



# THE RAM'S HORN

A MONTHLY NEWSLETTER OF FOOD SYSTEM ANALYSIS

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## The Disappearance of 'Public'

by Brewster Kneen

Over the holidays we drove to Connecticut to visit my sister and extended family. Driving through New England I was struck, once again, by the 'Greens' or market squares which still exist in so many of the colonial towns. Once upon a time – and still, in a great many villages and towns around the world – public life took place in and revolved around the village square or Green. The market took place there; so did various festivals and celebrations – and the politics of the community, of course. Public life took place in a public space. Nowadays we do most of our shopping in the publicly accessible spaces of privately owned commercial shopping centres. In these spaces, however, the public are 'consumers,' not citizens.

The village greens also served as parks. We still have parks, but although they are public and accessible to all, at least formally, they are not the sites of political life and public commerce. Permits from some public agency are almost always required for any kind of parade or demonstration, thus calling into question their 'public' nature.

I have memories of sleeping undisturbed in such places while hitch-hiking around the southern USA. I also have memories of listening to the popular Methodist preacher Donald Soper, who held forth in Hyde Park, London, every Sunday, often in a grand debate with the gathered crowd. Can you imagine such an event taking place in your local shopping mall, which in many towns and cities is all there is for a village square? (Cathleen was one of the Ottawa Raging Grannies – a peace & justice action group – who were ushered out of a local mall shortly before Christmas for committing the illegal acts of singing anti-war songs and distributing information about non-violent toys to an appreciative audience of shoppers.)

Of course politics have always been a characteristic of the British pubs ('public houses') and French cafés. The city of Curitiba, Brazil has structured itself so that political life can take place on the main street. When I visited there many years ago, I was told that the politicians each had their favourite coffee bar where they could be found at certain times of the day so that the public could talk with them informally. The coffee bars were scattered the length of the main street, which had been closed to traffic – except human – and covered with terrazzo. A very inviting public space.



MALL SECURITY CONFRONTS GRANNIES IN FULL COSTUME

Compare this scene with Ottawa today, where bureaucrats, to say nothing of politicians, are not available to the public except by appointment (perhaps) and are housed in 'gated' offices, protected from the public they are supposed to serve, and providing us less and less information. The civil service is under the heavy hand of the Prime Minister's Office, and only their union, still called the Public Service Alliance, keeps alive the original idea of service to the public, not the politicians.

'Public' has all but disappeared. Not quite the way political opposition critics, union activists and social justice advocates were 'disappeared' during the years of Latin American military dictatorships not so long ago, and not voluntarily, but rather it has surreptitiously been 'disappeared' by neo-liberals in their quest to privatize and commodify everything. A strong sense of public and strong public institutions stands in the way of private greed and corporate profit.

... continued next page

January 2008  
# 252

It's a perverse and corrupt government that spends public money to lobby for its partisan legislation. The federal government spent \$1.2 million on advertising for its Wheat Board/barley 'plebiscite' earlier this year. While spending that much on propaganda in their attempt to remove barley from Canadian Wheat Board jurisdiction, the government put a gag order of the CWB prohibiting the CWB from explaining its point of view. In addition there was a lot of money spent by individual Conservative members of Parliament promoting the government's "ideological crusade" as it was described by NDP MP Pat Martin who obtained the information under an Access to Information request.

—source: WP, 6/12/07

The primary beneficiaries of this government corruption were the daily and weekly newspapers and farm press, and radio—a clear attempt to buy editorial support.

Since The Ram's Horn is supposed to focus on food systems, I got to thinking about the better-known public markets (not to be confused with farmers' markets) in Canada: Granville Island in Vancouver, the St. Lawrence Market in Toronto and Byward market in Ottawa. Each of these provide examples of public and private institutions and spaces that can lead to interesting reflections on the nature and value of public. The question of who actually owns these markets, or at least the land they are on, is not a simple one, nor is the question of how they are managed and who makes up the rules. How public are these places and who is the public that one finds there?

