



Organic Food Quality & Health

Organic Food Quality News

MARCH 2004

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. Comments and contributions are welcome, or if you find an item of news that you think should be included, please email shane@dontjustsurvive.com

Quote of the month:

"The organic market remains a growth market and a market of the future both nationally and internationally" German Consumer Minister Renate Künast in her opening speech at The World Organic Trade Fair, BioFach, in Nuremberg on 19 February

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1. PESTICIDES

Canada: US & Australia delay eliminating methyl bromide

OTTAWA - The United States, Australia and other major powers last week agreed to delay the implementation of a deal to stop using a pesticide which is known to destroy the ozone layer, officials said. Methyl bromide, a fumigant that kills soil and food pests, is due to be phased out by developed nations by January 1, 2005, under the 1987 Montreal Protocol to protect the atmosphere. But delegates at a U.N.-sponsored conference in Montreal agreed that the United States, Australia and 9 other developed nations - which say they have yet to find a viable alternative - would be given exemptions allowing them to use the fumigant at least until the end of 2005. "The high demand for exemptions to the methyl bromide phaseout shows that governments and the private sector will have to work much harder to speed up the development and spread of ozone-friendly replacements," United Nations Environment Program director Klaus Toepfer said in a statement. U.S. growers say they are concerned about a rule in the protocol that allows developing nations an extra 10 years, until 2015, before they have to phase out use of the pesticide. The United States, the European Union and Japan have cut the use of newly produced methyl bromide to 30 percent of 1991 levels. Overall U.S. use is closer to 35 percent because farmers are utilizing stockpiles of the fumigant.

Friday's deal was reached after the United States backed down from initial demands for a three-year deal which would have increased its use of the chemical to 37 percent of 1991 levels over the next two years and by an unspecified level in the year after that. "We're disappointed we didn't get a deal over three years," said Claudia McMurray, the chief U.S. negotiator at the talks. "The idea (of an increase to 37 percent) is not dead by any means," she told Reuters, saying U.N. officials would discuss the request later this year. The 1987 Montreal Protocol requires more than 180 signatory states to phase out the use of nearly 100 chemicals that damage the ozone layer, the part of the atmosphere that protects the Earth from ultraviolet radiation. David Doniger, policy director at the U.S.-based advocacy group Natural Resources Defense Council, said Friday's agreement was at best neutral.

David Ljunggren/Planet Ark29/3/2004

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2. ADDITIVES

UK: FSA Working Party on Food Additives publishes annual review

The Food Standards Agency's Working Party on Food Additives (WPFA) has published a review of the agency's research into food additives during the year 2003. The WPFA's Annual Review 2003, published in booklet form in February 2004 and on the agency's website, contains papers summarising the background to and progress of current research on food additives. The agenda and minutes of the May and October 2003 WPFA meetings and a summary of the agency's current research programme on food additives are also included. The agency carries out carefully-focussed research into food additives to ensure that their use does not prejudice food safety. The WPFA provides independent guidance and information on what research is required and how it should be carried out. The review is available at www.food.gov.uk/multimedia/pdfs/additivesresearchreview.pdf or by emailing kenneth.blacklock@foodstandards.gsi.gov.uk

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UK: Food market awash with illegal red dye

The roll call of food products contaminated by the harmful illegal red dye Sudan I continues with the UK's food watchdog finding the potential carcinogen in two product lines on sale in the country. The list of illegal products keeps on growing as investigations carried out by the Food Standards Agency reveal a seemingly never-ending list of food batches illegally present on the supermarket shelves. Consumers are warned this week that a range of spice products distributed by Sita Spices have been recalled as well as batches of Natco brand Tandoori Masala spice mix, the latter follows earlier warnings about certain batches of this same mix in October last year.

The recall comes one month after a European clampdown that saw Brussels declaring an emergency measure extending rules on the illegal carcinogenic red chemical dyes, to include curry powder. Effective immediately, the rule extends the paper trail for ingredients, requiring that imports of chilli and chilli products - including curry powder – can only cross the EU border with proof they are free of the illegal chemical dyes -Sudan I, Sudan II, Sudan III or Scarlet Red (Sudan IV). The rulings extended tight measures already in place since June 2003 when France initially alerted the European Commission to traces of Sudan 1 found in chilli and chilli powder. That the rules now include curry powder, found extensively in European food products, means more paperwork and potentially a surge in product recalls for the food industry. The issue started in May 2003 with the discovery of the illegal Sudan 1 in chilli and chilli products, since then, via feedback through Europe's Rapid Alert System, the Commission has identified more related substances.

