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SNIPPETS

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Congratulations to Dr. Gerda Lombard (Chairman of the Northern Branch) who has been awarded a PhD from the University College Cork for a thesis: Engineering Process Design of Combined Osmotic and Microwave Assisted Hot Air Drying of Pineapple.

ROYAL SOCIETY FOR CHEMISTRY REPORT ON FOOD SECURITY

The world faces a food crisis caused by climate change and competing land and energy demands, due to population growth and rising prosperity.

Chemical science and engineering will provide sustainable ways to match increasing demands for food with limited natural resources, enabling a reduction in environmental strain throughout the food supply chain.

Scientific literacy is required at the highest levels of the food industry and amongst food policy makers. This will be necessary for promising technical solutions to be recognised by those with the power to initiate change.

A skilled workforce must be supplied by forging closer links between food sector industries and universities. Graduates must be made aware of the breadth of opportunities available and possess the skills mix to deliver sustainable solutions.

Scientific leadership should come from the learned societies working together to provide common guidance, encouraging interdisciplinary research through facilitating dialogue, and promoting informed and balanced debate.

Government must recognise that limited natural resources and a profitable food industry are driving forces for investment in science and technology which will provide solutions for the sustainable production of nutritious food.

Regulations must be based on risk, accounting for both hazard and exposure. Substances cannot be banned on the basis of intrinsic hazard alone but on the likelihood that they will cause actual harm when used.

Industry must become more entrepreneurial to harness and develop new scientific technologies and operating procedures that will minimise waste and resource use whilst improving food quality, production and sustainability.

http://www.rsc.org/images/FoodReport_tcm18-142397.pdf
RSSL Food E-news No. 423 – 28 Jan 08.

PROBIOTIC BACTERIA'S IMMUNE ENHANCING MECHANISM REPORTED

A potential immune-enhancing effect from probiotic bacteria has been reported by many scientific groups, but the mechanism by how these effects may be occurring has not been elucidated, according to the Dutch researchers behind the new study.

The scientists, led by Professor Michiel Kleerebezem of NIZO Food Research, identified patterns of gene expressions in the cells of the intestinal wall that may trigger mechanism for immune tolerance. The study is claimed to be the first scientific evidence of how probiotics influence the immune system in humans. The findings are published online in the Proceedings of the National Academy of Sciences (PNAS Online Early Edition). "Striking differences" in pathways dependent on a protein complex called nuclear factor kappa B (NF-kB) were observed. NF-kB plays an important role in the regulation of the immune system's response to infection.
Nutraingredients.com 5 Feb. 2009.

PACKAGING CHEMICAL MAY HINDER FERTILITY

A US study has found that perfluorinated chemicals (PFCs), which are used in areas such as food packaging, pesticides, clothing, carpets and personal care products, may be linked to infertility in women.

The University of California Los Angeles (UCLA) study of 1,240 women has found that those with higher levels of PFCs in their bloodstreams tend to take longer to become pregnant than those with lower levels.

The findings were published in the journal Human Reproduction 29-Jan-2009.

PFCs are found in grease-resistant packaging such as microwave popcorn bags and pizza boxes; they are also used in manufacturing processes, for instance for industrial surfactants and emulsifiers.

STUDY FINDS HIGH-FRUCTOSE CORN SYRUP CONTAINS MERCURY

Almost half of tested samples of commercial high-fructose corn syrup (HFCS) contained mercury, which was also found in nearly a third of 55 popular brand-name food and beverage products where HFCS is the first- or second-highest labeled ingredient, according to two new U.S. studies.

HFCS has replaced sugar as the sweetener in many beverages and foods such as breads, cereals, breakfast bars, lunch meats, yogurts, soups and condiments. On average, Americans consume about 12 teaspoons per day of HFCS, but teens and other high consumers can take in 80 percent more HFCS than average.