Granville Island is a tourist as well as local mecca for lovers of the best in foods, arts and crafts. It is also home to a cement plant and a major school of art, boatbuilders, ship chandlers, and a brewery. The Public (food) Market itself, always crowded, is really 'over the top' with its number and variety of vendors. But in what sense is it public, other than being open to the public? Most of the vendors are commercial, carrying produce and foods from anywhere and everywhere, not what they have grown themselves. (There is a special weekly farmers' market which is what it says it is.) Nevertheless, Granville Island is an interesting example of various forms of 'public.'

The 35 acre island the Market sits on was dredged up from the harbour in the 19<sup>th</sup> century. In 1915 the newly formed Vancouver Harbour Commission (a public agency) approved a reclamation project for the Island that made it a significant industrial area managed by a government agency collecting rents from private

businesses. By the 1950s the older industries were in decline and the space was in need of a new life, but it was 1972 before the redevelopment of Granville Island was initiated by the federal government to create, foster and maintain a unique, very public space in the heart of Vancouver. In the same year, the administration, management and control of the revitalization of Granville Island was transferred from the Harbour Commission to the Canada Mortgage and Housing Corporation (CMHC), a crown (government) corporation. Today, Granville Island is administered by The Granville Island Trust, an advisory body to CMHC's Granville Island Office appointed by the Minister responsible for CMHC. The Board of Trustees is composed of representatives from Granville Island, local area residents and the City of Vancouver.

The CMHC is itself an interesting example of a government agency acting specifically in the public interest – the sort of agency that Canada's current government is determined to do away with. The federal government created the Canada Mortgage and Housing Corporation in 1946 to house returning war veterans and to lead the nation's housing programs. Toward the end of the 1940s, the federal government embarked on a program of much-needed social and rental housing, creating a federal-provincial public housing program for low-income families, with costs and subsidies shared 75% by the federal government and 25% by the province. Affordable housing, supported by the public out of general tax revenue, meant that people on a low income could afford both food and housing.

Between 1973 and 1982, the federal government invested heavily in Granville Island, including the assumption of the Harbour Board's debt. Since 1983, however, Granville Island has been financially self-sustaining, with funding for capital improvements and operations covered by revenues from its tenants, which are from the public, private and non-profit sectors.

The Market, like the whole little island, is hugely successful as a public space accommodating a wide variety of non-profit activities and institutions along with many small private businesses.

Clearly, Granville Island is a good example of a 'public good' (space and facilities) provided – or one might say 'owned' – by the public through a non-profit crown corporation with direct government funding. This does not, however, make it the kind of public space that the village greens and town squares have provided. One does not go to Granville Island or its Public Market for political debates, however much political conversations might occur between private individuals over lunch or a beer there. — [www.granvilleisland.com/en/island\\_info](http://www.granvilleisland.com/en/island_info), [www.cmhc-schl.gc.ca/en/corp/about/](http://www.cmhc-schl.gc.ca/en/corp/about/)

"Rarely do we stop to consider who owns and manages publicly-accessible spaces (and for what reasons), but property ownership is a powerful tool in the regulation of space and, thereby, of the public."

– *The People's Property Power, Politics, and the Public*, Lynn Staehjeli and Don Mitchell, Routledge, 2008

## "Eau De Source Public"

*Tap water may be more 'private' than you think.*

In an increasing number of cities, the public is being encouraged to drink tap water rather than purchase bottled water – not to improve health but to reduce garbage. Chicago has implemented a five cent tax on bottled water sales to discourage consumers from the product, and last year San Francisco announced a ban on the city's departments using money to buy bottled water, while New York officials are urging consumption of tap water to cut down on packaging waste.

Bottled water sales are set to outgrow the once dominant carbonated beverage segment within two years. If current market growth continues, global consumption of the product is expected to grow to 251 billion litres by 2011 from 187 billion litres in 2006. This potential is coming in part from growing innovation within the bottled water market, particular for "added-value" waters that claim to offer nutritional or cosmetic benefits.

The industry unsurprisingly opposes the environmental calls to cut down on bottled water consumption to reduce packaging waste.

