



Organic Food Quality & Health

Organic Food Quality News

This 'monthly' newsletter, edited by nutritionist and independent organic researcher Shane Heaton, is provided by the FQH association to keep researchers, the industry and other interested parties abreast of the latest news in organic food quality, research, health, diet and other relevant issues. Thank you to those who've completed the feedback questionnaire. If you haven't, please visit www.organicfqhresearch.org for a copy. Comments and contributions are welcome, or if you find an item of news that you think should be included, please email shane@freshorganics.com.au

Quote of the month:

“The bitterness of poor quality lingers longer than the sweetness of a cheap price” *Anon*

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1. PESTICIDES

Australia: are pesticides like a fart in the universe?

By Shane Heaton

I recently received an email from a senior employee for an agrochemical company, who asserted: "Our contract analytical chemist, who does our residue work, has an apt description about the concern over the absolutely minute quantities that can be detected today -"it's like worrying about a fart in the universe".

I thought I'd share my response with you...

"Given the volume of the average fart and the expanding enormity of the universe, the concentrations of toxins in our environment, food, umbilical cords, breast milk, etc... are a trillion trillion trillion trillion billion times greater than a fart in the universe. I'd think it's more like a fart in a sports stadium. Still doesn't seem much to worry about, but think of it this way. You're lining up to buy your ticket outside the game and the person in front of you farts. In the elevator up to the concourse someone in there farts too. The person sitting beside you in the stands farts. When you go to buy your lunch at half time someone farts. You sit down to eat it and someone farts. You return to your seat to try to enjoy the game and SIX people around you all fart at the same time! Pesticides and other toxins in our environment are just like this - constant affronts to your senses and invasions of your biological privacy, where no-one seems to want to take responsibility. It stinks. (Or when they do own up they actually think it smells good!)

What the organic industry around the world tries to do is offer a sustainable alternative, with fewer pollutants going into the environment, and fewer pesticides in our food. The message is simple: yes, in your lifetime you'll probably be exposed to many hundreds of chemicals at low doses that may do you no harm but may just accumulate or interact in such a way that they compromise your health (rising cancer incidence may be our best indicator that this is already happening). So what to do? Your diet offers an enormous opportunity to minimise your avoidable exposure. Go organic. Eat organic food and support organic producers who are trying to do the right thing.

In 1995 a study in Australia found that breastfeeding infants were exposed to greater than the ADI for 5 different pollutants in their mothers' breastmilk. A follow up study just this year found that the area with the highest concentrations of pollutants in breast milk back then, also has the highest incidence of breast cancer now. These findings cannot be easily dismissed with fart in universe jokes. In 1998 anthropologist Elizabeth Guillette compared the motor and cognitive skills of Mexican children in two remote mountain villages, where one village used pesticides while the other did not. The children in the pesticide-using village were characterised by poorer short-term memory, poorer ability to catch a ball, poorer ability to draw a person (a standard paediatric assessment). Conventional farmers with occupational exposures have a demonstrably greater risk of prostate cancer. There's much, much more out there once you start looking."

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2. ADDITIVES

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3. ANTIBIOTICS/FOOD SAFETY

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4. GMOs

Russia: Genetically modified soy affects posterity

During the Russian symposium over genetic modification, organized by the National Association for Genetic Security (NAGS), Doctor of Biology Irina Ermakova made public the results of the research led by her at the Institute of Higher Nervous Activity and Neurophysiology of the Russian Academy of Sciences (RAS). This is the first research that determined clear dependence between eating genetically modified soy and the posterity of living creatures. During the experiment, doctor Ermakova added GM soy flour to the food of female rats two weeks before conception, during conception and nursing. In the control group were the rat females that were not added anything to their food. The experiment was formed by 3 groups of 3 female rats in each: the first one was control group, the second one was the group with GM-soy addition, and the third one with traditional soy addition. The scientists counted the number of female species to give birth and the number of born and died rats.

