



THE RAM'S HORN

A MONTHLY NEWSLETTER OF FOOD SYSTEM ANALYSIS

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Follow the Money

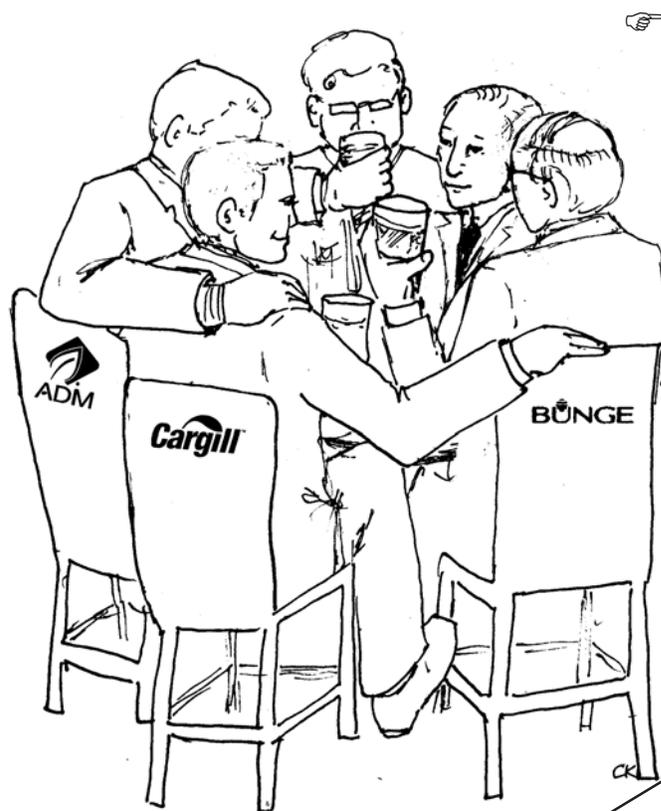
The price of the world's three main grains – rice, wheat and corn – has doubled in the past year. Rice exported from Thailand, for example, has risen from \$360 a tonne to \$760 in the past year and India has increased its export price for rice to \$1000 a tonne. The rise in prices is popularly attributed to the demand for food crops to produce agrofuels (ethanol and bio-diesel), population growth, prosperity leading to a rise in demand for meat, particularly in India and China, climate change, and the price of oil (for the manufacture of fertilizer and for transporting food commodities).

It's not just food prices. The CEO of fertilizer company Agrium told a global fertilizer investor conference in Toronto that the current high grain prices are good for his business. "Our customer – the farmer – is making a lot of money," he said. Agrium's stock has risen 48% over the past 12 months, while Potash Corp of Saskatchewan is up 165%. Canpotex, which exports the products of both Agrium and Potash Crop, has raised its price for sales to Brazil and Southeast Asia to \$750 a tonne, a 40% increase for Southeast Asia and an 85% increase for Brazil. In Brazil, it is soy (livestock feed for Europe) and sugar cane (for ethanol for Brazil and the USA) that require vast amounts of fertilizer. Fertilizer for India went up 130% to \$625 per tonne. Potash Corp's president said these price increases should produce a gross margin of \$2 billion this year, more than double 2007. Agrium's profits are expected to similarly increase.
– G&M, 3/4/08

Analysts such as Michael Pollan and Anna Lappé see some positive in the higher grain prices, pointing to the massive subsidies to the commodity crops in the US, and noting that "higher food prices level the playing field for sustainable food that doesn't rely on fossil fuels."
– NYT 2/4/08

However, nowhere have I seen any mention of the pockets in which those subsidies actually wind up. The fact that in every sector of the global industrial food system there are three, and possibly five, corporations in control is not discussed. But the oligopolistic structure of the food industry makes it quite possible that these companies are colluding in fixing prices, propa-

gating a variety of other plausible explanations for the rise in commodity prices as a smokescreen. As Noam Chomsky famously remarked, it does not take a conspiracy for elites to work together in their own self-interest. Cargill, ADM (Archer Daniels Midland) and Bunge are quite able, and willing, to work together for mutual advantage. Competition is a slogan for public consumption, not a behavioral description of Capital. (An article in the business pages of the Globe & Mail did comment that there is no sign that the US government plans to revisit its biofuel legislation "because there are powerful interests in Congress that benefit from it." However, it did not mention that ADM is not only the



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biggest ethanol producer but a perpetually major Washington lobbyist.)