– *Foodproductiondaily.com, 07/01/08*

## Product of Canada – or of nature?

The label may say 'Product of Canada' but what that really means is that 51% of the 'value' of the product comes from Canada. These days, that could mean just the packaging. So when you purchase bottled water, do you know where it really came from? And what is being sold, the manufactured plastic bottle or the water, or both? If it is the water, then one has to ask, how did the bottler come to own the water, since taking ownership – commodifying – is prerequisite to being able to sell the commodity product? If we say that water as such cannot be owned, then the product being sold must belong to – but not owned – by the public. In which case the bottler is selling something stolen from the public to whom it is being sold!

## Political meltdown affects food industry

Anglo-Dutch food group Unilever is facing disruptions to its tea supplies from Kenya, after looters in one of country's major tea-growing areas caused workers to flee and led to the deaths of eight of the firm's employees. . . . The company had already ceased normal operations and is now moving people to safer locations.



Kenya is the world's third-largest exporter of tea. Tea auctions in Mombasa have been suspended since rioting broke out following presidential elections in the country on 27 December. Major roads leading to Mombasa, the country's second city and the region's key port, have been blockaded and there is also a fuel shortage in many places.

Transporting goods is also made difficult as firms are unwilling to risk damage to vehicles and workers caused by rioters.

Unilever's Kenya estates produce around 30,000 tons of black tea each year, accounting for 10 per cent of national production. The firm also sources from other locations, mainly using Kenyan tea in blends.

Unlike Kenya's other major export, fresh fruit and vegetables, tea is not perishable so supplies can be held at source for some time. Kenya-grown fruit and vegetables seem to be reaching the UK however, with no reported problems with air freight. Kenya produces significant quantities of green beans as well as other vegetables such as aubergines, chillies and prepared salads.

– *Foodproductiondaily.com, 07/01/2008*

## Analysis from Eldoret, Kenya:

"My opinion, which could be wrong, is that we have a situation where the old generation of rich and powerful Kenyans is seeking to retain power while a new generation is seeking to get it from them. The poor and powerless are simply like the grass that suffers when two bulls fight. I do not see tribalism in it at all. The rich and powerful are in all ethnic communities and so are the poor. ... I have a testimony that tribalism is fake because my help in this very difficult season has come from people outside my tribe." – *email from a friend*

## From animal to machine: the next step, cloned meat

"The U.S. Food and Drug Administration (FDA) started looking at the issue of allowing meat from animal clones and their offspring into the human food chain issue in the late '90s according to Dr. Larisa Rudenko, senior biotechnology advisor to the FDA's Center for Veterinary Science. The FDA started by asking the National Academy of Sciences for their concerns about eating cloned animals and their offspring. When that report came back in 2002 citing no concerns, but also citing an absence of research, Rudenko said the FDA reviewed the results of *all available scientific studies* in a focused way. 'The method that we used was to look first at the health of the animals and make sure that they were healthy, that *they didn't differ in any particular way* from animals generated via other assisted reproductive technologies. And then we looked at the composition of the food, both meat and milk, that came from clones or their sexually reproduced offspring and found that those *didn't differ materially* in any way from meat or milk from conventionally produced animals.'

"With safety concerns to humans and animals alike resolved, Rudenko said cloning is simply the next step in animal husbandry. 'We believe that livestock breeders are looking for ways to improve the genetics of their herds in ways that are efficient and effective and come *at minimal cost to the animals*,' said Rudenko. 'Starting with artificial insemination, then followed by invitro fertilization, embryo transfer, embryo splitting, these are all ways to introduce naturally occurring desirable traits into the herd more rapidly,' she added. 'And we feel this is *just another tool* that breeders will have *in their toolbox*.'

