmers.

The researchers' results show that populations of the cotton bollworm were dramatically reduced with

the introduction of Bt cotton, especially during the period from 2002 to 2006. They considered the contribution of temperature and rainfall along with the introduction of the genetically modified cotton, and confirmed that Bt cotton was responsible for the long-term suppression of the pests in the cotton and a host of other un-modified crops after 10 years. Dr. Wu and colleagues suggest that this may be because cotton is the main host for bollworm eggs, and reducing larval populations in the cotton consequently reduces the entire population and protects other crops.

Bt is an insecticide derived from the spores and toxic crystals of the bacteria Bacillus thuringiensis, and has been sold commercially since 1960. It is considered non-toxic to humans, animals, fish, plants, micro-organisms, and most insects. However, it is highly selective and lethal to caterpillars of moths and butterflies. Bt is currently registered and marketed for use as an insecticide in more than 50 countries worldwide. It does not contaminate groundwater because it degrades so rapidly.

The authors say that Bt technology gives China a new tool for pest control, and that all farmers in a Bt cotton-planting region will experience the benefits. "In 1992, cotton bollworms caused about a 30 percent loss in the cotton yield in northern China. Because of the high costs for pest control then, many farmers refused to plant cotton," said Dr. Wu in an email interview. "This case study of Bt cotton implies that other Bt crops, such as Bt rice, may also have great potential for agricultural practices in China. This success with Bt cotton could push forward the commercial processes of genetically modified crops in China."

Dr. Jian-Zhou Zhao, a co-author of the report, also highlights the health benefits of using Bt cotton. "Poisoning from other insecticides, and even death, was a big problem for cotton farmers in the 1990's," Zhou said. "Most farmers did not have proper protective clothes while applying insecticides with small backpack sprayers. This may be another reason that many farmers refused to plant cotton before Bt was available -- it was too dangerous and scary."

The use of Bt cotton and other genetically modified crops could provide a safer and more economical solution to pest control in many small farms around the world. Dr. Wu and the team of researchers, however, acknowledge that a major challenge to the success of Bt cotton is the potential for insects to evolve resistance to the insecticide. They insist that despite its considerable value, Bt cotton should still be considered only one component in the overall management of pests.

"Suppression of Cotton Bollworm in Multiple Crops in China in Areas with Bt Toxin-Containing Cotton," by Wu et al.

http://www.soyatech.com/news_story.php?id=10369

Sprouted bread sprouts strong sales

Soak some grain seeds until they grow, grind them into a mash, then form them into a loaf. It's bread baking the biblical way, with a dash of seriously hippie subculture. And now, thanks to growing interest in whole grains, so-called sprouted breads are getting a surprising amount of mainstream attention. Once limited mostly to natural foods shops, sprouted breads recently have begun showing up in mass market grocers, and no longer just as loaves. Consumers can get sprouted grain bagels, English muffins, hamburger buns, even hot dog rolls.

It's a traditionally flourless bread baking technique supposedly drawn from Ezekiel 4:9 of the Old Testament, in which people are told to form bread from a mixture of wheat, barley, beans, lentils and millet. Modern production techniques involve soaking grain kernels until a small sprout emerges. The sprouted grains then are mashed to create a damp paste that is used to make breads, tortillas, bagels,

pasta and cereals. The result is a dense, chewy bread with a distinctly grainy yet pleasant taste. But it isn't easy to make, which might explain why the growth in products hasn't been accompanied by do-it-yourself recipes.

The germinating process isn't the sort of thing to try at home, says Joseph Tuck, chief executive of Alvarado Street Bakery in Petaluma, Calif. "If you under or over sprout the product, it doesn't work," he says. Tuck declined to give sales numbers, but said business is robust. The worker-owned bakery recently expanded, producing 13 organic sprouted breads, including one sold under the Trader Joe's label.

Food for Life, maker of the popular Ezekiel 4:9 brand of sprouted grain products, has seen similar growth. The Corona, Calif., family business started as a natural foods store in 1964. Today, it sells more than 60 different sprouted products. Unlike many breads, sprouted breads lack preservatives to keep them fresh on the shelf, so most are found in the grocer's freezer section. That can make it a hard find for first-timers.

Most shoppers reach for their bread at the bakery or in the bread aisle. That's why Alvarado keeps some in the freezer section, but also thaws its bread daily at grocers such as Stop & Shop so customers can squeeze and feel it. "We want to be the normal, average American choice for bread," says Tuck. Part of the appeal of sprouted grain breads are the health claims, including that they help with weight loss, are easier to digest than regular grains and are good for diabetics (their complex carbohydrates don't affect blood sugar as much as refined grains).

Joan Salge Blake, a spokeswoman for the American Dietetic Association, isn't sure there is evidence that sprouted grains are better than conventional whole grains, but says the sprouted products certainly are excellent nutritional choices. But she is impressed that sprouted grain products have made the jump from niche natural foods stores to mainstream grocers, saying it's evidence that people are developing a better understanding of the role of food in good health.