After the result of the first stage, the second part took place. Now the rats were divided into two groups – one with GM-soy addition in their food, and other without the GM-soy. In three weeks the scientists received following results:

	Control group	With GM soy	With normal soy
Female that gave birth	4 (of 6)	4 (of 6)	3 (of 3)
Born rats	44	45	33
Dead rats (in three weeks)	3	25	3
Percent of dead rats	6.8%	55.6%	9%
Rats still alive	41	20	30

Thus, according to these results, the abnormally high level of posterity death has been detected at the posterity of the female species with GM-soy added to their food. And 36% percent of born rats weighed less than 20 grams that is an evidence of their extremely weak condition. "The morphology and biochemical structures of rats are very similar to those of humans, and this makes the results we obtained very disturbing," said Irina Ermakova to NAGS press office. According to NAGS Vice-president Aleksey Kulikov, the data received by Dr.Ermakova confirm the necessity of full scale tests of GM-products influence over living creatures.

UK: GM contamination distances studied

GM crops can contaminate significant numbers of plants up to 50 yards away, UK Government research has revealed. The latest results come from the four-year long Farm- Scale Evaluation Trials, funded by Defra, which have now finished. For a type of winter oil seed rape known as varietal association, they found that 77 plants per 10,000 were contaminated at 50 metres (54

yards). For the spring version of the same type of oil seed rape contamination reached 37 per 10,000 plants. Previous research has shown that GM seed can travel well beyond 50 metres with some even found as far as 16 miles away. But this is understood to be the first time that precise levels of contamination at this distance have been studied. (Daily Mail - 26 Oct)

Switzerland: 5 year GM moratorium

Swiss voters have approved a five-year ban on the use of genetically modified crops, partial results from Sunday's referendum suggest. Results from most of the country's 26 cantons show that more than 55% have voted in favour of the moratorium. Supporters of the ban include farmers, who believe that the introduction of GM crops would undermine organic produce. (BBC news online - <http://news.bbc.co.uk/1/hi/world/europe/4475044.stm> – 27 Nov)

Australia: GM peas make mice ill

A decade-long project to develop genetically modified peas with built-in pest-resistance has been abandoned after tests showed they caused allergic lung damage in mice. The researchers - at Australia's national research organisation, CSIRO - took the gene for a protein capable of killing pea weevil pests from the common bean and transferred it into the pea. When extracted from the bean, this protein does not cause an allergic reaction in mice or people. But the team found that when the protein is expressed in the pea, its structure is subtly different to the original in the bean. They think this structural change could be to blame for the unexpected immune effects seen in mice. The work underlines the need to evaluate new GM crops on a case-by-case basis, says Paul Foster of the Australian National University in Canberra, who led the immunological work. He also calls for improvements in screening requirements for genetically engineered plants, to ensure comprehensive tests are carried out. Jeremy Tager, Greenpeace Australia's campaigner on genetic engineering, agrees. "These results indicate the potential for unpredicted and unintended changes in the structure of transferred proteins. And I'm not aware of any country that requires feeding studies as part of its approval process."

Field peas (*Pisum sativum*) are susceptible to the pea weevil *Bruchus pisorum*, which lays its eggs on the pea pods. The weevil frequently devastates crops not only in Australia but across the developing world. The common bean (*Phaseolus vulgaris*) contains alpha-amylase inhibitor-1, a protein that inhibits the activity of alpha-amylase, an enzyme that is used by pea weevils to help them digest starch. CSIRO Plant Industry researchers hoped the developing weevils would starve after eating the protein, before they could cause any real damage to the crop. Trials showed that the GM peas were almost completely resistant to the pea weevils. Foster and his team then used mice to investigate whether eating the GM peas might have any undesirable immune impact. Generally, digested proteins do not create a specific immune system response. But researchers found that mice that ate transgenic pea seed did develop antibodies specific to the protein. Some of these mice were later exposed to the purified protein, either through injection into the blood, or by putting the protein into their airways. This approach is a standard "multiple immune challenge" procedure and is designed to determine if the immune system is tolerant to a protein. The injected mice showed a hypersensitive skin response, while the airway-exposed mice developed airway inflammation and mild lung damage. The effect was the same whether the protein was taken from raw or cooked peas - so whether the protein was active or denatured. "To my knowledge, this is the first description of inducing experimental inflammation in mice" with a GM food, Foster says. In the early 1990s, researchers engineered a more nutritious strain of soya bean by adding a gene taken from brazil nuts. But the project ended when it was discovered that the hybrid was likely to trigger a major attack in people with brazil nut allergies.