"Rudenko is quick to point out animal clones are certainly not genetically modified organisms. 'They're not genetically engineered at all - there are no genes added,' she emphasized. 'They're *simply identical twins separated in time*.' And that's why Rudenko said FDA has no plans to require labels on meat and dairy products from animal clones or their offspring. 'You know, the Agency is only allowed to require labels if there's a material difference in any particular food,' Rudenko said." - *brownfieldnetwork.com*, 2/1/07 (emphasis added throughout)

### Safe as Milk?

"The Food and Drug Administration's assessment that food from cloned animals is safe to eat is a victory for biotech companies and a

loss for everyone else. Like many decisions on the cutting edge of agricultural technology, it was hurried along in a way that is more sensitive to political and economic pressure than to the long-term welfare of animals, humans and the world they inhabit. Asking whether cloned meat and milk are safe is not even the right question. The right question is, why clone at all?

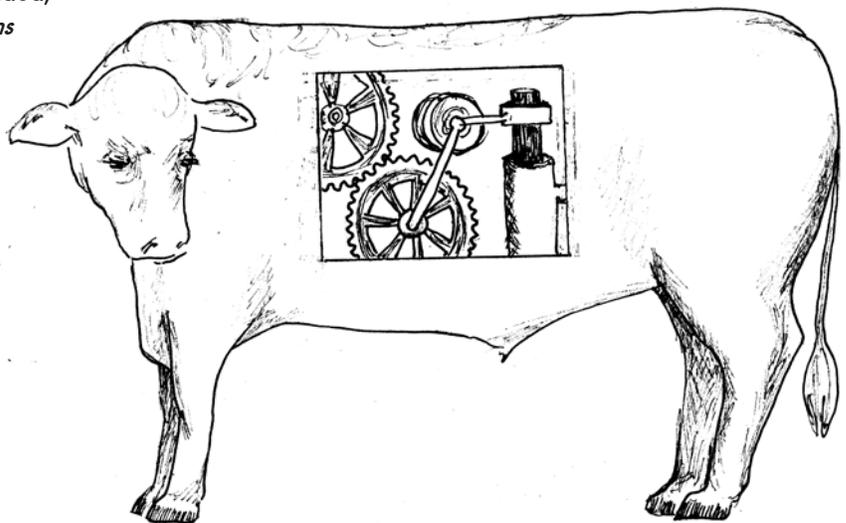
"Approving food from cloned animals will create another food-labeling nightmare and the same aggressive litigation that usually blocks any attempt to tell consumers where their food comes from.

"But cloning has much worse consequences. It marks a revolutionary shift - from the relative randomness of sexual reproduction to the apparent uniformity of asexual reproduction. Because cloning creates genetically identical animals, it will shrink the gene pool on which agriculture rests, and any drastic shrinkage in genetic diversity creates enormous health risks for a species.

"Cloning isn't just a matter for the FDA to decide. It is up to us as a society to decide as well. We should be asking much broader questions than the FDA is able to. Who will cloning benefit? What will it do to the health of the animals themselves?

"But the most important question of all may be this one: Are we willing to judge the suitability of new technologies in ways that fully address their ethical and biological complexities? Or are we doomed to give in to politics and the bottom line?"  
- *The New York Times*, 6/1/07

"A recent Gallup Poll reported that more than 60 percent of Americans believe that it is immoral to clone animals, while the Pew Initiative on Food and Biotechnology found that a similar percentage say that, despite FDA approval, they won't buy milk from cloned animals. In its risk assessment of cloned food, the FDA claims to have evaluated

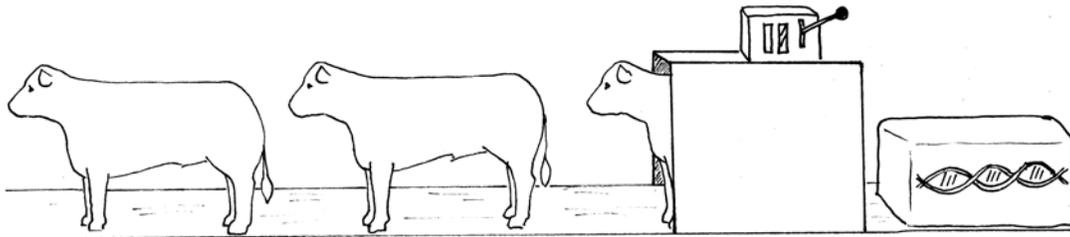


extensive peer reviewed safety studies to support its conclusion, yet a recent report issued by the Center for Food Safety, *Not Ready for Prime Time*, shows the assessment only references three peer-reviewed food safety studies, all of which focus on the narrow issue of milk from cloned cows. What is even more disturbing is that these studies were partially funded by the same biotech firms that produce clones for profit.”  
 – *The Center for Food Safety, USA 14/12/07*