Stop & Shop began selling Ezekiel 4:9 and Alvarado Street Bakery sprouted breads seven years ago, and company spokesman Robert Keane says sales have doubled every year since.

Lynn Gordon says getting into sprouted breads back in 1997 is what pushed her bakery, Minneapolis-based French Meadow Bakery, from a small-time operation to a multimillion dollar bakery and cafe business. Her inspiration was her own diet. She'd stopped eating bread in favor of sweetened power bars, but her then teenage son convinced her to instead try making a protein-rich bread minus the sugars. At first, Gordon thought it was impossible. Then she hired a cereal chemist and started working with sprouted lentils and fava beans. "At first, the breads tasted horrible. But once we had it, we had it."

Today, French Meadow Bakery employs 65 people and every month bakes 25,000 loaves of bread formed from a blend of traditional flours and sprouted grains. Not everyone who eats sprouted breads is a total convert. But people such as Phil Mackler, a 51-year-old sales manager from Longmeadow, Mass., says he does like what eating it has done for him. Since eliminating flour and sugar from his diet as part of switching to sprouted grain breads, Mackler has lost 20 pounds. Now he urges other to eat it, even though he still prefers the taste of a buttered white roll. "I'm not an organic tree hugger-type," he says. "I mentioned it to one guy and now he's eating it and his daughter is taking it into school for her sandwich."

From: Story by Victoria Brett for Associated Press (WTOP News.Com September 12, 2008)

Trans Fats May Increase Colon Cancer Risk: University of North Carolina Research

Trans-fatty acid consumption had previously been associated with an increased risk of cardiovascular disease. Now researchers in the US have found that a high consumption of trans-fatty acids is also associated with an increased risk of pre-cancerous growths known as polyps or adenomas.

Colorectal cancer is a major health concern in the US, with over 150,000 diagnoses and 52,180 deaths from the disease likely to have occurred in 2007. Colorectal cancers develop from pre-cursor lesions, colorectal adenomatous polyps.

Trans-fatty acids are formed as by-products during the partial hydrogenatioin of vegetable oils to harden them and increase their shelf life. They are found in many baked products. Consumption of trans-fatty acids is associated with increased levels of low density lipoprotein and hence cardiovascular disease. There is also some evidence to suggest a link with type 2 diabetes. Now the possibility has been raised that trans-fatty acids may alter the concentration of fatty acids or bile acids in the colon, which may result in irritation of the colonic mucosa, increasing oxidative stress and inflammation. Trans-fatty acids are also associated with insulin resistance and this may lead to increased cellular proliferation, which is associated with colorectal cancer.

To investigate the link, if any, between trans fats and colon cancer, Lisa Vinikoor and colleagues from the University of North Carolina studied 622 subjects (173 cases and 449 controls) who had had colonoscopies at the University of North Carolina Hospitals during 2001 - 2002. Subjects filled in food frequency questionnaires as well as answering questions regarding physical activity and other health issues. Results were adjusted for energy intake, physical activity and alcohol consumption. Cases included a higher proportion of obese subjects as well as reporting higher than mean consumption of alcohol and energy intake than controls.

Results revealed that cases reported a higher consumption of trans-fatty acids (median 4.12g) compared to controls (median 3.61g). When the subjects were divided into quartiles with regards to trans-fatty acid consumption, it was revealed that those in the top quartile were 86% more likely to have colon polyps than those in the bottom quartile. There also appeared to be a threshold effect, with no substantial increase in risk seen for people in the bottom three quartiles. Subjects in the fourth quartile of consumption were associated with the largest increase in prevalence among all categories of location, number and size of adenomas.

The authors concluded that high trans-fatty acid consumption may be associated with an increased risk of developing colorectal adenomas. This risk appears to have a threshold. Therefore people consuming low to average amounts of trans-fatty acids do not share this risk. They also note that it may not be the trans-fatty acids per se that are associated with the risk of colorectal adenomas, they may instead be a proxy for unhealthy behaviours, although this study did control for other unhealthy behaviours associated with colorectal adenoma risk.

Overall, the results of the study suggest that consumption of large amounts of trans fatty acids may increase the risk of colorectal cancer and so provide additional support to recommendations to limit trans fatty acid consumption. (Published in the American Journal of Epidemiology, 168 (3), 2008, doi: 10.1093/aje/kwn134. Press release Reuters UK)

http://www.soyatech.com/news_story.php?id=10104

Regulatory News

Foods 'should label up eco-costs'

Food packaging could be embedded with computer chips that instantly link your phone to an on-line sustainable food guide, a UK conference has heard.

The guides would help consumers navigate their way through the ethical and ecological decisions about what they eat, the proponents argue. The UK should lead Europe on this approach, food policy expert Professor Tim Lang said. He was speaking at the British Association Science Festival.