Further investigations by Foster's team revealed slight differences in the molecular structure of the protein when it was expressed in the bean and in the pea. They think this was caused by differences in the way the two plants produce proteins - particularly in a step called glycosylation, which involves adding saccharides to the protein. "When expressed in the pea, the protein was glycosylated at different points - that's the only structural change we've been able to identify so far," says Foster. He adds that slight differences in protein synthesis might also occur in other plants with other genes, meaning each new GM food should be very carefully evaluated for potential health effects. "If a GM plant is to go up for human consumption, there should be a detailed descriptive list of how one should go about analysing that plant," he says. Tager agrees. It is rare for an investigation of the potential health effects of a GM product to be published in a peer-reviewed journal, he adds. "If it had been a private company doing this, it might never have seen the light of day," he says.

Journal reference: Journal of Agricultural and Food Chemistry (vol 53, p 9023)

NewScientist.com news service 21 November 2005 Emma Young, Sydney

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5. BSE

UK: CJD deaths in decline

An analysis of deaths caused by the human form of BSE has provided further evidence that the epidemic has passed its peak. Since May 1990, 153 cases of definite or probable variant CJD have been identified in the UK. The latest annual report from the National CJD Surveillance Unit in Edinburgh showed that 148 people had died from the disease up to the end of December 2004. (The Independent - 8 Nov)

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6. NUTRIENT CONTENT

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7. HEALTH & DIET

NZ: Junk food legislation likely

New Zealand will finally tackle one of the most important health issues of our time - getting junk food out of schools and improving the nutrition and health of the next generation, Green Party Health Spokesperson Sue Kedgley says. The Greens have secured an agreement to work with the government on a range of initiatives to improve New Zealand's nutrition and food environment. They will be fully involved in developing policy and legislation in these areas, and the government has agreed to allocate funding. The proposals include a Nutrition Fund to pay for initiatives aimed at creating a healthy eating environment, developing healthy eating policy and guidelines for schools, a traffic light labelling system to enable consumers to quickly identify

healthy food, publishing an annual Children's Food Promotion plan that sets out how the Health Ministry intends to develop an environment that encourages children to make healthy eating choices.

"The initiatives aim to encourage healthy eating and protect children from the overwhelming commercial pressures on them to eat unhealthy food. With one third of our children overweight or obese we are facing an inevitable public health crisis unless we take decisive action. We are not prepared to sit back and watch the health of our children being undermined when we have the opportunity to make simple changes with enormous long-term benefits. "If we are serious about trying to improve the health of New Zealanders, we need to start by improving the our children's diet. Getting junk food and vending machines out of schools will be a priority, along with labelling to make it easier for parents to buy healthier food for children.

"We also want to develop criteria to distinguish food and drinks that are considered to be nutritious and which would be recommended as a routine part of a children's diet, from foods which are of low nutritional value, and to develop recommended daily intakes for children for fat, saturated fat, sugar, salt and key nutrients. "We are seeking an expanded Nutrition section within the Health Ministry to carry out these initiatives," Ms Kedgley said. At present there are only four full-time staff within the Ministry working on nutrition. This is woefully inadequate when you consider that poor nutrition is the leading cause of preventable death and disease in New Zealand, accounting for 30 percent of premature deaths every year.