In the UK alone the food industry has recalled for destruction more than 160 products – ranging from pesto sauce to chicken tikka masala – from the supermarket shelves since July 2003 and enforcement of the new measures. From now on, chilli and chilli products including curry powder can only be imported into the EU if they are accompanied by an analytical report which shows that they do not contain Sudan I, Sudan II, Sudan III or Scarlet Red (Sudan IV) - classified as carcinogens by the International Agency for Research on Cancer. Random checks will also be carried out on chilli and curry products already on the market, said the Commission last month. Maximising the communication flow between EU Member States, Brussels added that if any Sudan dye is discovered in products already on sale in the EU or in consignments rejected at EU borders, the Member States will continue to use the Rapid Alert System food and feed. Due for review in January 2005, the emergency rules could well be extended if new findings come to light. (23/02/2004 foodnavigator.com)

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3. ANTIBIOTICS

UK: Salmonella slashed by egg industry

The UK egg industry received a pat on the back from the country's food watchdog following a survey that found salmonella levels in UK-produced eggs have fallen by two thirds since 1996. The survey of 28,518 retail-sold eggs found that just one in every 290 boxes of six eggs on sale has any salmonella contamination, compared with 1 in 100 in a

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1995/96 survey. It found no difference in levels between free range and other eggs. "This is very reassuring and good news for the consumer. If you're buying UK-produced eggs from shops and markets, the possibility of any salmonella contamination is very low indeed and significantly lower today than in the mid-1990s," said Dr Judith Hilton, head of Microbiological Safety at the Food Standards Agency (FSA), the food safety body that carried out the research. Some foodborne diseases are well recognised, but are considered emerging because they have recently become more common. Outbreaks of salmonellosis have been reported for decades, but within the past 25 years the disease has increased in incidence on many continents. In the Western hemisphere and in Europe, *Salmonella* serotype Enteritidis (SE) has become the predominant strain. Investigations of SE outbreaks indicate that its emergence is largely related to consumption of poultry or eggs.

Groups in society vulnerable to this foodborne pathogen include the elderly, babies and toddlers, pregnant women, and people who are already unwell and more vulnerable to infection. The results are particularly welcome in light of new European legislation in place by mid-summer this year that requires all eggs from member states to be stamped with a code indicating their country of origin. UK eggs will have the letters 'UK' stamped on them. As the survey shows, although the chances of eggs being contaminated are now very low, eggs cannot be guaranteed to be salmonella-free, whatever the source or type. All types of retail eggs were included in the survey, with eggs from caged production accounting for 50 per cent of total eggs sampled, free-range eggs 16.9 per cent, barn eggs 16.5 per cent and organic eggs 16.6 per cent. Back in 1998 a programme was set up to vaccinate UK laying hens against a common type of salmonella (*Salmonella* Enteritidis), leading to a steady decrease in the number of cases of human illness from this type of salmonella. The number of reported *Salmonella* Enteritidis cases is now at its lowest level since the late 1980s. But, says the FSA, there was a statistically significant higher prevalence of salmonella contamination of eggs from medium sized retailers – independent and local shops, than large retail outlets.

Of the nine isolates from salmonella-positive samples, seven (78 per cent) were *S. Enteritidis* and of these, three were *S. Enteritidis* M phage type 4 (PT4). There were also single isolates of *S. Infantis* and *S. Livingstone*. All of the salmonella isolates were fully sensitive to ten antimicrobial agents and none of the three *S. Enteritidis* PT4 isolates corresponded to known vaccine strains. *Salmonella Infantis*, *S. Livingstone* and *S. Enteritidis* PTs 4, 6 and 12 were found in previous egg surveys. In addition to the nine salmonella positive samples there were a further 5 egg samples which were reported as positive for *S. Dublin*. "The small number of positive samples points towards random contamination from the production environment rather than any systemic contamination from infected flocks," concluded the FSA. Salmonella alone costs the EU an estimated €2.8bn. 22/03/2004 *FoodNavigator.com*

U.S. Moves Closer to Poultry Drug Ban

WASHINGTON - The U.S. government moved closer to banning an antibiotic given to poultry, as an administrative law judge Tuesday upheld the Food and Drug Administration's conclusion that Baytril's use in chicken causes people to get sick from drug-resistant bacteria. At issue are a family of antibiotics called fluoroquinolones, which include the popular drug Cipro. Some fluoroquinolones are used in animals, but others are a leading treatment for thousands of Americans who get food poisoning from campylobacter, bacteria found mostly in chicken. Cases of antibiotic-resistant campylobacter are rising, federal health statistics show - and an FDA investigation

concluded that use of fluoroquinolones in chicken is one significant cause. So in 2000, the FDA proposed banning the two fluoroquinolones used in poultry. Abbott Laboratories agreed to pull its version, Sara Flox, off the market immediately. But Bayer Corp. fought the decision, and its Baytril has continued to sell during the company's appeal. FDA Administrative Law Judge Daniel J. Davidson ruled against Bayer, citing "serious questions about the safety of Baytril use in poultry" in deciding the FDA's ban should take place. Bayer has 60 days to make a final appeal directly to the FDA's commissioner - and plans to, a spokesman said late Tuesday. The company will argue that Baytril is the most effective treatment to prevent the spread of a troubling respiratory disease in poultry processing plants. If the commissioner does not intervene, the ban could take effect by late May. A coalition of consumer advocacy and environmental groups, called Keep Antibiotics Working, called on Bayer to quit the fight, arguing that major poultry producers and purchasers, including McDonalds, already insist on a fluoroquinolone-free chicken supply.