The use of mercury-contaminated caustic soda in the production of HFCS is common. The contamination occurs when mercury cells are used to produce caustic soda.
The bad news is that nobody knows whether or not their soda or snack food contains HFCS made from ingredients like caustic soda contaminated with mercury. The good news is that mercury-free HFCS ingredients exist. Food companies just need a good push to only use those ingredients. *MONDAY, Jan. 26 (HealthDay News) – IFIC International Update 28 Jan 2009*

MORE FOOD FRAUD EXPECTED AS PRICES RISE

Counterfeiting is a major problem in the global food and drink industry with the level of fraud estimated at around $50bn a year, an audience at the American Association for the Advancement of Science (AAAS) annual meeting heard recently.
Worldwide trade in fake foods not only costs processors in terms of damage to brands, but also means companies have to spend more on security measures, such as holograms on packaging.
John Spink, director of the Packaging for Food and Product Protection (P-FAPP) initiative at Michigan State University said that trade in counterfeit goods is likely to increase as food prices rise.
He said that while counterfeiters are seeking not to harm but to hide the act for profit, there is a public health risk associated with food fraud as in the case of milk and pet food adulterated with melamine causing deaths and kidney problems for children, and catfish containing banned antibiotics.
Other recent examples of food and beverage fraud, continued Spink, include conventionally grown vegetables sold as organic, fish sold as a more premium species, and canned energy drinks of unknown origin labelled with brand names.
According to a 2007 report from the Organisation for Economic Co-operation and Development (OECD), fruit such as kiwis, conserved vegetables, milk powder, butter, ghee, baby food, instant coffee, alcohol, drinks, confectionary, and hi-breed corn seeds are some of the most faked food and drink items. *Nutraingredients.com 17 Feb. 2009.*

CAMPAIGN GIVES TIPS ON REDUCING FAT

Switching to lower fat milk and grating cheese instead of slicing it could cut your risk of dying from heart disease, the Food Standards Agency (FSA) has said.
Tim Smith, chief executive of the FSA, said:
"What we really want is small changes in everybody's behaviour. It's important to find ways to cut down, not give up.
"We need to eat leaner meat and a bit less cheese, switch to lower fat milks and eat healthier snacks, cutting down on cakes and biscuits.
"I learned to cut down cheese by grating it or using stronger flavour and I have cut down to 1% milk rather than semi-skimmed."
Mr Smith said semi-skimmed milk - which is around 1.55% fat - has grown in popularity from only 5% of sales 20 years ago to 60% today but said people could trim their fat intake further by swapping to milk which is 1% fat. *FOOD SCIENCE CENTRAL UPDATE 152, 10 February 2009*

ENGINEERING THE PHOTOSYNTHETIC PATHWAY FOR MORE EFFICIENT RICE PLANTS

The International Rice Research Institute (IRRI), along with a global consortium of researchers, has undertaken the mammoth task of re-engineering the photosynthetic pathway in rice. The research could lead to the development of rice varieties that can produce 50 percent more grain using less fertilizer and less water. For this project, the Institute has received a grant of US$11 million from the Bill & Melinda Gates Foundation. "This is a long-term, complex project that will take a decade or more to complete," explained John Sheehy, IRRI scientist and project leader. "The result of this strategic research has the potential to benefit billions of poor people."
Plants make their own food by capturing carbon dioxide and converting it to carbohydrates, a process called photosynthesis. Some plants manufacture food more efficiently than others. Normally, these carbon-efficient plant species possess the advanced C4 carbon fixation pathway. The C4 mechanism overcomes the tendency of RuBisCo, the key enzyme in photosynthesis, to waste energy. The pathway allows plants to survive under conditions of drought and high temperatures and carbon dioxide and nitrogen limitation. Sheehy and colleagues aims to convert the photosynthesis of rice from the less-efficient C3 form to the C4 form. *CropBiotech Update 16 January 2009* The media release is available at http://beta.irri.org/news/index.php/Press-Releases/2009/New-higher-yielding-rice-plant-could-ease-threat-of-hunger-for-poor.html

REVIEW ON NON-NUTRITIVE SWEETENERS, EFFECT ON APPETITE AND FOOD INTAKE

A review by Richard D Mattes and Barry M Popkins published in the American Journal of Clinical Nutrition concludes that overall evidence suggests that if NNS are used as substitutes for higher energy yielding sweeteners, they have the potential to aid in weight management. The authors point out that the addition of NNS to diets poses no benefit for weight loss or reduced weight gain without energy restriction. *RSSL Food e-news 420 – 7 to 14/1/09*

Snippets - contributions are welcome. Edited and produced by Dr. B Cole. – drcole@cybersmart.co.za / Fx 011 660 6444 with the help of the Northern Branch Committee.