Of course, this is not to deny that there really is drought resulting from climate change in Australia and Africa, or that the substantial subsidies for agrofuel production in the USA have driven up the price of corn, or that the rising price of oil has increased the cost of fertilizer and transportation, or that the emerging middle class in India and China (which is huge even though a small percentage of total population) is demanding more meat.

The point is that we are habituated to looking at discrete factors, not systems, to explain phenomena such as dramatic price increases. For example, the current financial meltdown in the USA should clearly be attributed to the inner dynamic of the capitalist system, not to some unusual events or isolated corrupt practices – though these are part of the reality, along with an attitude that social unrest and violation of trade rules are more significant than malnutrition and starvation.

A front page article in the Toronto Globe & Mail (29/3/08) prominently noted that the rise in commodity prices is “affecting just about everything people eat, and fanning social unrest in some of the most unstable corners of the world.” It also noted that “numerous countries, including Argentina and Vietnam, have capped or taxed exports . . . running the risk of violating international trade rules.” – **B.K.**

Supermarket Wages

For years, Wal-Mart's non-unionized work force has given it an advantage in the ‘supermarket wars’. Recently, Loblaw has opened three non-union No Frills stores in Western Canada, and the company is now looking at converting more of its Extra Food stores in Western Canada to the lower-cost No Frills format.

Cashiers at Real Canadian Superstores (Loblaw) in BC and Alberta make \$10-\$23 an hour.

In BC, Overwaitea (Jim Pattison's grocery chain) has converted seven of its Save-On Food stores to more utilitarian PriceSmart stores. Top wage rates at PriceSmart are nearly \$6 an hour lower than at Save-On, according to the UFCW union.

72% of Overwaitea/Save-On-Foods clerks and cashiers are paid between \$8 and \$12.50 an hour. \$22.5 is the top hourly rate for an Overwaitea clerk or cashier, but it takes three to five years to move into that wage scale.

World Beef

On March 4, publicly-traded Brazilian meat company JBS SA announced a \$1.27 billion deal to purchase National Beef Packing Co., the beef unit of Smithfield Foods, and the Australian beef company Tasman Group. If the deals are all approved, JBS will become the largest beef producer in the US and the world with about 32% of the US market and 10% of the world market, ahead of Tyson Foods and Cargill Meat Solutions. In 2007 JBS became the third largest beef packer in the US when it purchased Swift & Co. It operates 23 plants in Brazil and 6 in Argentina.

72 animal producer associations and agricultural, consumer interest and religious groups have sent a letter to the US Department of Justice outlining their concerns about JBS Swift's purchase of National Beef Packing and Five Rivers Ranch Cattle Feeding. Five Rivers is an independently operated joint venture between the cattle feeding businesses of Smithfield Foods and ContiGroup Companies. According to Smithfield, Five Rivers is the world's largest cattle feeder and has a combined feeding capacity of more than 800,000 head of cattle at any given time.

The Canadian Beef Export Federation's president Ted Haney says that Canada is nowhere near meeting its beef export goals. This is presumed to be a really bad thing. Japan, for example, was supposed to import 13,000 tonnes of Canadian beef in 2007 and actually imported only 4300 tonnes. Instead of 20,000 tonnes to Hong Kong, Canada exported only 8100 tonnes, while 10,000 tonnes less than projected were exported to Mexico.

In 2002, Canadian exported a record total of 521,000 tonnes of beef. In 2007 the total was 413,000 tonnes. We would dare to suggest that this is a hopeful sign that Canada is moving away from its export dependency. Haney views it differently, and his views certainly do not encourage realism among cattlemen. Haney wants to see exports of 650,000 tonnes by 2015 and 800,000 tonnes after that.

Of course he must ignore climate change and energy use, as well as the ecological costs of exporting that much protein – unless, of course, the Federation he represents is expecting a kickback from the oil and fertilizer industries.

