

# SNIPPETS

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Volume 15. Number 1. 2010  
013-075NPO

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## REVIEW OF 2009

Although there have been no food contamination incidents on the scale of 2008's melamine scandal in China, bisphenol A has certainly been a substance frequently in the news. 2009 also saw the Food Standards Agency maintain its stance on organic foods, and the European Food Safety Authority has taken a very robust approach to its task of assessing health claims. Meat eating has been blamed for everything from causing cancer to being instrumental in climate change, and while obesity is definitely still on the agenda of health authorities around the world, 2009 has seen more research being focussed on the effect of diet on cognitive function and mental health. Also, a very recent article in BBC Health News (18/12/09) featured the comments of several eminent nutritionists over the need to re-think health messages about diet and disease. *RSSL FOOD E-news*, 469: 16 - 23 December 2009

## CVD RISK OF STEARIC ACID COMPARED WITH TRANS AND OTHER FATTY ACIDS

Challenges to the food industry in replacing fats containing trans fatty acids are to develop formulation options that provide equivalent functionality, are economically feasible and do not greatly increase the saturated fatty acid content. This is view of J Edward Hunter from the University of Cincinnati and his colleagues Jun Zhang and Penny Kris-Etherton from Pennsylvania State University. In a systematic review they look at the cardiovascular disease (CVD) risk of dietary stearic acid compared to the risk from trans fatty acids and other saturated and unsaturated fatty acids.

For the full article:

[http://www.rssl.com/services/foodanalysis/FoodEnews/pages/Foode-newsedition.aspx?Category=Edition\\_468&a=1#364](http://www.rssl.com/services/foodanalysis/FoodEnews/pages/Foode-newsedition.aspx?Category=Edition_468&a=1#364)  
*RSSL Food Enews* 468: 09 - 16 December 2009

**50 MILLIONTH UNIQUE CHEMICAL SUBSTANCE RECORDED IN CAS REGISTRY**  
Chemical Abstracts Service (CAS), a division of the American Chemical Society, announced that on September 7, 2009 it recorded the 50 millionth substance in CAS REGISTRY<sup>SM</sup>, the world's most comprehensive and high-quality compendium of publicly disclosed chemical information. The recently registered substance is a novel arylmethylidene heterocycle with analgesic properties. Reaching the 50 million mark so quickly is an indicator of the accelerating pace of scientific knowledge. CAS

registered the 40 millionth substance just nine months ago - in contrast, it took 33 years for CAS to register the 10 millionth compound in 1990.

<http://www.cas.org/newsevents/releases/50millionth090809.html>

## IFST STATEMENT ON MYCOTOXINS

The Institute of Food Science and Technology (IFST) has just released an updated information statement on mycotoxins. The statement describes mycotoxins as toxins synthesised by filamentous fungi, which can form in foods during processing or enter the food chain by an indirect route, such as milk, from animals that have consumed mycotoxin-contaminated feed. Effective control is needed at every stage of the food chain and the statement suggests that developing economies are at particular risk of contamination due to climatic conditions.

[http://www.ifst.org/about\\_ifst/hotspot/29514/Updated\\_Mycotoxins\\_Information\\_Statement](http://www.ifst.org/about_ifst/hotspot/29514/Updated_Mycotoxins_Information_Statement)

## WITH CLIMATE CHANGE COMES WEEDS

Researchers at the U.S. Department of Agriculture's Agricultural Research Service (USDA ARS) are studying how global climate change could affect crop production and possibly prompt the evolution of more resilient weeds. Specifically, the scientists are looking as to how rising temperatures and rising carbon dioxide (CO<sub>2</sub>) levels could change production dynamics and crop yields.

Lewis Ziska and colleagues found that the growth of the genetically modified, glyphosate-resistant soybeans is promoted by high CO<sub>2</sub> levels. Elevated CO<sub>2</sub> levels also stimulate the growth of weeds that are typically kept in check by the herbicide glyphosate. Corn plant growth, on the other hand, was found to be suppressed by warmer temperatures resulting from high CO<sub>2</sub> levels. Other work by the scientists shows that cheatgrass and Canada thistle--which are both aggressive and invasive weeds, flourish when CO<sub>2</sub> levels rise, and that some varieties of dandelions have the genetic ability to adapt rapidly to rising CO<sub>2</sub> levels. The researchers concluded that the variability in dandelions and other weeds might provide genetic material that could be used to breed high-yielding, climate proof plants. *Crop Biotech Update* 27 November 2009.

## CHINESE FIRM ANNOUNCES APPROVAL OF TRANSGENIC PHYTASE-RICH CORN

Origin Agritech Ltd., a leading technology-focused supplier of crop seeds and agri-biotech research in China, says it has received the biosafety certificate from China's agriculture ministry as final commercial approval for the world's first transgenic phytase-rich corn variety, according to Genetic Engineering & Biotechnology News.