Ethical impact

The criteria used to judge food sustainability are still up for debate. "Do I eat green beans from Kenya, because they are good for me, or do I say no because there are four litres of water embedded in each stem of green bean?" asked Professor Lang, from City University, London.

He said scientists and policy-makers now realised the environmental, ethical, and health impacts of the food we ate. Producers needed to find a way to present this information to the consumer, he told the conference. He outlined a number of criteria that consumers should consider when buying food: how much energy and water are used to produce each calorie of food; what is the impact of the food item on climate, biodiversity, and the labour-force of the country it was grown in, and what are the health and financial costs of food.

Criteria agreement

"Packaging could be the point of entry for [this] information," said Professor Lang. Information on socio-economic and environmental criteria could be presented simply through "food flowers" - diagrams where each petal represents a different impact, with the shaded area of a petal showing how highly a food item scores.

The more detailed information could be accessed from a website and uploaded from food packaging to our mobile phones. There would, however, need to be universal agreement on which issues should be reflected in the labels. "That needs governments to agree with companies, to agree with civil society to agree what those criteria are," explained Professor Lang.

Story By Jennifer Carpenter, Science reporter, BBC News, Liverpool from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/science/nature/7604996.stm

Chocolate Lovers Pained by Candy Changes

More 'Chocolate' Candy Bars Now Include Vegetable Oils Instead of Pricey Cocoa Butter

For years, Sharon Leitner's candy bar of choice was Take 5. "I liked that it was a combination of different flavors," the Cincinnati resident said. "It was salty and sweet, [with] caramel and peanut butter and chocolate, and it had something for everybody." But this past spring, Leitner, 24, noticed a change. "It just didn't taste like it used to," she said. The new taste was "more waxy and artificial." A look at the bar's wrapper helped Leitner understand why: cocoa butter -- which experts say helps give

chocolate its smooth, creamy taste -- wasn't on the candy's ingredients list. "Then I started noticing that there were all kinds of other products that didn't have cocoa butter," she said.

Changes to the formulations of several candy bars has chocolate lovers like Leitner buzzing -- and not in a good way. Cybele May, the founder of the candy review Web site Candy Blog, said that in recent years rising cocoa prices have led candy companies like Hershey's -- the maker of Take 5 and the top chocolate-seller in the U.S. -- to replace cocoa butter with cheaper vegetable oils. The ingredients list for Take 5, for instance, now includes "palm, shea, sunflower and/or safflower oil." "They just ruined that," May said of the Take 5 bar.

Hershey, meanwhile, stands by its products. The company "is committed to making the world's best chocolate," said spokesman Kirk Saville.

The Cocoa Question

While a "handful" of the company's products do include vegetable oils other than cocoa butter, he said, "We continue to make Hershey's, Hershey's Kisses, Reese's peanut butter cups with pure milk chocolate as we have for over a century."

That defense -- that there are Hershey's products that still contain pure milk chocolate -- isn't enough for Leitner. "To me, shaving out the cocoa butter in the less-popular products kind of says that if you like Whatchamacallit [candy bars] you're less deserving of quality ingredients than say, someone who likes Reese's cups," she said.

Ingredients for Whatchamacallit bars include palm kernel and soybean oil and may also include sunflower or safflower oil, according to the candy's wrapper.

Cocoa Butter

Cocoa butter is fat derived from cocoa beans. Like other commodities, cocoa prices have skyrocketed in recent years. In 2006, one metric ton of African cocoa butter cost less than $4,000. Today, it costs more than $8,100, according to Judy Ganes, the president of J. Ganes Consulting in Katonah, New York. Ganes, whose company specializes in research on tropical food products, said that a combination of growing global demand for chocolate and problems in cocoa-producing countries -- heavy rains in Indonesia and civil war in the Ivory Coast -- have driven prices to peaks not seen since the 1970s. "It certainly has hurt manufacturers," Ganes said.

Ingredients: Truth About Food Labels

In the United States, when a so-called chocolate bar doesn't include cocoa butter or includes other oils, it can't actually be labeled chocolate. "According to the Food and Drug [Administration's] regulations for chocolate, cocoa butter is the required fat for chocolate," said Susan Smith, the spokeswoman for the National Confectioners Association.

In 2006, there was a challenge posed to this standard and to other standards for U.S. food products. The Grocery Manufacturers Association, the trade group representing the food, beverage and consumer products industry, petitioned the FDA to "modernize" its regulations.

GMA spokesman Brian Kennedy said that the goal of the petition was to accommodate innovation in the food industry. He said that under current regulations, for instance, if food companies make pasta out of a blend of whole wheat flour and white flour, they can't officially call it "pasta."

Take 5 used to be Sharon Leitner's favorite candy bar. But the Cincinnati resident says that Take 5's current blend of ingredients -- which, according to the candy's pacakaging, includes "palm, shea, sunflower and/or saffron oil" -- doesn't please her taste buds.