One thing is certain, however. The Canadian Beef Export Federation is a bit of a misnomer: it represents Cargill and Tyson, the two major beef packers in Canada, neither of them ‘Canadian.’

About Feedback

Sticking the mailing labels on copies of The Ram's Horn always provides a little time for reflection on our subscribers and on the content of the current issue. Did we get the tone right? Too abrasive or blunt? Too soft and indirect? Whatever the answers – and the comments we get with renewals and notes – it is always good to think about you, wondering about your health and welfare.

Like us, the Canadian Food Inspection Agency wonders about its public, so it commissions studies to find out what the public (it refers to 'consumers,' of course) thinks of the job it is doing. I'm not sure it takes the responses as seriously as we do, though. According to the opening words of the latest report, its purpose is to "effectively position roles played by CFIA and the federal government in order to garner greater support for Canada's efforts." In other words, to improve its messaging, not its practices.

The report, entitled *Canadians' Perceptions of the Safety of Canada's Food Supply*, paints a picture that is probably quite close to the outlook of our readers. It came to our attention through an article in the Ottawa Citizen (6/2/08). We tried to find it on the Citizen's website but it was not posted, though other articles by the same writer have been. We then requested it from the CFIA and got a reply from Manager, Public Awareness, CFIA, giving us a url not at the CFIA but at Library and Archives Canada. We can only conclude that the CFIA did not want this report to be accessible. It can be found at:

http://epe.lac-bac.gc.ca/100/200/301/pwgsc-tpsgc/por-ef/canadian_food_inspection_agency/2007/226-07/report.pdf

Following are some quotes from the report, prepared in December 2007 by Les Études Marché Créatec:

"Overall, research findings were quite consistent in all eight [focus] groups, across language, ethnicity, region, and confidence level. Food safety was and continues to be a topic of strong interest to participants However, food safety issues were generally not top-of-mind, unless triggered by a recall or event."

"Long-term effects from things like pesticides, chemicals, GMO, hormones in meat and dairy products, and the lingering worries about the impact of mad cow disease on the meat supply were a much greater concern than foodborne illness or food poisoning, which was considered unpleasant but short-term and

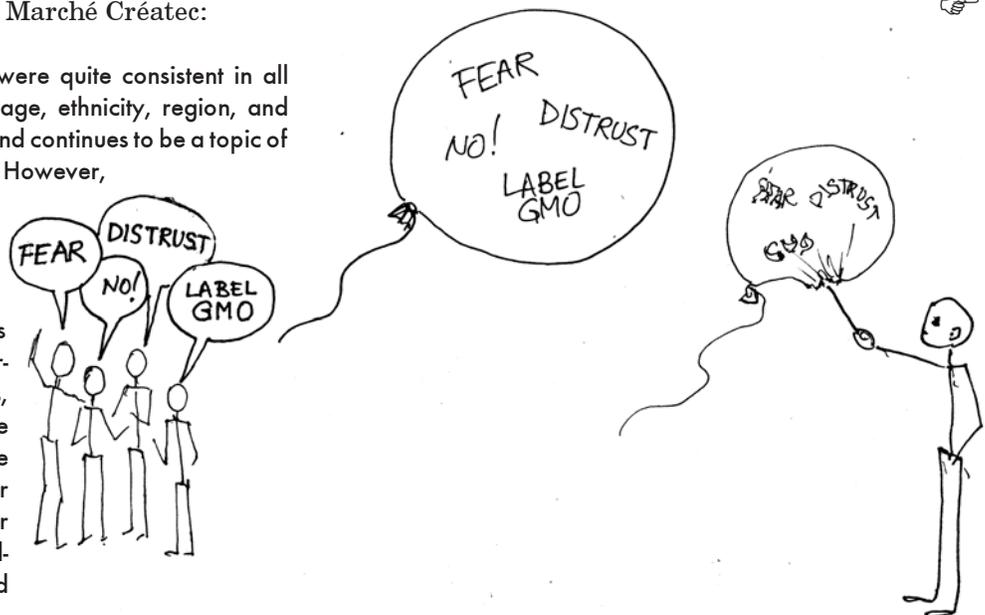
low risk. Besides cancer and serious food allergies, no other medical conditions or diseases – such as diabetes, heart disease, high cholesterol – were discussed in relation to food safety. Some did mention salt and trans fats, salmonella, and E. coli, but there was much more concern about chemicals, antibiotics, growth hormones and pesticides. . . When shopping, people reported increasing tendencies to read labels and look for reassurances with regard to both packaged and fresh foods. Those affected by food allergies made an even more stringent effort at label reading at point of purchase."