Phytase is currently used as an additive in animal feed to breakdown phytic acid in corn, which holds 60% of the phosphorus in corn. Phytase increases phosphorus absorption in animals by 60%. Phosphorus is an essential element for the growth and development of all animals, and plays a key role in skeletal structure and in vital metabolic pathways. Phytase, as an additive for animal feed, is mandatory in Europe, Southeast Asia,

South Korea, Japan, and other regions for environmental purposes. Phytase-rich transgenic corn, developed by and licensed from the Chinese Academy of Agricultural Science (CAAS) after seven years of study, will allow animal feed producers the ability to eliminate purchasing phytase and corn separately. It will eliminate the need for mixing the two ingredients together, saving time, machinery, and labor for the animal feed producers, the company says (see FCN March 17, 2008, Page 8). *IFIC International Update: Media Coverage for November 23, 2009*

#### IT'S ALL A MATTER OF TASTE

Effects of pH adjustment and sodium ions on the sour taste intensity of equimolar protonated organic acid solutions were determined. Sour taste intensity decreased with increasing pH for acetic, lactic, malic and citric acids, despite equal concentrations of protonated acid species. Sour taste suppression appeared to result from an additional inhibitory mechanism from organic acids. *FOOD SCIENCE CENTRAL UPDATE 172, 17th Nov. 2009*. More at: <http://www.foodsciencecentral.com/fsc/ixid15796>

#### COFFEE LINKED TO BREAST AND COLON CANCER

More research is necessary to explore links between a compound in coffee and breast and colon cancer, according to Texas AgriLife Research scientists. Dr Clinton Allred, AgriLife Research nutrition scientist, said that trigonelline has the ability to act like a hormone. "So there is a tie to cancer in the sense that we are looking at estrogen-dependent (breast) cancer cells. But that doesn't suggest that it would actually cause the disease. I don't believe there should be any concern about drinking coffee at this point," said Allred.

Allred's report, published in the *Journal of Nutrition*, focuses on dietary compounds that can mimic the hormone estradiol – a primary hormone in women. His studies have examined how estrogen protects against the development of colon cancer.

Kathleen Philips, a spokesperson for Texas AgriLife Research, told *NutraIngredients.com*: "If the compound could be extracted and directed towards the colon tumor, it could be a new way to target this form of cancer." *NUTRAingredients-USA.com 13 Nov. 2009*

#### BIOETHANOL'S IMPACT ON WATER SUPPLY THREE TIMES HIGHER THAN ONCE THOUGHT

At a time when water supplies are scarce in many areas of the United States, scientists in Minnesota are reporting that production of bioethanol — often regarded as the clean-burning energy source of the future — may consume up to three times more water than previously thought.

The scientists made a new estimate of bioethanol's impact on the water supply using detailed irrigation data from 41 states. They found that bioethanol's water requirements can be as high as 861 billion gallons of water from the corn field to the fuel pump in 2007. And a gallon of ethanol may require up to over 2,100 gallons of water from farm to fuel pump, depending on the regional irrigation practice in growing corn.

However, a dozen states in the Corn Belt consume less than 100 gallons of water per gallon of ethanol, making them better suited for ethanol production. "The results highlight the need to take regional specifics into account when implementing biofuel mandates," the article notes. *ScienceDaily (Apr. 13, 2009)*

#### NUMBER OF AMERICANS ON FOOD STAMPS SETS NEW RECORD

According to Reuters, the number of Americans receiving food stamp assistance soared above 36 million for the first time in August, the eighth month in a row that enrollment set a record, the U.S. Dept. of Agriculture (USDA) said on Nov. 5. The USDA said about 36.5 million people were receiving food stamps, also known as the Supplemental Nutrition Assistance Program. In July, enrollment stood at about 35.9 million. At the current rate, an estimated one in eight Americans receives benefits. The program has seen enrollment jump by 4.7 million during 2009 amid a lingering economic downturn in the U.S. Participation grew by 2 million people from May to August. In the latest data, the average person received \$132.99 in August 2009, compared with \$101.31 in August 2008. *IFT Weekly E-news 11 Nov. 2009*

#### ANTI-CANCER PROPERTIES OF SHOGAOLS FROM GINGER OIL

Although ginger has been cultivated as a medicine and spice for thousands of years the nature of the active components in ginger has not been fully explored. The gingerols have generally been assumed to be responsible for the antioxidative, anti-inflammatory and anti-tumorigenic properties of ginger, despite their instability during processing and storage. A new study reported in the *Journal of Agricultural and Food Chemistry* by a multinational team has investigated the possible role of shogaols in providing these beneficial effects.

The shogaols are the dehydration products of the corresponding gingerols, formed during thermal treatment or storage. They are the predominant pungent constituents in the oleoresin from dried ginger. A number of studies cited by Sang et al. have shown that [6]-shogaol suppressed the expression of inducible nitric oxide synthase and COX-2 enzymes in lipopolysaccharide (LPS)-induced macrophages, while [6]- and [10]-shogaol inhibited the growth of HL-60 human leukaemia cells, and [6]-shogaol inhibited the growth of both colon cancer and ovarian cancer cells. *RSSL Food e-News. Edition 462: 28 October – 04 November 2009*

#### HIGHER DAIRY PRODUCT INTAKE CAN HELP FIGHT OBESITY

Although dairy products are widely perceived as being high in fat, they are also high in protein and can readily produce a feeling of fullness. A higher intake of dairy products while on a reduced calorie diet can help fight obesity, according to new research from Curtin University of Technology in Western Australia. Emerging evidence indicates that dietary calcium has a potential role in the regulation of body weight, particularly if calcium is derived from dairy sources. Benefits include greater weight loss and significant improvements in the risk factors for cardiovascular disease and diabetes.

For the full article:

[http://www.rssl.com/services/foodanalysis/FoodEnews/pages/Foode-newsedition.aspx?Category=Edition\\_461&a=1#293](http://www.rssl.com/services/foodanalysis/FoodEnews/pages/Foode-newsedition.aspx?Category=Edition_461&a=1#293)  
*RSSL Food e-news: Edition 461: 21 - 28 October 2009*

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