The Associated Press 17/3/04

EU: Food security in infectious world

The European Commission recently convened researchers, experts and decision-makers from all over the world to discuss ways to increase international cooperation in the battle to combat highly transmissible animal diseases such as foot and mouth disease (FMD) and classical swine fever (CSF), reports CORDIS. The economic consequences of outbreaks of FMD and CSF, future research needs, ethical questions and new EU legislation in this sphere were also the focus of this workshop on epizootic diseases. In 2001, FMD alone cost the EU more than €10 billion. CSF, which is still a concern in some parts of the EU, led to the slaughter of 15 million pigs in the 1990s. In developing countries, communicable animal diseases have even worse consequences, with an impact on trade, development, food security, poverty reduction, transport and tourism, said the news report. In addition, dealing with those highly infectious diseases raises questions of social, environmental and ethical dimensions. Due to the transboundary nature of the recent outbreaks, control, prevention and research must take place at global level. The workshop was an opportunity for the Commission to re-emphasise its readiness to be a part of the international effort. *'Europe has a strong tradition in research into transmissible diseases,'* said Commissioner Phillipe Busquin.

To combat the most recent of these diseases, Avian influenza, the research project AVIFLU is set to receive €1.8 billion from the EU over the next three years. It will look for ways to improve the diagnosis and control of avian influenza infections. The EU is also contributing €270,000 over four years to an additional research project, ESNIP, which will set up a European surveillance network for a variant of influenza in pigs. Under the Fourth and Fifth Research Framework Programme, the EU financed seven projects on detecting viruses and antibodies, and more recently, two projects conducting research into vaccines for FMD and CSF were accepted for funding under the EU Sixth Framework Programme (FP6). *foodnavigator.com18/02/2004*

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4. GMOs

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Philippines: GM pollen damages health

The first evidence of health damage from the pollen of a GM crop emerged yesterday. Professor Terje Traavik, director of the Norwegian Institute of Gene Ecology, revealed details of a study apparently showing that villagers from a farming community in the Philippines, close to GM maize, suffered 'fevers, breathing problems, intestinal and skin ailments'. He said that blood tests indicated the symptoms resulted from inhaling mutated maize pollen that had been carried on the wind. The professor's findings were revealed at a United Nations conference in Kuala Lumpur, where US Government officials tried to reject consumer alarm over GM crops and food. Monsanto, the GM maize developers, and the Philippines Government, 'cheerleaders' for the technology, have rejected the professor's findings. (Soil Association/ UK Daily Mail 25/2)

US: Modelling gene flow

A key fear driving consumers away from genetically modified foodstuffs is the belief that conventional crops will be bastardised by genes from GM neighbours. A new study released this week does little to relieve these concerns. An investigation by scientists from the University of Wisconsin-Madison and the University of Minnesota-St. Paul shows that containment strategies can quickly fail. Using mathematical models, the team of scientists explored the effectiveness of proposed containment strategies to inhibit the escape of transgenes - genetic information from other organisms that is artificially inserted into crop plants to make them more resistant to pests, herbicides or climate conditions.

The findings, published in the March issue of *Ecology Letters*, show a high probability that leakage can occur much sooner than expected. *"Lots of people are worried about gene flow from cultivated crops to wild relatives,"* said Ralph Haygood, a UW-Madison postdoctoral fellow and the lead author of the paper. Transgene escape - when artificially inserted genes flow from crops to nearby wild populations and become a permanent feature of their genomes - is worrisome, he says, because it can change the genetic make-up of wild populations, sometimes eliminating genes that could be used to improve crops, and possibly turning these wild populations into aggressive weeds. The goal, then, is to develop strategies to prevent transgene escape. *"Environmentalists say we should stop planting transgenic crops, but that's not going to happen,"* said the Wisconsin researcher. *"Aside from not growing transgenic crops near sexually-compatible wild relatives, we need to investigate ways to reduce the risk."* Strategies currently being developed involve gene containment, where the artificially inserted genes are confined and, theoretically, inhibited from escaping or being favoured in wild populations. For example, the technique called the "exorcist" induces certain chemical reactions inside the plant cell that pulls out and eliminates the transgene once the plant no longer needs it.

Another technique involves inserting the artificial gene near a gene that is bad for the plant under wild conditions, making it unlikely that the transgene, should it escape, will spread in the wild population. The gene-confinement strategy closest to commercialisation, said Haygood, involves inserting genetic information into the DNA of the chloroplast, a part of the plant cell that contains its own genome. An advantage of this strategy is that chloroplast DNA - and any artificial genetic information it includes - is rarely transmitted through the plant's pollen, the main vehicle for transporting genetic information to nearby wild relatives. *"This technique is being greeted as a panacea that could make the whole problem of transgene escape go away,"* he said. But he also points out, *"it has been shown that chloroplast DNA transmission through pollen can occur at a low rate."* Given that this gene containment strategy is not failsafe - suggesting that transgene escape is

inevitable, given enough time - the researchers investigated the rate at which artificially inserted genes, confined by some of the strategies mentioned above, could reach and become fixed in wild populations.

"For each strategy, there is the possibility of transgene leakage," explained Haygood. *"The question shouldn't be whether or not transgene escape will happen. It should be how long will it take."* To answer this question, Haygood, Anthony Ives from UW-Madison and David Andow from the University of Minnesota-St. Paul developed a mathematical model based on factors controlling gene flow from crop plants to wild relatives. The factors include the rate of transgene leakage, the rate of pollen flow, the size of the wild population and the effects of the transgene under wild conditions. By considering these factors, the researchers not only could calculate the probability of genes spreading to wild populations, but also the probability that they will be passed on to future generations. Successful transgene escape, noted Haygood, depends on the survival of the gene.