Made with Chocolate

A blended product, he said, would probably be more palatable to consumers than 100 percent whole wheat pasta. But if the new product isn't called pasta, he said, people won't buy it.

"When they want to have pasta, they want to purchase something that actually says pasta," Kennedy said.

But when the GMA petition came to light, it was its implications for chocolate that got attention: An appendix to the petition noted that the changes could allow for manufacturers to use vegetable oils other than cocoa butter to make chocolate. Both consumers and small chocolatiers decried the proposed changes. In 2007, Mars Inc., the No. 2 chocolate-seller in the U.S. and the maker of M&M's, broke ranks with industry peers and also came out against the petition.

This package of Milk Duds includes the label "made with Chocolate & Caramel." Candy critic Cybele May said that words and phrases such as "made with chocolate," "chocolatey" and "chocolate candy" are sometimes used by candymakers to describe candy that doesn't meet the federal government's standards for chocolate.

Chocolate Wars

Europe has had its own chocolate wars. In 2000, after years of heated debate, the European Union struck an agreement allowing for chocolate products to contain up to five percent of oils other than cocoa butter.

To date, the U.S. petition has gone nowhere. "FDA will complete the review of this petition in context of the Center's priorities," FDA spokesman Mike Herndon said in an e-mail to ABCNews.com.

"Mr. Goodbar is made with chocolate but is not a chocolate bar," candy critic Cybele May said. The ingredients list for the bar does include cocoa butter, but it also includes "palm shea, sunflower and/or safflower oil."

'Chocolatey' Goodness?

Meanwhile, May said that candymakers can skirt the regulations for what can be labeled chocolate by emblazoning their wrappers with phrases like "chocolatey," "made with chocolate" and "chocolate candy." Hershey's Kissables, she said, are one example. May, who blogged about Kissables earlier this month, said that when the candy contained cocoa butter, the candy's wrapper included the phrase "milk chocolate." It's since been replaced with "chocolate candy." On the back of the Kissables wrapper, the vegetable oils used are listed as "palm, shea, sunflower, and/or safflower oil."

Such combinations of oils and that "and/or" conjunction can be found on other candy wrappers too. It gives candy companies the flexibility to change which ingredients they use when vegetable oil prices fluctuate, said Barry Swanson, spokesperson for Institute of Food Technologists and a professor of food science at Washington State University.

"If one of those fats or oils becomes very expensive, they'll just use less of it," Swanson said. "I think anytime we're looking at increased costs, you're going to find more, shall we say, creative formulations to try to reduce the cost involved in producing a product," he said.

There's a difference between the old Hershey's Kissables wrapper (above, courtesy of www.candyblog.net) and the new one. Candy critic Cybele May says the new wrapper no longer says "milk chocolate" because the candy's formula has changed.

Cocoa Substitutes

Ingredients for Baby Ruth Miniatures include cocoa but also hydrogenated palm kernel and coconut oil.

May said that Hershey's isn't the only company that uses substitutes for cocoa butter. Baby Ruth bars by Nestle -- the third-biggest chocolate-seller in the U.S. -- once contained "real chocolate" but haven't had it for a long time, she said.

Nestle also recently introduced a Mexican bar in the United States called Carlos V. May said that the Mexican version of the bar was made of chocolate, but the American version is not. Attempts to reach Nestle's Mexican branch were unsuccessful.

Patricia Bowles, the communications manager of Nestle Confections and Snacks for Nestle's U.S. branch, said that the changes to Baby Ruth's ingredients took place before Nestle purchased the brand in the 1990s. Overall, she said, economic conditions haven't led Nestle to change the formulas for its products. "We are not quick to change something that we know our consumers love," she said.

Changing ingredients isn't the only way candymakers and other food producers cope with rising food costs; they can also change the sizes of their products and, most noticeably to consumers, they can raise prices. Both Mars and Hershey announced wholesale price increases earlier this month. Nestle, which also sells bottled water, frozen meals and other food products, has reported its 2008 profits were bolstered by price increases for its goods.

From: Story by Alice Gomstyn, ABC News Business Unit, ABC News Sept. 2, 2008

FDA to examine food allergy warnings on labels

One of the biggest frustrations of life with food allergies is the hodgepodge of warnings that a food might contain wrong ingredients. The warnings are voluntary – meaning there's no way to know if foods that don't bear the warning really should. And they're vague: Is "may contain traces of peanuts" more reliable than "made in the same factory as peanuts?"

But now, amid increasing concern that consumers are so confused they're starting to ignore the warnings, health officials in the U.S. and Canada are debating setting standards.

"Really, the safest thing you can do is make all your food at home from scratch, period," says Margaret Sova McCabe of Sanbornton, N.H., whose son Tommie, almost 8, is allergic to peanuts, dairy, wheat and five other products.

Not practical

But for her, making everything isn't practical. And she often spots longtime favorite safe foods suddenly bearing new warnings. Ms. McCabe, who is a law professor, questions how often the warnings signal liability protection rather than risk. "What does this really mean?" she asks.