"Because of concerns about the use of pesticides, antibiotic residues, colouring, etc., there was a strong interest in organic foods, perceived by many to be healthier because of safer growing and production practices. However, many also questioned organic labeling as to what it meant, how monitored it was, how standards were established and by whom."

"People in this study, including those from Quebec, generally felt confident that the Canadian government was doing its job with regard to regulations and standards. They also generally believed Canadian standards are high. . . However, they did seem to care a lot and worry about inspection and compliance, on a local, regional, national and international level. Participants expressed many questions, doubts and uncertainties about the integrity of inspectors and the efficiency of the current food inspection system."

"Generally, people seemed to trust the Canadian government to inform them about relevant food safety issues, with some mention of Health Canada as a reliable source. In fact, there was a high degree of trust when it came to food alerts and/or recalls."

"Consumers demonstrated a very low confidence in the enforcement of regulations, especially at the local level. The enforcement of standards and regulations occupied the lion's share of consumer questions, doubts and uncertainties."



"The Made in Canada label had low credibility and was questioned because it was thought to guarantee nothing and was worrisome to consumers. The general impression of food safety in Canada was favourable but fragile. While the safety of the food supply was thought to fall within acceptable limits, people indicated that anxiety was just below the surface ready to quickly emerge."

"While people indicated that food label reading was on the rise, food labels were a confusing source of information for consumers. Often misunderstood, they created frustration and mistrust. Chemicals, additives and shelf-life extending agents (preservatives and packaging) were perceived as serious health threats. [there was] Uneasiness about incomplete or misleading food labels with regard to chemicals, additives, preservatives, allergenic components, general nutritional truth, and expiry dates in all types of foods. Consumers believed meat and poultry contained harmful and highly hazardous substances added by the food industry. . . . [such as] steroids, hormones, additives and antibiotic use, and what these animals were being fed, evidenced by mad cow disease."

"Overall, consumers had low confidence in imported food, which was viewed as a major threat to the safety of the food supply. People saw globalization as a cause of decreasing food quality. . . . People appeared to have an increasing mistrust of large corporations."

"There was unanimous concern about and negative impressions of biotechnology products. Consumers included GMO as part of food safety because of its unknown cumulative impact. . . . A high level of anxiety emerged about plastics and food containers—people were puzzled and uncertain about what to do. . . . Disease-causing [sugar] substitutes were a growing issue due to the current public health focus on weight and obesity . . .

"Consumer orientations to food safety seem to fall along a continuum, whose polar opposites range between avoidance of disease on the one end to achieving and maintaining optimum health on the other."

"At the avoidance of disease end, people's mindset focuses first on chemicals introduced by the food and farming industries, including mad cow, GMOs, fertilizers, pesticides, additives, antibiotics, preservatives, substitutes, plastics and packaging, etc., and then on bacterial contamination. At the achieving and maintaining optimum health end, people's mindset focuses on organic, locally-produced and non-imported foods, whose labels indicate they are free from various substances."

Clean Milk (relatively speaking)

Wal-Mart has announced that its store brand milk in the United States will now come exclusively from cows not treated with the synthetic hormone from Monsanto, rBGH. Wal-Mart says that its change was prompted by consumer demands. Grocery chain Kroger, with 2,500 stores in the US, began last month selling only milk produced without the use of rBGH. Safeway, with more than 1,700 stores, has switched its in-store brands to non-rBGH milk and since January, Starbucks has only used non-rBGH milk in its stores.

Contrary to Monsanto's claims, most dairy farmers in the US do not use the artificial hormones, which were first approved by the U.S. Food and Drug Administration in 1993. USDA statistics show only 18% of U.S. dairy cows were given artificial hormones in 2006, and its use continues to decline.