With the model, the team estimated how many growing seasons it would take for artificially inserted genetic information that's been confined to fix itself in wild populations. *"This is a situation where you have chance after chance for something to happen,"* explained Haygood, adding, *"there's a certain chance in every generation for escape."* Because the rates of pollen flow and leakage are low, he said that one would expect a long time to pass before a transgene escapes into a wild population. Findings from the model suggest that even when the average time is as long as 100 growing seasons, the chances are that transgene escape can occur much sooner, regardless of the containment strategy. The results show, for example, that a leakage rate of 2.5 per cent - the actual value found by Hungarian scientists in the 1980s who studied the probability of chloroplast DNA transmission through the pollen of tobacco plants - could result in transgene escape within just 22 generations. Similarly, a leakage rate as low as one-tenth of 1 per cent, along with plausible values for the other parameters, leaves a 60 per cent chance of transgene escape within the first 10 generations. The situation, according to Haygood, is worsened when one considers that a transgenic crop is likely to be planted on more than one field, increasing the probability of escape. *"Imagine that it is planted not on one field, but 100. That would substantially aggravate the problem,"* he said. Although the model does have limitations, the researchers say it includes all the essential elements for predicting gene flow and can be tweaked to take into account different scenarios. *"The abstract structure of the model will be the same,"* said Haywood. One of the key messages of the research paper, the researchers emphasise, is that scientists will need to develop containment strategies with the smallest possible leakage rate to minimise the chances of transgene escape within short periods of time. David Andow added :*"We really need to study the failure rates of gene confinement with levels of precision perhaps on the magnitude of one out of every 10,000."*

24/02/2004 foodnavigator.com

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5. BSE

US: Breakthrough in prion research

A key discovery about how prions - mysterious morsels of protein thought to be the cause of mad cow disease and similar brain disorders - infect healthy cells is being hailed by

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scientists as a breakthrough in the quest to understand the role of these proteins in neurological diseases. The findings, according to the two Florida State University scientists who led the study, are the "first definitive proof" that prions can transfer heritable traits from one living system to another without the help of gene-carrying DNA or its cousin RNA, compounds called nucleic acids. The findings, says Donald Caspar, a structural biologist based in FSU's Institute of Molecular Biophysics, imply that the accepted theory that DNA is the basis of all heredity, including the transmission of deadly diseases, might have to be revisited.

The two scientists Chih-Yen King and Diaz-Avalos, working with yeast cultures, isolated and identified three different strains of yeast prions, each of which were found to originate from the same protein molecule that, for reasons yet unknown, turned into infectious prions. The team found that these all-protein particles act like genes in transferring life-changing information in yeast cells without relying on DNA or RNA as the information carriers. Work by Jonathan Weissman at the University of California, San Francisco reached the same conclusions as the FSU scientists, albeit from a different angle. Also using yeast cultures as a model, Weissman's group isolated and identified two distinct yeast prion strains caused by "protein-only" prions. Collectively, the research helps resolve the most puzzling question in prion research, King said. Since prions were first hypothesized in 1982 by Stanley Prusiner, a professor at UCSF, the curious particles have been implicated in a variety of degenerative neurological diseases, ranging from scrapie in sheep to the now well known bovine spongiform encephalopathy, or mad cow disease, that can be passed on to humans with lethal consequences. Scientists therefore reasoned that prions came in multiple strains, just like viruses, capable of producing different symptoms in host animals. But unlike viruses, which essentially are tightly coiled packages of DNA or RNA, exhaustive analysis never found even the slightest trace of nucleic acids in prions. Many scientists could not imagine any way for an infectious agent to affect host animals in different ways without using DNA to pass along different sets of instructions to living cells. Even after Prusiner won a Nobel Prize for Medicine for his ground-breaking prion work in 1997, many scientists were still skeptical that his "protein-only" theory - that prions could act as agents of heredity all on their own without the benefit of DNA - would hold up. *"Prusiner had a lot of very strong circumstantial evidence, but no rigorous proof,"* said King. *"People speculated that the nucleic acid was there, you just couldn't find it. Our research shows, convincingly, unambiguously, that you have strains that (consist of only) one protein, just folded differently."* Using yeast as a model because of its reproductive speed and its safety (yeast prions are harmless), King and Diaz-Avalos demonstrated that prions act much the same way in yeast as they apparently do in mammals. When introduced into healthy cells, so-called "misfolded proteins" (or prions) seek out and find certain proteins that are identical to the proteins from which they were originally made. Contact with the invading prions causes healthy protein molecules to warp into the same "misfolded" pattern as their attackers, thereby becoming prions themselves. Invariably, this leads to the disruption or alteration of normal cell function, King said.

Full findings are described in the 18 March issue of the journal *Nature*.

FoodNavigator.com 18/03/2004

US: Expanded BSE Surveillance Program

US Agriculture Secretary Ann Veneman has announced details for an expanded surveillance effort for Bovine Spongiform Encephalopathy (BSE) in the United States. "We are committed to ensuring that a robust U.S. surveillance program continues in this country," said Veneman. "This one-time extensive surveillance plan reflects the recommendation of the international scientific review panel." On Dec. 30, Veneman

announced that an international scientific review panel would review the U.S. Department of Agriculture's investigation into the BSE find in Washington State and provide recommendations for future actions. Last month, this panel, operating as a subcommittee of the Secretary's Advisory Committee on Foreign Animal and Poultry Diseases, recommended a one-year enhanced surveillance program targeting cattle from the populations considered at highest risk for the disease, as well as a random sampling of animals from the aged cattle population. The panel also complimented USDA on its investigative efforts as well as commented that the removal of specified risk materials from the food supply was the single most important action USDA took to protect public health.