The Food and Drug Administration will ask that and other questions at a public hearing on Sept. 16, a step toward developing "a long-term strategy."

Canadian authorities say accidental-allergy warnings are misleading and advises food makers to begin clarifying them, even as Health Canada researches a formal policy.

Plain language

Starting in 2006, a U.S. law required that foods disclose in plain language when they intentionally contain highly allergenic ingredients. Left out of the law are accidental-allergy warnings – for foods that might become contaminated because they were made in the same factory.

Three-quarters of parents of food-allergic children surveyed by the group in 2006 said they would never buy a food with an accidental-allergy warning, down from 85 percent in 2003, when such labels were novel. The FDA's own surveys found the allergic pay more attention to warnings that a food "may contain" an allergen than those "made in the same factory" labels.

From story by Lauran Neergaard of Associated Press, Dallas News Com September 2, 2008

New law requires meat labels to list country of origin

In a couple of weeks, American shoppers will be able to look at a cut of meat or a pound of hamburger and see something they've never seen before — a label that says where the meat came from. Starting Sept. 30, food manufacturers and grocery stores have to comply with a new federal law that requires "Country of Origin Labeling," or COOL, on beef, pork, chicken and lamb.

Beginning Sept. 30, expect to see country of origin labels on meats. The new labels will tell consumers whether their food came from animals raised in the U.S. or another country. The law also covers perishable items, such as fruits and vegetables and a variety of nuts. Some say this will enable consumers to avoid food that, for example, comes from countries that they have heard have food safety problems. It also will allow consumers to stick to American-grown food, if that is their preference.

Because of the complexities of the livestock industry, some product labels may list multiple countries. That's especially true of ground beef, since some meat processors combine cuts from a number of countries to make ground meat and hamburger patties. Food safety groups have hailed COOL as a necessary step toward broader consumer education and buying choices. But now they complain that the Department of Agriculture has defined it as narrowly as possible. For example, they say, the agency has defined a host of foods as "processed," such as mixed frozen vegetables, which exempts them from the new law.

"When they finalized this rule, they bent over backward to make as few things be covered as possible," said Michael Hansen, a senior staff scientist with Consumers Union. "There are giant, giant loopholes in the law."

Many in the meat industry, these advocates say, have fought the new labeling law because they don't want consumers to know that they're buying imported hamburger and beef cuts. USDA also stood against COOL, according to Lloyd Day, head of the agency's Agricultural Marketing Service, because of its projected impact on consumers and its estimated cost to the food industry: $2.5 billion in the first year. But Congress has decreed that COOL will take effect on Sept. 30, so the debate over its merits is largely over. Now the industry's bracing for COOL's impact.

"We don't know exactly how it's all going to work," said Colin Woodall, who follows the issue for the National Cattlemen' Beef Association. "And we won't know until it's fully up and running." In an

era of bar codes and tracking numbers, COOL might seem simple to enact. For a few food manufacturers, it will be.

"There's no change for me, because all of my ground beef has always carried the born-and-raised-in-the-U.S.A. label because I track everything," said Mike Callicrate, who operates Ranch Foods Direct in Colorado Springs, Colo. "It's not that complicated."

But getting COOL enacted has in fact been a complicated six-year effort. Congress first passed COOL in 2002, but the bill ran into heavy political resistance from food companies and the government itself. USDA and even Congress sided with food manufacturers who said the law would be too costly to enact, and COOL was delayed. By 2005, only the portion of COOL pertaining to fish and seafood was in effect. The idea gained momentum, though, following a string of recent food-borne illness outbreaks, new concerns over the safety of food imports and some of the largest meat recalls in history.

One of the biggest disagreements over the law's fine points is what constitutes a processed food item. Agriculture tried to clarify this with some guidelines issued in August. A bag of imported frozen peas, for instance, must list its country of origin under COOL. But a bag of peas mixed with carrots is considered processed, and does not. "It's considered processed if it's combined with one other ingredient," said Patty Lovera, assistant director of Food & Water Watch. "We think they're being incredibly broad."

USDA's Day said that pre-packaged imported foods like peas and carrots have to carry an origin label. But if vegetables are imported in bulk and the mixed together by a U.S. company, then they are considered processed and don't need one.

Another controversy involves imported livestock. Under COOL, meat derived from cattle imported into the United States for immediate slaughter can bear a label that states it's a product of its origin country and the United States, even though the animal was raised entirely outside the U.S.
Some fear that some meat packers who slaughter both imported and domestic cattle won't bother with specific labels, and instead will apply the same label to both.

From story by Stephen J. Hedges in Chicago Tribune, September 16, 2008

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Research in Nutrition & Nutraceuticals

Even Moderate Amounts of Soyfoods Reduce Cholesterol Levels: Northwestern University Review

For the estimated one in two adult Americans with elevated cholesterol levels, there is good news: eating soy burgers, tofu, and other soyfoods is a tasty way to lower both the total amount of cholesterol in the bloodstream and the so-called "bad" low-density lipoprotein (LDL) cholesterol that leads to heart attack and stroke.