US: FDA Approves Qualified Health Claim for Tomatoes

H.J. Heinz, the world's largest producer of processed tomato products has applauded the U.S. Food and Drug Administration (FDA) for granting approval for the use of a Qualified Health Claim for raw, cooked, dried or canned tomatoes. The request for a Qualified Health Claim was submitted because of the growing body of scientific evidence that the consumption of tomato products may reduce the risk of prostate cancer, the second-leading cause of cancer-related deaths for adult males in the United States. The petition was submitted by an H.J. Heinz Company-led consortium of the principal processed tomato organizations and a major health advocacy foundation. "We're delighted with the FDA's announcement, reinforcing what Heinz has long believed about the health benefits of tomatoes," said F. Kerr Dow, Ph.D., vice president and chief technical officer for Heinz. "It validates Heinz's long-term support of tomato research and our ongoing education program. As the FDA confirmed, research findings are still limited and scientific studies must continue on tomatoes and their link to preventing disease and enhancing well-being." Dr. Dow noted: "Based on health claim guidance provided by the FDA, the risk of prostate cancer may be reduced by eating just 1/2 to 1 cup of tomatoes and /or tomato sauce - such as a single serving of pasta sauce - per week."

The nearly 1,700-page proposal was developed in collaboration with the Center for Food, Nutrition and Agriculture Policy (CFNAP) at University of Maryland - College Park (formerly known as the Center for Food and Nutrition Policy at Virginia Tech). CFNAP created an extensive, third-party review panel to evaluate the large volume of scientific literature, including more than 42 core studies. CFNAP evaluated the strength of numerous research findings related to the health benefits of tomato products. "The new 2005 Dietary Guidelines encourage Americans to eat five to nine servings of fruits and vegetables a day. Approval of this Qualified Health Claim allows Heinz and others to further educate consumers about the health benefits of eating tomatoes and tomato products," said Maureen Storey, Ph.D., director of CFNAP. "The Qualified Health Claim gives consumers another important piece of information when they are trying to include more fruits and vegetables in their diets." Participating in the petition also provided a significant opportunity to further the Prostate Cancer Foundation's mission to

promote research, better treatments and dietary approaches for preventing and treating prostate cancer. "Prostate cancer attacks more than 230,000 men each year in the U.S., and claims more than 30,000 lives. This FDA decision will help educate the general public about the potential health benefits of tomatoes," said Leslie D. Michelson, CEO of the Prostate Cancer Foundation.

"Both fresh and processed tomatoes are treasures of nutrients, with processed tomatoes having higher levels of nutrients simply because the vegetable is concentrated," explained Ida Laquatra, Ph.D., R.D., director of nutrition for Heinz. "In the American diet, tomatoes and tomato products are among the top food sources of Vitamins C, A and E; potassium; and fiber. Plus, tomatoes are an excellent source of other phytochemicals, including the powerful antioxidant lycopene. These nutrients work in combination to offer health benefits which we are just now beginning to understand."

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8. RESEARCH

US: First International Conference on Environmental Exposure and Health

Atlanta, USA: 5 - 7 October 2005

The First International Conference on Environmental Exposure and Health was held in Atlanta in October, organised by Georgia Tech and the Wessex Institute of Technology (WIT). The Conference Co-chairmen were Professor Mustafa Aral from Georgia Tech; Professor Carlos A. Brebbia from WIT; Dr Morris Maslia of the Centre for Disease Control (CDC); and Dr Thomas Sinks, Acting Director of the National Centre for Environmental Health of the CDC.

The conference brought together scientists from many different institutions, ranging from health specialists to social and physical scientists, along with engineers. They evaluated the current issues in exposure and epidemiology and chartered further directions and needs in the field.

Among many of the topics covered were the following important presentations:

- Modern Problems posed by occupational health in the 21st Century

- Modeling personal and population exposures to environmental chemicals

- Development of cost-effective statistical sampling strategies and optimal design considerations for exposure assessment as part of the National Childrens Study

- Exposure assessment concepts and considerations for community health studies

- Role of bio-monitoring in exposure and community human health studies

- Measurement of exposures to air pollutants, metals and pesticides

- Stochastic air quality analysis

- Reconstructing historical contamination events: use of computational tools to assist environmental engineers and health scientists

The post conference report is at <http://www.wessex.ac.uk/conferences/2005/eeh05/>

Denmark: Organic pigs are healthier

A comparison of the prevalence of disease in organic and conventional fattening pigs reveals that organic pigs have a 30% lower prevalence of disease than conventionally reared pigs.