USDA's BSE surveillance program historically has been focused on the cattle populations where it is most likely to be found, including those condemned at slaughter because of signs of central nervous system disorders, non-ambulatory cattle and those that die on farms. In FY 2004, USDA sampled 20,543 animals—a sample size designed to detect the disease if it occurred in one animal per million adult cattle with a 95 percent confidence level, which is 47 times the international standard for low-risk countries. Veneman said that \$70 million will be transferred from the USDA Commodity Credit Corporation to fund the enhanced program with the goal to test as many cattle as possible in the high-risk population as well as to test a sampling of the normal, aged cattle population over a 12 to 18 month time frame. The enhanced surveillance plan incorporates recommendations from the international scientific review panel and the Harvard Center for Risk Analysis; both have reviewed and support the plan.

The primary focus of USDA's enhanced surveillance effort will continue to be the highest risk populations for the disease, but USDA will greatly increase the number of target animals surveyed and will include a random sampling of apparently normal, aged animals. USDA will build on previous cooperative efforts with renderers and others to obtain samples from the targeted high-risk populations, which are banned from the human food supply. Under the enhanced program, using statistically geographic modeling, sampling some 268,000 animals would allow for the detection of BSE at a rate of 1 positive in 10 million adult cattle with a 99 percent confidence level. In other words, the enhanced program could detect BSE even if there were only five positive animals in the entire country. Sampling some 201,000 animals would allow for the detection of BSE at the same rate at a 95 percent confidence level. The sampling of apparently normal animals will come from the 40 U.S. slaughter plants that handle 86 percent of the aged cattle processed for human consumption each year in the United States. The carcasses from these animals will be held and not allowed to enter the human food chain until test results show the samples are negative for BSE.

USDA will begin immediately to prepare for the increased testing, with the anticipation that the program will be ready to be fully implemented June 1, 2004. In the meantime, BSE testing will continue at the current rate, which is based on a plan to test 40,000 animals in FY 2004. Testing will be conducted through USDA's National Veterinary Services Laboratory in Ames, Iowa, and a network of laboratories around the country. USDA is also working to approve rapid tests for use in the testing program. USDA will help defray costs incurred by industries participating in the surveillance program for such items as transportation, disposal and storage, and carcasses being tested. Detailed information on the surveillance plan can be found at www.usda.gov. *USDA Press Release, March 15, 2004*

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6. NUTRIENT CONTENT

UK: Less salicylates in foods

Levels of salicylates, the class of compounds to which aspirin belongs, have declined in our foods, according to Gareth Morgan, a public health practitioner at the National Public Health Service for Wales. Salicylates have been shown to ease pain, prevent cancer, heart disease and Alzheimer's disease. They are produced by crops as a self-defence mechanism against pest attack. The use of pesticides means that crops do not need to produce salicylates. "At the very least", says Morgan, "the micronutrient theory of salicylate is one more reason for everyone to aim for five daily portions of fruit or vegetables. Does it also suggest we should all switch to organic produce, or that we should choose the most battered and bruised piece of fruit on the supermarket shelf? That is less certain until more research has been carried out. The potential public health benefits are so great that it would be wrong to ignore this important issue." (New Scientist 7 February, [p 36](#))

Editor: These comments on the decline of salicylates in foods are relevant for most phytonutrients in general. The only research I'm aware of directly comparing salicylates was that bogus Scottish soup study - so not much to get excited about. The benefits discussed here are based on the use of aspirin tablets, with thousands of times the concentrations in foods. Note the letter published in the very next issue, in which a commentator points out "Until there is more compelling evidence for the role of natural salicylate (not man-made aspirin) in amounts that are demonstrably effective, it is a long bow indeed that Morgan draws." *Lyndsay McLeod, Australia (New Scientist vol 181 issue 2438 - 13 March 2004, page 30)*

UK: Higher omega 3 in organic milk a red herring

(Feb 23 2004 The Western Mail/Soil Association): A new study published by the Aberystwyth-based Institute of Grassland and Environmental Research has found organic milk has higher levels of essential fats than conventional milk. The research, published in *Journal of Dairy Science* (Dewhurst RJ et al, 2003, Comparison of grass and legume silages for milk production. 2. In vivo and in sacco evaluations of rumen function, *J Dairy Sci* 86(8):2612-21.) led by Dr Richard Dewhurst at IGER, found that samples of milk from organic cows contained at least 64 per cent more omega-3 than conventional milk. Organic dairy farmers are now calling on the Food Standards Agency to recognise the health benefits of organic milk. Sally Bagenal, chief executive of OMSCo, Britain's leading co-op of organic dairy farmers, said the findings should prompt Sir John Krebs, chairman of the Food Standards Agency, to reverse his view that there was no proof of the health benefits of organic food and drink.