The latest evidence, promoted during National Cholesterol Education Month, comes from a review of 35 high quality studies published over a ten-year period (1998-2008) where soy protein was consumed by healthy adults aged 25 to 65 years. Conducted by Arline McDonald, Ph.D., adjunct assistant professor in the Department of Preventive Medicine at Northwestern University's Feinberg School of Medicine, this exhaustive review finds even moderate consumption of soy products -- in the range of

20 to 50 grams of soy protein daily -- reduced LDL cholesterol levels by 4 percent to 6 percent and total cholesterol by 3 percent to 5 percent beyond what can be achieved through a fat-modified diet alone. These reductions were observed in premenopausal and postmenopausal women, in young adults (25 -30 years), middle-aged adults (30 to 60 years), and adults aged 60 and older. From a public health perspective, a 3 percent reduction in LDL cholesterol reduces mortality by 6 percent.

"These new findings provide encouragement to all Americans who want to reduce their risk for heart disease and stroke," said Dr. McDonald. "Accumulating evidence suggests that in addition to losing weight and eating foods lower in saturated fat and cholesterol, Americans can lower dangerous cholesterol in their systems by eating soyfoods." Soyfoods have also been shown to increase the "good" high-density lipoprotein (HDL) cholesterol, improve blood vessel elasticity, and lower triglycerides, which are all linked with improved heart health.

This new study also reinforces the science behind the health claim approved by the U.S. Food and Drug Administration (FDA) stating "25 grams of soy protein a day, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease." Soyfoods that carry this claim must have at least 6.25 grams of soy protein per serving, which is why health experts recommend getting four servings of soyfoods a day.

Besides being heart-healthy, accumulating research links soyfoods with a number of important health benefits, including improved brain function. According to Carey Gleason, Ph.D., a senior scientist at the University of Wisconsin's School of Medicine and Public Health, studies suggests that soyfoods boost mental ability while large population studies have found a lower incidence of dementia in people living in East Asian countries, where soyfoods are a staple.

At the same time, there is growing evidence that regular consumption of soy protein-containing foods and beverages may reduce the risk of prostate cancer in men by as much as 30 percent, according to a 2005 meta-analysis of six population studies from U.S., Canada, and three Asian countries.(i) Moreover, a cross-national analysis of prostate mortality rates in 42 countries documented significantly lower prostate cancer death rates with soy consumption.(ii) In contrast, specialists in men's health find no association between soyfoods and lower sperm concentrations or infertility.

"There are many things a man can do that will probably increase his fertility. Don't smoke, avoid recreational drugs, ask your doctor about the effects of prescription drugs you might be taking, and lose weight if you are obese. Soyfoods are perfectly safe for men and do not impact fertility negatively," explains Lawrence C. (Larry) Ross, M.D., Past President of the American Urological Association and head of urology at the University of Illinois at Chicago.

So how can Americans take advantage of these new research findings? The Soyfoods Association of North America recommends taking these simple steps:

- Start by looking for soy on the label of the foods and beverages you buy. Soy protein and whole soybeans are listed as ingredients.
- Look for foods and beverages that carry the soy and heart disease health claim. These products have about one-fourth to one-half of the soy protein needed each day for optimal heart health.
- Cook with soy ingredients to lower the amount of fat and cholesterol in your diet. This can include using soymilk to bake or make pancakes and substituting soy cheese in salads, sandwiches and as a topping over vegetables.
- Reduce the saturated fat in your diet by replacing dairy milk with soymilk, or substituting a serving of a frozen dairy free soy desserts for a serving of ice-cream. It's also good to know that most soy yogurts have no saturated fat or cholesterol compared to dairy yogurts.

- Switch to soy burgers or soy veggie dogs, which have no saturated fat or cholesterol compared to beef franks that have almost 6 grams of saturated fat and 25 mg of cholesterol.

The other important news for health-conscious consumers is there are more soy options available than ever before, which is why today, a third of all Americans are estimated to consume soyfoods or soy beverages once a month or more. Easily digestible, low in calories and saturated fat, and with no cholesterol, soyfoods include soymilk, tofu, cultured soy, non-meat alternatives, frozen dairy free soy treats, soy nuts, soy nut butter, and/or cereals and bars with soy.

http://www.soyfoods.org/pr/even-moderate-amounts-of-soyfoods-reduce-cholesterol-levels-promote-heart-health

German Researchers Isolate Bioactive Components From Flaxseed and Lupin, Work on Including Them in Food Products

Linseed is said to protect against cancer – but not everybody likes the taste. Researchers have now isolated the valuable components of the flax seeds. Incorporated in bread, cakes or dressings, they support the human organism without leaving an unpleasant aftertaste.