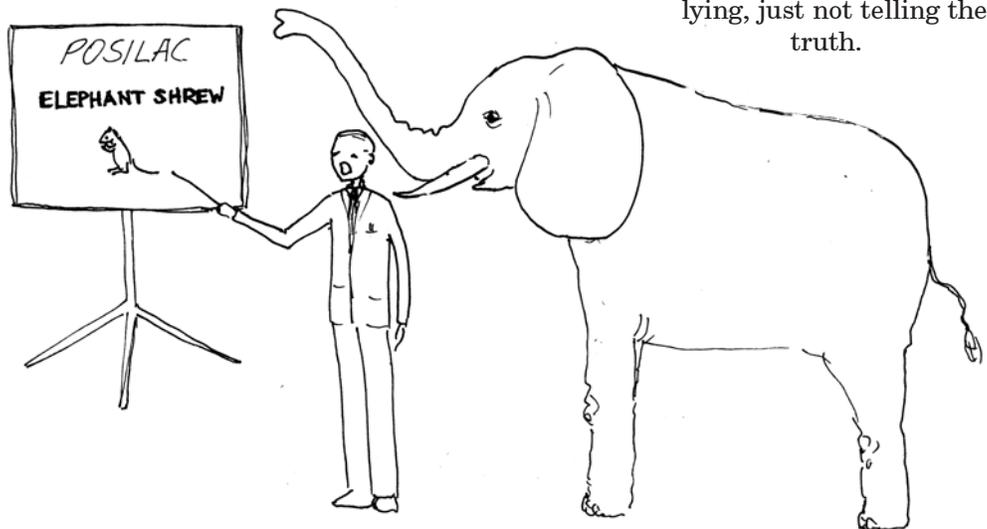
Here's Monsanto's propaganda about rBGH. Note the positive (and deceptive) language:

POSILAC® bovine somatotropin has become one of the leading dairy animal health products in the United States and many other countries. Supplementing dairy cows with bovine somatotropin safely enhances milk production and serves as an important tool to help dairy producers improve the efficiency of their operations.

Bovine somatotropin, or bST, is a natural protein produced in the pituitary glands of all cattle and it helps adult cows produce milk. Milk from cows receiving supplemental bST is unchanged and just as wholesome and nutritious as always - full of calcium, protein, phosphorus and vitamins. In fact, the level of bST in milk remains the same.

- *monsantodairy.com*

Of course, the issue with rBGH was never primarily the somatotropin, but the increase in IGF-1 (insulin-like growth factor) in the milk caused by the increased level of rBGH in the cow. So Monsanto is not lying, just not telling the truth.



Nutritionism

In his recent book, *In Defense of Food*, Michael Pollan offers advice to those confused or dismayed by the sad state of the food system outlined in his earlier work, *The Omnivore's Dilemma*. "Eat food," he says. "Not too much. Mostly plants."

"Eat food" sounds like a silly recommendation. What else is there to eat? Well, actually, what many of us now eat (or think we are eating) is nutrients – in other words, we have fallen prey to reductionist thinking in that most intimate of our actions, eating. The reason is, as any farmer knows, that you can't make much money selling whole foods. Potato farmers on PEI, to give only one example, are getting 4¢ a pound for their spuds that cost them 9¢ to produce. But once you take a whole food and break it down and process it into a manufactured food that contains phytochemicals and antioxidants and can be claimed to prevent everything from urinary tract disease to cancer, then you're practically coining money. Pollan calls this "nutritionism".

Of course such manipulations are expensive to develop and require operations on a grand scale to reap the rewards, which simply helps large corporations consolidate their hold on the food system. This echoes the industrialization of agriculture itself, when the nutrients and health protection requirements of plants started to be delivered in a bag or canister, rather than by the host of living organisms in the soil in which they grew. Genetic engineering, as Brewster points out in his book *Farmageddon* (available at www.ramshorn.ca for free download), is the logical extension of this deeply flawed thinking, as are the 'neutraceuticals' and 'pharmaceuticals' being touted as the answer – along with using crops for fuel – to the farmers' economic plight. Needless to say, both of these are more of the same in terms of where the control, and thus the ultimate profits, accrue.