If we don't much care for where the path livestock breeding has headed down— whether for 'scientific' or ethical or political reasons – then perhaps we should revisit our acceptance of all the 'breeding technologies'

that have become standard practice in the dairy industry. The application of 'technologies' designed to increase 'efficiency' and 'productivity' has been essential in enabling fewer and larger production units (farms) dependent on ever bigger machinery, more and more synthetic fertilizer, agrottoxins and genetically engineered crops.

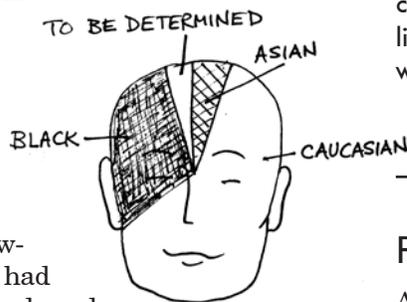
In other words, there is a single, consistent ideology that has driven the development of industrial agricultural production. If we don't like what it has produced, then it is time to ditch the whole ideology of efficiency, productivity and competitiveness.



## Hey, Nobody's Perfect

In our September 2007 issue (#249) we described complexity and diversity as the 'rules of the game' for biology in contrast to the simplistic ideology of biotechnology, at least in its early days. For many years, James Watson has been one of the most vocal advocates of a simplistic view of life and a very vocal racist and sexist bigot, going back fifty years to his pirating of the work of Rosalind Franklin which made it possible for Watson, together with Francis Crick, to describe the molecular basis of DNA.

Watson has not been alone in his arrogance, but at least people like Craig Venter have not given vent to such bigotry. Now, following Venter, Watson has had his own genome sequenced, and the joke is on him.



"An analysis of Watson's genome shows that 16% of his genes are likely to have come from a black ancestor of African descent. By contrast, most people of European descent would have no more than 1%. The study was made possible when he allowed his genome – the map of all his genes – to be published on the internet in the interests of science. 'This level is what you would expect in someone who had a great-grandparent who was African,' said Kari Stefansson of

deCODE Genetics, whose company carried out the analysis. . . Watson provoked an outcry earlier last year when he suggested black people were genetically less intelligent than whites. The backlash against Watson forced him to step down as chancellor of Cold Spring Harbor Laboratory, New York state, after 39 years at the helm. He had said he was 'inherently gloomy about the prospects for Africa' because 'all our social policies are based on the fact that their intelligence is the same as ours – whereas all the testing says not really.' The analysis by deCODE Genetics, an Icelandic company, also shows a further 9% of Watson's genes are likely to have come from an ancestor of Asian descent. Watson was not available for comment."

–*The Sunday Times, UK, 9/12/07*

## Resources on Agrofuels

A resource page on the **GRAIN website** <[www.grain.org/agrofuels/](http://www.grain.org/agrofuels/)> will provide a continuing resource for documents, links and updates on the issues around agrofuels, including the excellent Pastapur statement from India.

**La Soja Mata** (Soy kills) website <[www.lasojamata.org/?q=about](http://www.lasojamata.org/?q=about)> provides background, analysis and support for resistance to the advance of monoculture GM soy in Latin America and information about the direct impacts of large scale monocultures on people's lives and the environment.

## The Depressing Section

### Monsanto collects from farmers

In November, the Federal Court of Canada issued a judgment against Mr. Paul Beneteau of Amherstburg, Ontario for patent infringement pertaining to the Roundup Ready gene in soybeans.

Chief Justice Lutfy determined that Mr. Beneteau had infringed certain claims of Monsanto's patent by growing, harvesting and selling 55 acres of soybeans which he "knew contained genes and cells as claimed in the said claims of the Patent." The Court ordered Mr. Beneteau to pay damages to Monsanto fixed at \$8,800, which is an award to Monsanto of \$160.00 per acre on the 55 acres in question.