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These results are part of the data material resulting from the project "Health and medicine use in organic pig herds". Investigations at the Danish Institute of Agricultural Sciences show that the prevalence of respiratory disease is 12% in organic pig herds compared with 29% in conventional herds, and the prevalence of gastrointestinal disease is also lower for organic pigs. Parasitic worms are, on the other hand, a considerable problem in organic fattening pigs. Ten times as many worm nodules were found in livers of organic fattening pigs as in conventional pigs. The worm nodules are an indication that the pigs suffer from gastrointestinal worms.

The data material supporting the results is considerable. In 2004 data were collected from the Danish Veterinary and Food Administration who undertook the veterinary inspection of all the pigs delivered for slaughter from 16 organic farms (21,516 pigs) and 49 conventional farms (202,795 pigs). The results are based on routine meat inspections where acute and chronic pathological changes present at the time of slaughter are registered. On the data set a total of 91,439 comments were made on the diseases found, of which 6,591 related to organic herds and 84,848 to conventional herds. The comments have been divided into eight categories (Tables 1 and 2). The differences in the frequency of respiratory diseases, gastrointestinal diseases and worm nodules are statistically valid.

The research project is financed by the Organic Farming Fund, Svineafgiftsfonden and the Danish Institute of Agricultural Sciences.

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9. PROMOTION

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10. POLITICS

US: USDA Secretary asked to clean up organic mess

"Emediawire (press release) - Ferndale, WA, USA

A letter to USDA Secretary Mike Johannes, from one of the nation's most aggressive organic food and farming watchdogs, asked the Secretary to personally intervene in rebuilding the once promising collaborative environment that existed between the organic community and its regulators. In its letter, the Cornucopia Institute, a Wisconsin-based farm policy research group, called the current working relationship between the USDA's National Organic Program (NOP) and industry stakeholders, farmers, consumers, and processors very unhealthy.

The Cornucopia Institute's letter comes on the heels of two highly critical reviews of the USDA's oversight of the organic program that were conducted by the American National Standards Institute (ANSI) and the Department's own Office of the Inspector General. Both audits strongly criticized management and called for widespread changes in policies and operations. Unfortunately, a series of managers at the NOP have performed poorly and acted arrogantly, destroying the goodwill that had existed between the Department and stakeholders, organic

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farmers, consumers, marketers, and processors, said Mark Kastel, Senior Farm Policy Analyst at the Institute.

The Institutes letter, supported by many other farm and consumer groups, specifically requested that the Secretary, in addition to appointing a new organic program manager, open the pending appointment process for new members to the National Organic Standards Board (NOSB), a unique public advisory body that has statutory authority to review the USDAs organic program. And finally, the USDA was asked to mediate a broiling dispute between the Department and the organic dairy industry, which has overwhelmingly backed eliminating loopholes that have permitted factory-style industrial dairy farms to market their milk as organic without allowing their animals to graze on pasture.

A copy of the letter sent to USDA Secretary Johannes is available on The Cornucopia Institute's website at www.cornucopia.org "

<http://www.emediawire.com/releases/2005/9/emw282981.htm>

IFOAM: Certification and Accreditation an “obstacle to growth”

IFOAM has commented on its website that, The growth of organic agriculture and markets during the last decade has been accompanied by a rapid growth in the number and complexity of private sector standards followed by the burgeoning of government organic regulations. Though the purpose of certification was to foster confidence of buyers and enhance trade, the plethora of certification requirements and regulations is now considered to be an obstacle for the continuous and rapid development of the organic sector.

For example, there are virtually no mutual equivalence agreements between countries on organic standards. Efforts to establish equivalence among the many regulatory systems have been led by IFOAM together with FAO, the International Trade Centre of the United Nations Conference on Trade and Development, the European Union. There is consensus about standards on major issues such as the clear exclusion of GMOs though debate continues on others, such as the use of food additives and processing aids.

As the national governments in Europe and North America institutionalise certification and also become involved as accrediting organizations, they may become gatekeepers controlling access to these largest markets. It also increases the cost and complexity of certification to the point that small- scale farmers may be excluded."

extract from <http://www.i-sis.org.uk/OBAW.php>

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