The latest technological romance is nanotechnology, involving particles many times smaller than a red blood cell. Such particles frequently have very different properties than the same material at a larger scale. For example, aluminium is stable in everyday concentrations but becomes explosive at micro-fine levels. ETC Group notes that "a handful of food and nutrition products containing invisible and unregulated nano-scale additives are already commercially available. Likewise, a number of pesticides formulated at the nano-scale are on the market and have been released in the environment." One example is Titanium dioxide, the ultraviolet blocker which made old-fashioned sunscreens opaque and white, and is now being used at the nanoscale where it retains its UV-blocking properties but is transparent.

The food industry is very excited about the possibilities of such techno-marvels as packaging which indicates the freshness of the product inside, or, more sinister, stabilizers which keep foods from degrading for very long periods of time. As with GE, the first products are killers – pesticides – and as with GE, there has been no rigorous examination of the risks. ETC Group states, "*No government has developed a regulatory regime that addresses the nano-scale or the societal impacts of the invisibly small.*" Says Lynn Frewer of Wageningen University in the Netherlands, "*The problem with the digestion of nanoparticles is that we don't know where in the body they would end up. If they are small enough to travel through the wall of the gut, which some nanoparticles would be designed to do, they could end up anywhere. And how will they accumulate and travel through the food chain? We simply don't know.*"

Thinking in terms of 'safety' and 'risk' is itself, however, reductionist. We should be focusing on the ethical-cultural issues that are under constant attack by the ideology and opportunism of 'science and technology', 'innovation', and 'progress' (monotonously expressed by the current government of Canada as 'modernization'). Instead it seems that destruction of the social and ecological fabric of diversity counts as nothing in the face of the need to be 'competitive' in the game of corporate profit and political opportunism. **n C.K.**

–GW4/4/08; and www.etcgroup.org

Food Safety in China

Cargill has announced that it is to establish a joint food safety management training program with China's Quality, Inspection and Quarantine Service (AQSIQ). Cargill is to provide Chinese government officials, academics and business leaders with a two week food safety training program to expand their expertise and knowledge in food safety management. The program was part of a global initiative involving the company and selected academic, inter-governmental and non-governmental institutions to better harmonize global food safety systems.

Cargill will provide financial support and help design and implement the training program. Training will be done by the private sector, international food standards organizations, government officials and academic institutions based in Europe and the US. Cargill said that participants will have the opportunity to talk with their western government counterparts, intergovernmental organizations and multinational corporate partners. – source: foodproductiondaily.com, 25/3/08

This is a direct parallel with the imperial development of "biosafety" programs for biotech in Africa.

Appendix A

Researchers believe that they may have uncovered the function of the appendix, which has long been thought to be superfluous: the organ may act as an incubator for beneficial bacteria that aid the body in digestion.

Writing in the *Journal of Theoretical Biology*, researchers from Duke University Medical School speculate that the appendix provides a reservoir of beneficial microbes so that the body can replenish its supply in case a disease such as cholera or amoebic dysentery causes the bacteria in the lower gut to be purged.

The researchers observed that the appendix is located just beneath the large intestine, in a spot that food and bacteria usually flow past in only one direction. This would be an ideal location for the hypothesized function.

According to the researchers, the dense populations found in modern cities make it easy for people to be re-exposed to digestive flora after losing them. But in earlier times a cholera epidemic might have devastated a whole region and necessitated an internal replenishing source. They noted that appendicitis is significantly less common in Third World countries, where epidemics of diseases targeting the digestive system are more common.

The researchers theorized that appendicitis may be a disease of affluence, triggered by an environment more sterile than that in which the body evolved.

Appendicitis occurs when the appendix becomes infected and inflamed. Appendicitis can lead to inflammation of the abdominal cavity, which is nearly always fatal if not treated.



DETAIL



KNITTED GI TRACT BY DR. JEANNIE ROSENBERG, SHOWING THE APPENDIX

Neither Food Nor Nutrition

Frozen Desserts

Cargill has developed a new functional system for the creation of frozen desserts and lollies with a chewy-creamy texture. The new system, called Lygomme FZ615, is a new combination of gums and stabilisers within Cargill Texturizing Solutions' portfolio.