Nutritionist and dietitian Sian Porter said most people in the UK did not have an adequate intake of Omega 3 fatty acids and needed to increase the amount of Omega 3 rich foods in the diet. "The best source is oily fish, but research has shown that only one third of the population eats oily fish regularly." she said. Recent data shows huge growth in sales of organic milk, with the market continuing to grow by more than 30% every year.

Editor: As a qualified nutritionist I have to say that this study showing higher omega 3 fats in organic milk is a red herring. Milk is a poor source generally of omega 3 fats (just 1% of

the fat content is omega 3), and two thirds more in organic is still very very little. Often, even a small increase in nutrients in a food can help somewhat, yet nutritionally speaking, two thirds more omega 3 fats in organic milk would convey next to zero health benefit to the consumer. In fact, if someone needs more omega 3 fats in their diet, the nutritional advice is for them to decrease their milk intake. Milk is rich in an omega 6 fatty acid called arachadonic acid, which competes for absorption and utilisation in the body with omega 3 fats. It's pro-inflammatory, while omega 3 fats are anti-inflammatory. If someone's low in omega 3 fats they'll be susceptible to inflammatory conditions (e.g. asthma, eczema, allergies, arthritis) and the last thing they need is more pro-inflammatory arachadonic acid. This study sounds good for the organic milk sector's marketing campaigns...but overall it's meaningless and does little for the organic industry's credibility in the eyes of research scientists, critics and regulators with even a basic knowledge of nutrition. Consumers would do better to EAT red herrings than listen them if they need more omega 3 fats!

Reader question: But if all else were equal, wouldn't it be better to chose organic milk over conventional?

Editor: If all else were equal, consuming either organic or conventional milk, in my opinion, would do next to nothing for your omega 3 status. The absolute amounts of omega 3 fats are too small and the relative amounts of omega 6 arachadonic acid too large for the omega 3 fats to be of any use. It's like saying there's three times the level of vitamin B2 in organic oranges, but if oranges aren't a very good source of B2 in the diet compared to other foods that's not very relevant, is it? Of course there ARE reasons I'd advocate the choice of the organic milk over the conventional. Less pesticides and hormones for starters. Also, there IS a fat in organic milk higher than conventional milk levels of interest - it's called CLA. Unlike omega 3, milk and meat are good sources of CLA and it's been shown that organic milk has higher levels. Now THAT'S interesting. So the bottom line remains - if you need more omega 3 fats in your body, drink LESS milk, and don't make false choices between organic and non.

US: Tomatoes bred to contain extra antioxidant

US scientists have created purple tomatoes that include anthocyanins, the antioxidant pigments in red wine believed to prevent heart disease but not normally found in domestic varieties of the fruit. The team said the fruit, produced through traditional breeding techniques, could help researchers develop more new varieties of tomatoes with other nutrients, both for home gardeners and for the food industry. *"Tomatoes are second only to the potato in terms of the top vegetable consumed in the world,"* said Jim Myers, professor of vegetable breeding at Oregon State University. *"Per capita use in the US in 2003 was 89 pounds of tomatoes per person. If we could boost the nutritional value of tomatoes, a large part of the population would benefit from that."* Tomatoes are already known to contain lycopene, a carotenoid thought to reduce risk of prostate cancer and fight heart disease. Anthocyanins are the source of the blue, purple and red colour of berries, grapes and some other fruits and vegetables. These pigments also function as antioxidants, believed to protect the human body from oxidative damage that may lead to heart disease, cancer and ageing.

The new research, published in the February issue of the *Journal of Heredity*, crossed a domestic tomato plant with a genetic stock of tomato that included a gene incorporated from a wild relative with anthocyanin-containing fruit and the Aft gene. The result: a domestic-type tomato fruit containing the purple pigment and the Aft gene, opening the door towards developing anthocyanin-rich tomatoes. The researchers grew the seeds of their new cross of anthocyanin tomato fruit for two generations, backcrossing them with

the original parent types. This work led them to confirm that anthocyanin fruits are transmitted in tomatoes by a single dominant gene, Aft. *"We are learning about how anthocyanin genes are expressed in tomatoes, and how we might cross tomatoes to get more nutritional value,"* explained Myers. Comparing chemical analyses of the tomatoes with the Aft gene to those without the gene, the OSU plant breeders determined the pigment composition of anthocyanin fruit gene, explained Myers. They also verified that having fruits containing anthocyanin could be inherited through a single gene, Aft.

Another researcher at the university is currently breeding new crosses of tomatoes and analysing the antioxidant activity of not only anthocyanins in the fruits, but also carotenoids. He is also conducting preliminary nutrition studies on humans that have consumed different types of his tomatoes as juice, to see how the various carotenoids are metabolised and which carotenoids prevent oxidation in human plasma. *"The medical, the nutritional and the food research industries all are keenly interested in the health benefits of phytochemicals in all sorts of fruits and vegetables,"* said Myers. *"We are happy to find out we can accomplish this in tomatoes using traditional, classical plant breeding techniques."* In Europe, 8.5 million tons of tomatoes are cultivated annually with 1.5 million tons sold directly to the consumer and 7 million processed for products such as ketchup and sauces. But the global tomato processing industry has seen prices tumble in recent years, and although this situation is starting to improve, growing competition from China – now the third largest producer – means many players will be looking for ways to add value to the fruit.