Cake that can ward off cancer? Noodles that lower the cholesterol level? What sounds like an advertising stunt could soon be a reality. Research scientists at the Fraunhofer Institute for Process Engineering and Packaging IVV in Freising have isolated valuable components of linseed and lupin seeds and experimentally incorporated them in various foodstuffs: the linseed in cakes, bread, dressings and sauces, the lupins in bread, rolls and pasta. The result is not only delicious, but healthy as well. "Flax is not only high in soluble fiber, but also contains lignans. These substances are phytoestrogens, so they have a similar effect to that of the isoflavones that we know from soy beans. According to the literature, they protect the organism against hormone-dependent forms of cancer – that is, breast and prostate cancer," says IVV project manager Dr. Katrin Hasenkopf. "The lupins, on the other hand, contain substances that our studies have found to have a positive impact on the cholesterol level."

But how do the researchers isolate the valuable components? "We make use of the differing solubility of the various constituents: If the pH value is acidic, the unwanted bitter substances are the first to dissolve. If the pH value is then set back to neutral, you get the valuable proteins – without the bitter taste. We are also able to separate large components from small ones by a series of filtration steps," explains Hasenkopf.

The scientists are already skilled at isolating the valuable constituents. Now they are preparing to conduct further investigations with the aim of confirming the effects they hope to see. "The healthy effects of linseed and lupin seeds are already known from literature, but so far there is a lack of conclusive scientific investigations on the subject. These substances undoubtedly have very high potential," says Hasenkopf. The researchers will be presenting the linseed and lupin foods at the Biotechnica trade fair in Hannover on October 7 through 9 (Hall 9, Stand E29). In about three years' time, the expert hopes, the new cholesterol-lowering foodstuffs will be available on supermarket shelves – maybe even including cakes, bread rolls and sauces enriched with the valuable substances obtained from flax seeds.

http://www.soyatech.com/news_story.php?id=10174

MU develops soy energy bar that's easier to digest

Soy products are noted for their health benefits, but they can leave consumers with intestinal bloating and discomfort due to indigestible carbohydrates contained in soy. University of Missouri researchers have developed a soy protein energy bar fortified with a strain of probiotics ("friendly" bacteria similar to bacteria that already exist in the human intestinal tract).

"Soy foods are recognized as healthy because of their high content of polyunsaturated fats, fiber, minerals and other health benefits," said Azlin Mustapha, food science researcher. "However, intestinal bloating induced by consuming soy products can offset their favorable qualities. Our research was aimed at developing a dry powder ingredient containing functional probiotics, which could be used to fortify soy foods and reduce raffinose and stachyose, the two carbohydrates that humans cannot digest," she said.

Researchers screened nine strains of probiotics for their ability to produce alpha-galactosidase, the enzyme that breaks down raffinose and stachyose. The probiotics were encapsulated with a gel to assure their survival while in storage and after entering the human body. They were then freeze-dried to be easily incorporated into the energy bar recipe. The probiotics remained alive in large numbers for more than two months in this condition.

Fifty untrained panelists in a sensory test tasted small samples from three energy bars: one containing the encapsulated freeze-dried probiotics, one containing unencapsulated freeze-dried probiotics and a third with no probiotics. "They could detect no difference in flavor or quality in the three," Mustapha said. There are no soy energy bars on the market today that contain probiotics, making this a novel product, she said. "Freeze-dried microencapsulated probiotics may be a promising way to produce more functional soy food products without the unwanted side effects," she said.

News from University of Missouri Extension September 19, 2008

New Research Finds Healthful Compounds in Germinated Rice

A team of researchers has identified the active compounds that contribute to the health benefits of pre-germinated brown rice; the healthy components are a related set of sterol-like molecules known as acylated steryl-beta-glucosides (ASGs).

Pre-germinated rice (PR) is an emerging health food whereby brown rice is soaked in warm water prior to cooking; the warm bath induces germination, or sprouting, which stimulates rice enzymes to produce more nutrients. One such nutrient is the important brain chemical GABA (PR is thus often referred to as "GABA rice"), and animal studies have shown that a PR-rich diet can improve cognitive function. Other studies have found that PR can also act as an anti-diabetic.

The chemicals behind this effect were unknown, but now Robert Yu and colleagues used mass spectrometry and nuclear magnetic resonance approaches and identified the bioactive compounds as ASGs, a diverse family of molecules that consists of a glucose derivative, fatty acids, and sterols. The ASGs were concentrated in the rice bran (outer layer) and not the seed, so they would not be found in white rice.

The researchers then demonstrated that the ASGs had the ability to activate enzymes related to diabetes, and this activation required the acyl chemical group; regular steryl glucosides (SGs) had no effect. And, although ASGs are found in many plants, soybean derived ASGs had no effect on the

diabetic enzymes, indicating the ASG complement specific to rice may be unique in its diabetic benefits. This study appears in the October issue of Journal of Lipid Research.

http://www.soyatech.com/news_story.php?id=10409

Supplement Lowers Cholesterol by as Much as 15% in One Month

According to recent statistics compiled by the American Heart Association, more than 105 million U.S. adults (age 20 and older) have elevated cholesterol levels, defined as a total blood cholesterol level of 200 or more milligrams per deciliter (mg/dL). Elevated cholesterol levels -- categorized as "borderline high", "high", or "very high" -- can increase the risk for cardiovascular disease, having a heart attack, or dying of heart disease.