According to the company, the functional system allows a water ice mixture to be combined with the texture and flavours of a regular jelly candy. It can be used for a variety of different product formats – from water ices on a stick, to sorbets. The result is described as a “smooth texture and warmer mouthfeel”. In addition, the Lygomme FZ 615 system is able to foam water ice at a very high overrun level – that is, the amount of air that can be included with an acceptable texture still being achieved.

While a few years ago target consumers were roughly divided into large groups – children versus adults – now there are much more sophisticated targets, such as frozen yoghurts, healthier products, and different levels of premium. As for the products enabled by Lygomme FZ 615, Cargill expects they will “surprise and delight both children and the young-at-heart”.

–*foodproductiondaily.com*, 27/3/08

Egg Beaters

Egg prices have increased in the past year as a result of higher costs for grain. This presents food formulators with a quandary, as eggs are important to provide structure and texture in a number of food categories.

Tucson, Arizona-based Gum Technologies is stepping up to the plate with the introduction of its Coyote Brand line of egg replacers. The company has developed three blends which it says can mean a reduction or elimination of eggs without compromising the sensory properties of the finished product, according to R&D chef Sarah Martin.

The blend intended for use in custards consists of carageenan and locust bean gum. The Dough Egg Replacer, meanwhile, for use in breads and sweet doughs, is a blend of konjac and soy lecithin, and the Baker's Egg Replacer mixes xanthan, guar and soy lecithin, and is said to “improve texture, cell structure and increase uniformity” in cakes and muffins and in cookies.

Usage levels for cakes and muffins range from 0.10% to 0.50 %, while the upper usage for cookies is 0.30 %.

–*source: foodproductiondaily.com*, 4/4/08

Cell phones may disorient bees

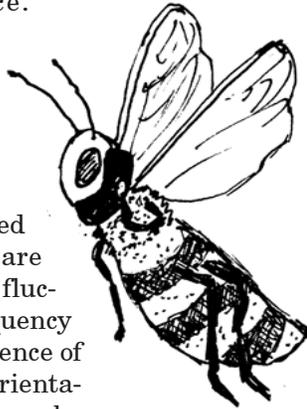
The research of Dr. Ulrich Warnke, University of Saarland, Germany, and others suggests that the orientation and navigation of Bees may be disturbed by man-made electric, magnetic and electromagnetic fields.

The integuments (outer membranes) of bees (and feathered birds) have semiconductor and piezoelectric functions. This means they are transducers of pulse modulated high frequency microwave-fields into an audio frequency range. Several constructions of the integument work like dielectric receptors of electromagnetic radiation in the microwave region.

Magnetite nanoparticles are found in the abdomen of bees. Magnetite is an excellent absorber of microwave radiation through the process of ferromagnetic resonance. Pulsed microwave energy absorbed by this process is first transduced into acoustic vibrations (magneto acoustic effect).

It has been demonstrated that free-flying honeybees are able to detect static intensity fluctuations and ultra low frequency magnetic fields. The consequence of these investigations is that orientation and navigation of bees may be disturbed by man-made technical communication fields.

– www.uni-saarland.de/fak8/warnke



“YOU SAY TO STAY
AWAY FROM
MICROWAVE
TOWERS, RIGHT?”

Sugar Beet Resistance

The increasing presence of GM crops in the US food chain has led to a growing ‘resistance movement’. Activists groups have filed a lawsuit in California calling for the USDA to review its approval of the GM sugar beet, while planting of Monsanto’s alfalfa, also genetically modified to resist Roundup, has been delayed after a major campaign against the crop in 2006 calling for a federal environmental review.

Now a total of 63 leading U.S. restaurant, food, beverage and candy companies – including such household names as McDonald’s, Campbell Soup, Kellogg, Kraft Foods, Sara Lee, PepsiCo, Wendy’s and Hershey’s – are the focus of a major Web-based campaign at www.DontPlantGMOBeets.org seeking to block the April 2008 planting of genetically modified RoundupReady sugar beets. The genetically modified sugar beet crop would be used to make the sugar contained in thou-

sands of the most widely consumed food products in the U.S., according to the Web site created by the Interfaith Center on Corporate Responsibility (ICCR) – a broad-based coalition of nearly 300 faith-based investors with over \$100 billion in invested capital.