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7. HEALTH & DIET

US: Study casts shadow over '5-a-day' campaigns

Despite strong research that shows eating regular daily servings of 'powerhouse' fruits and vegetables can reduce the risk of chronic disease, new research out of the US says people are not eating 'because they are confused about nutrition,' with much of the blame falling on organisations responsible for health messages. Writing in the the March issue of the *Journal of the American Dietetic Association* Susie Nanney, acting director of the US-based Obesity Prevention Center at Saint Louis University claims that although consumers recognise a healthy diet should include at least five fruits and vegetables, they are not making the most nutritious choices because messages about what to eat are unclear. "They are not translating 'variety' in a way to capture health benefits, such as reducing their risk of developing chronic diseases," said Nanney. She claims that the United States Department of Agriculture, the Department of Health and Human Services, the American Cancer Society, and the American Heart Association offer conflicting messages about which fruits and vegetables are most nutritious.

"You can see how the public gets confused by inconsistency in the messages. Until nutrition messages become more consistent and direct, we may not see improvements in powerhouse vegetable and fruit intake behaviours to any great extent," she said. The fruit and vegetables that do the best job in reducing the health risk for chronic disease are dark green leafy vegetables, yellow/orange, citrus and cruciferous. But, says Nanney, even those guidelines can be confusing. With obesity and heart disease rates rising - according to WHO heart disease kills more people around the world than any other disease - across

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the globe government's are finding themselves weighed down by rapidly mounting health bills. Looking for strategies to improve the health of populations many have launched a series of national health guidelines reaching out to the consumer to encourage them to consume '5 a day' of fruit and vegetables. But if, as Nanney suggests, the message is mixed, millions of dollars and euros may already have been wasted. Advice to eat a specific quantity of fruit and vegetables has its roots in the UN agency, the World Health Organisation (WHO) that in 1991 started recommending a minimum intake of 400g fruit and vegetables a day. One portion of fruit and veg is 80g, so five portions add up to 400g. The WHO advice - adopted by several national governments - is based on a wide range of international different studies that have shown consistently that populations with a high intake of fruit and vegetables have a lower incidence of heart disease, some cancers and other health problems. In 1994, the Committee on Medical Aspects of Food and Nutrition Policy (COMA), which advises the UK Government, examined the links between diet and heart disease. COMA concluded that fruit and veg help to protect against heart disease and that people in the UK should increase the amount they eat to at least five portions a day.

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8. RESEARCH

Germany: Annual organic research report released

INSTITUTE FOR BIODYNAMIC RESEARCH ANNUAL REPORT 2003. The Institute for Biodynamic Research (Institut für Biologisch-Dynamische Forschung), Darmstadt, Germany, the oldest private research institute for organic farming in Europe, has published its annual report for 2003. It covers ongoing research activities on organic fertilization, soil biology, plant breeding, seed treatment, food quality, peat-free propagating mediums, and biodynamic preparations. It can be downloaded at www.ibdf.de/down/list.htm (pdf document, 1.67 MB).

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9. PROMOTION

Germany: Marketing campaign: "Vegetables of Character".

Biodynamic plant development as practised by Verein Kultursaat for ten years in meanwhile 20 projects on Demeter farms focuses on the nutritional physiological approach. Almost 30 varieties have been developed until now, which are recognized by the Federal Plant Variety Office and sold under licence via Bingenheimer Saatgut AG and organic seed initiatives in other European countries.

The marketing campaign "Vegetables of Character" is currently being launched in the organic food stores. First three kinds of carrots with accompanying information material

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like poster, crate tag, flyer and brochure will be introduced into the shops via the trade. Other kinds of vegetables like cabbage, tomatoes, cucumbers or peppers are to follow. At the BioFach exhibition, Tegut presented the initiative with a check for around 4,700 EUR for further work.

(see under Projekte/Saatgut und Züchtung)

<http://www.forschungsring.de>

<http://www.organic-research.com/news/database/newsarticle.asp?id=2753>

The German government spent some 6.65 million EUR on the organic label information campaign in 2003. 4.9 million EUR of this was for TV spots, large posters and publications in trade journals and magazines.

Research by the Institute for Social-Ecological Research (ISOE) in Germany has shown three consumer groups in particular will be growth areas for organic foods: The Holistic Convinced Consumer, where ethical considerations and Epicurean enjoyment are important; The Successful and Demanding Consumer, where wellness of children is a central motive; and The 50+ Health Oriented Consumer, where reliable information and qualified advice are highly regarded.