Newly available is a drug-free, vegetarian product called Cholest Intercept, being launched this month by Natrol, Inc., a premier marketer, manufacturer, and distributor of nationally branded nutritional products. Taken as directed along with a heart-healthy diet and exercise program, Cholest Intercept is a natural, safe, effective way to lower LDL ("bad") cholesterol by as much as 15 percent in as little as 4 weeks, while also preserving HDL ("good") cholesterol.

The introduction of Cholest Intercept, offered by Rite Aid and www.Natrol.com, coincides with September's National Cholesterol Education Month, representing a good time for consumers to check their blood cholesterol, and take steps to lower it if it is high. September is also a good time for consumers to learn about lipid profiles, as well as food and lifestyle choices to help them reach healthy cholesterol goals. A program of the National Heart, Lung, and Blood Institute, National Cholesterol Education Month offers helpful resources for consumers to use through its Web site at hp2010.nhlbihin.net/cholmonth/.

U.S. Rite Aid stores are now offering a "buy one, get one free" special on Natrol Cholest Intercept through September 27, 2008. Natrol is also providing information to help consumers learn more about cholesterol and health, including a Cholesterol Control Tip Sheet inside every Cholest Intercept package. Additionally, Natrol has produced a Quest For Lower Cholesterol brochure for consumers and health food retailers.

According to Dr. Michael Yatcilla, Natrol's Vice President of Research and Development, "Cholest Intercept contains an advanced formula of plant sterols that can actively compete with food cholesterol for absorption in the small intestines. When Cholest Intercept is taken with meals, the body absorbs less cholesterol from fish, meat, dairy, eggs, and other animal products. This results in lower levels of LDL cholesterol in the blood."

He added, "Additionally, Cholest Intercept contains B-vitamins which have been shown to help maintain normal homocysteine levels that are already in the normal range. Healthy homocysteine levels are important for cardiovascular health."

Cholest Intercept features plant sterols by Heart Choice, a premium ingredient brand (Natrol Cholest Intercept is the only supplement with this ingredient in tablet form). Plant sterols -- which naturally exist in low amounts in various fruits, vegetables, nuts, and other foods -- have been clinically studied for their cholesterol lowering abilities. Two Cholest Intercept tablets, taken three times daily with meals, provide a clinically effective plant sterol dose of 2 grams per day.

While Cholest Intercept is not intended to replace cholesterol-lowering medications, it can be safely taken in conjunction with cholesterol-lowering statin drugs. As with all medications and supplements, it's important to consult a health care professional before taking Cholest Intercept with prescription therapy.

http://www.reuters.com/article/pressRelease/idUS58713+15-Sep-2008+BW20080915

Soy Isoflavone-Containing Diets May Help Diabetes Sufferers: University of Saskatchewan Study

"Soy isoflavone-containing diets have been reported to be beneficial in diabetes (see also http://www.newsrx.com/library/topics/Diabetes.html). This present study investigated the hypoglycemic effects of isoflavones in streptozotocin (STZ)-induced diabetes," investigators in Saskatoon, Canada report.

"Diabetes was induced in male Sprague-Dawley rats by intraperitoneal injection of 100 mg/kg STZ. Diabetic rats were then randomly divided into 3 groups and received a special diet supplemented with casein (control), low-isoflavone soy (LIS) protein, and high-isoflavone soy protein (HIS) for 8 weeks. Compared with the control or LIS groups, those rats on the HIS diet had significantly increased body weight and serum insulin levels and reduced serum glucose and methylglyoxal levels. Serum glutathione levels were also increased in rats given the HIS diet compared with those in the control or LIS ($P < .01$). Serum high-density lipoprotein cholesterol level was significantly higher in HIS-fed rats than that of the control or LIS rats ($P < .05$). More importantly, the death rate and incidence. of cataracts in the diabetic rats were markedly decreased in the HIS group," wrote M.P. Lu and colleagues, University of Saskatchewan, Medical Department.

The researchers concluded: "Ingestion of high-isoflavone soy protein not only lowers glucose levels but also reduces the incidence of cataracts in diabetic rats. The beneficial effects of soy isoflavones are attributed to increased insulin secretion, a better glycemic control, and antioxidant protection."

Lu and colleagues published their study in Nutrition Research (Dietary soy isoflavones increase insulin secretion and prevent the development of diabetic cataracts in streptozotocin-induced diabetic rats. Nutrition Research, 2008;28(7):464-471).

http://www.soyatech.com/news_story.php?id=10354