ICCR is concerned about sugar beets and other genetically modified crops because of weak governmental review and oversight, and the lack of long-term, independent and peer-reviewed safety studies.

Sugar beets have been modified to insert a gene that makes the plant resistant to glyphosate, a toxic herbicide, sold under the trade name Roundup. At the request of Roundup pesticide maker Monsanto, the U.S. Environmental Protection Agency recently increased the allowable amount of glyphosate residues on sugar beet roots by a whopping 5,000%.

– ICCR press release, 4/3/08

Attack on the Eldest Brother

Farmers and Hawaiian activists who have unsuccessfully pushed for a state ban on genetically modified taro – a plant they liken to an ancestor – called on key lawmakers to give the proposal “a fair hearing” during the current legislative session. “This is a cultural issue,” said Walter Ritte of Molokai. “Our eldest brother, Haloa (taro), has been attacked genetically. We want to prevent any more genetic attacks on our family.”

Ritte, speaking next to potted taro on the grounds of Iolani Palace, where the Hawaiian kingdom was overthrown, joined about two dozen people to announce a three-day lobbying effort to get Senate Bill 958 passed. Last year, lawmakers put off a hearing on the measure, which would impose a 10-year moratorium on testing, cultivating and growing genetically engineered taro. The issue has pitted Hawaiians against scientists who have argued taro needs to be genetically enhanced to fight diseases.

The University of Hawaii plans to oppose the bill because it would violate academic freedom, said Kevin Kelly, the school system’s managing director of the Experimental Program to Stimulate Competitive Research-Hawaii. “We are concerned with the Legislature being able to legislate what you can and cannot study,” he said. Kelly said the university has no plans to conduct more genetic research of taro. In June, following months of protests from Hawaiians, the school turned over patents on three varieties of disease-resistant taro it had developed to help Samoan growers whose



crops were hard hit by a leaf blight in the 1990s. In a symbolic move, activists tore up copies of the patents to show taro cannot be owned. (see *RH* #239)

GMO opponent, Kauai taro farmer, Chris Kobayashi of Waioli Farm, said taro farmers disagree with GMO scientists who believe the industry will die out in 30 years without genetically engineering taro for sustainability. Kobayashi said, "There are other ways to ensure taro's longevity without changing the plant's integrity, such as improving growing techniques, soil conditions and reducing pests." She argues scientists should spend more time working to create environmentally safe pesticides to combat the problematic "apple snail," instead of manipulating the plant's genes.

"We can grow strong taro like this without genetically modifying it," said Big Island taro farmer Jerry Konanui. Konanui displayed a poster with pictures of what looked like a forest of gigantic taro leaves grown at a UH experimental farm site on land left fallow and allowed to grow rich with nutrients before planting. Konanui is a member of statewide taro caretaking organization, Onipaa Na Hui



GIANT TARO ROOT

Kalo. He said this is not a personal battle against science. He and other farmers work closely with scientists and researchers to improve Hawaii's farming industry, but Konanui said GMO is not the way to go on this one. "Hawaiians have been modifying taro naturally for more than a thousand years, with hand pollination techniques to create hundreds of varieties to grow in various adverse conditions," said Konanui. "Genetic modification isn't needed, and tampers with the Native Hawaiians' culturally sacred taro or Kalo."

The morning consisted of a march from the Hawaii SEED campsite near the Iolani Palace gazebo to the foyer of the state legislature. Speaking to the demonstrators before the march, organizer Walter Ritte said, "We are not being treated fairly in [this] building... Today is a learning experience. Sometimes we have to raise our voices." Lanai resident, woodcarver and taro grower Vince Kauali said the driving force behind his participation was the historical significance of taro, "When the ocean was fat, and the land was so rich that there was food there all the time, times were good. We have to remember the time before the fatness of the land was squeezed into the wallets of a few."

—various sources, *Hawaii*, 16 / 1 / 08, via *GENET News*

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