UK: Ethics of growing consumer importance

Ethics are now a major factor in consumer choice, with two thirds of consumers claiming to be green or ethical, according to a poll commissioned by The Guardian and Toyoto. These issues are taken seriously across all income brackets and occupations. The 18-34 generation is most likely to spend ethically, while ethical consumers in the South East, Wales and the West country topped those in Scotland. (The Guardian, 28 February)

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10. POLITICS

UK: Conditional approval for GM maize

The UK government has said it agrees "in principle" to the commercial cultivation of genetically modified herbicide-tolerant maize. In a decision that is likely to anger environmental lobby groups, the UK's environment secretary Margaret Beckett said the government-backed science review had concluded that there was no scientific case for ruling out all GM crops or products. Beckett said the government expects coexistence measures to be in place before any GM crops are grown commercially, and that commercial cultivation of GM maize is not anticipated before spring 2005 at the earliest. She proposed that farmers who wish to grow GM crops should be required to comply with a code of practice based on the European Union's 0.9% labelling threshold, and that this code should have statutory backing. Beckett added that the government would provide guidance to farmers interested in establishing voluntary GM-free zones in their areas, consistent with EU legislation. "There is no scientific case for a blanket approval of all the uses of GM. Safety, human health and the environment must remain at the heart of our regulatory regime and rigorous and robust monitoring must be maintained," the environment secretary said. "But equally there is no scientific case for a blanket ban on the use of genetic modification. I know of no one who argues, for instance, that the GM tool alone can solve the problems of the developing world. But it is less than honest to pretend,

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especially against a background of climate change, that GM has not the potential to contribute to some solutions," she added.

Environmental groups were quick to voice their disapproval of the decision. "The government must reconsider its plans," Friends of the Earth director Tony Juniper was quoted by Reuters as saying. "Tony Blair must not ignore the threat GM poses to our food, farming and the environment." 09 Mar 2004 *just-food.com*

The UK Government has decided that compensation for damage caused by GM crops should be funded by the GM industry, according to leaked minutes seen by the Soil Association. The story was given to the Daily Telegraph by the Soil Association press office. The minutes reveal that a Government proposal whereby compensation for damage caused by GM crops "would be funded by the GM industry" was agreed by the Cabinet's GM Committee earlier this month. According to Paul Rylott, chair of the GM industry's Agricultural Biotechnology Council, there is a "finite amount of money" to be gained by planting GM, which was at risk of erosion if the Government made the industry liable for losses. He said that if the financial benefits of GM were threatened "there will not be any point in planting GM crops because there will be few benefits to farmers". For the full press release go to <http://www.soilassociation.org/web/sa/saweb.nsf/librarytitles/195CA.HTML> *FoodNavigator.com*

Elliot Morley, the environment minister, said yesterday that the planting of GM crops within the UK will be delayed by at least another year. The delay is because it will take many months to sort out proper separation distances between crops, and a liability regime for contamination of conventional and organic crops. Although the issue of distances between crops might be relatively easy to resolve, the twin problem of compensation if all goes wrong, and who pays the bill for it, remains undecided. (The Guardian)
Michael Meacher attacked the Government for having no moral, scientific or political authority to press ahead with the cultivation of GM maize. He said that Margaret Beckett was 'raising the telescope to her blind eye'. He went on to say that the Government has no mandate to proceed with commercial GM crops, particularly if it eliminates the organic sector which is fast growing and widely popular. (*Soil Association/ Independent on Sunday, Comment, 22/2*)

Spain: Govt passes GMO regulation

The Spanish Council of Ministers passed a regulation at the end of January concerning the use of genetically modified organisms in closed systems and the intentional spread and sale of GMOs. The regulation provides for a "step-by-step principle": GMOs will be spread when an analysis of the preceding phases shows that no risks exist. The regulation defines such aspects as the involvement of the public and access to information about the permitted spread and marketing. The regulation makes provision for the sale, traceability and marking of GMOs.

<http://www.agroinformacion.com/Home/index.cfm?fuseaction=News.Detalle&ID=852>

Germany: GMOs permitted on April 18

Less than a month to go until genetic engineering is officially permitted in Germany. Although Renate Künast attempted to make provisions in the Genetic Engineering Act passed at the beginning of February that would prevent the unrestrained spread of GMOs, it ultimately rests with the citizens themselves to decide whether or not genetic engineering gains a foothold in Germany.

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The April issue of Schrot&Korn now supports mobilization in the direction of "genetic food - no thanks". The magazine contains an eight-page file with background information, which is also available separately. There are also posters, stickers, postcards, buttons and carrier bags for the large-scale campaign. The colours red and yellow are a reminder of the anti-nuclear movement. "Despite the short notice, we have obtained 17 organic food companies as sponsors", says a delighted Martin Fütterer, the responsible editor at Schrot&Korn. The eleven key "anti-genetic-engineering associations" like Bioland or Greenpeace also support the action. <http://www.genfoodneindanke.de>

Australia: Western Australia bans commercial growing of GM crops

Western Australia has become the first Australian state to ban the commercial growing of genetically modified crops. Premier Geoff Gallop said the state would be declared a GM-free area in order to protect its "clean and green" reputation, Dow Jones News reported. "The cautious approach was also reflective of overwhelming public opinion in W.A. and consumer sentiment around the world," Gallop was quoted as saying. Gallop said his government's pre-election promises included a five-year moratorium on the commercial growing of GM food crops. "During the past three years, public opinion in W.A. has further strengthened against the intrusion of GM technology into the food chain," he said. The ban only includes growing GM crops for commercial uses, and therefore small field trials will still be permitted. info@aroq.com 23 Mar 2004 Source: *just-food.com*

UK: FSA lambasted (again)

A major article in the Sunday Times magazine lambasts the Food Standards Agency (FSA) for its incompetence over a wide range of issues including GM crops, organic food and farmed fish: 'In the eyes of many who ought to be its allies, the FSA has been worse than a disappointment...It loves GM. Hates organics....Pays no more attention to public opinion than it might to the clucking of a hen.'

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