This judgment follows an earlier successful court judgment against Mr. Eddie Wouters of Forest, Ontario, in which the Court awarded Monsanto over \$107,000 or \$274.00 per acre on the 392 acres of Roundup Ready soybeans planted by Mr. Wouters without Monsanto's permission.

Monsanto's Trish Jordan pronounced the usual corporate line: "We have a duty to protect our intellectual property . . . It is through the use of patents that we recoup our research investments, which allows us to continue to invest significant dollars in our research pipeline so that Canadian corn, soybean and canola growers will continue to have access to beneficial technologies in the future."

– source: *Monsanto Canada Press Release 11/12/07*

### Yet another Monsanto front group

*With support from industry [our italics]*, a small group of "dairy farmer leaders" met in Chicago in December to create AFACT – American Farmers for the Advancement and Conservation of Technology. "We support the choice of producers to use technologies," commented dairy producer Greg Jans, one of the industry organizers of the meeting. "We thought, as producers, this would probably be more effective if it actually came from a producer-led effort, and not industry-led," said Jans "It is our intent to raise our voice on behalf of producers to protect our interests and the interests of consumers."

AFACT was formed because producers are finding fewer markets that will take milk from cows given recombinant bovine somatotropin, or rBST. Organizers fear that if rBST is taken away, "various organizations will take away producer animal housing and handling rights, use of antibiotics, synchronization tech-

nologies, feed additives and GMO crops".

– source: *Minnesota Farm Guide, 20/12/07*

Maybe this is really good news. If, as it appears, the industry is losing the rBST battle, maybe the whole sordid panoply of livestock production technologies will go as well.

### Another hidden subsidy for Monsanto

On Sep 12, 2007, the Federal Crop Insurance Corporation Board of Directors approved a Biotech Yield Endorsement (BYE) pilot program. The biotech yield endorsement will allow the corn producer to receive a premium rate discount on non-irrigated corn for grain planted to hybrid varieties of corn that contain Monsanto triple-stack genetics. "Monsanto has demonstrated that its specific triple-stack genetic traits, when used in combination, provide lower yield risk as compared to non-traited hybrids." The BYE pilot program's premium rate discount will be available in Illinois, Indiana, Iowa, and Minnesota beginning with the 2008 or 2009 crop year, depending on the resolution of implementation issues. – *USDA, Risk Management Agency*

### No benefit to consumers, just shareholders

What Monsanto has in mind: a yield-boosting, improved version of its Roundup Ready soybeans; and SmartStax corn that combines eight genes for insect and herbicide resistance by the end of the decade. Beyond this, Monsanto intends to develop the first drought-tolerant corn seed; soybeans that withstand dicamba weedkiller; and pest-killing soybeans for Brazil that would be the first biotech crop developed exclusively for a country other than the United States.

– *St. Louis Post-Dispatch, 4/1/08*

Monsanto more than doubled first-quarter profit after demand for food and biofuels boosted corn plantings in South America. Latin American seed sales, higher prices for Roundup and early 2008 orders from U.S. farmers helped boost first-quarter sales 36% to \$2.1 billion. Gross profit rose to 50 percent of sales from 44% a year earlier, the company said.

Gross profit from farm chemicals more than doubled to \$560 million as Roundup demand rose 20% and prices exceeded the historical range of \$11 to \$13 a gallon. Roundup gross profit will exceed \$1 billion this year. Gross profit from seeds and genetic-technology licenses rose 19 percent to \$495 million, led by corn. Monsanto doubled its gross profit in three years.

– *Bloomberg 3/1/08*

## Supreme Court Won't Hear Case Against Monsanto

Canadian farmers Larry Hoffman and Dale Beaudoin launched their case against Monsanto Canada and Bayer Crop Science in January 2002. They claimed that the organic industry has been seriously harmed as a result of genetically modified (GM) canola created by the companies. They sought compensation for losing canola as a crop due to genetic contamination and attempted to stop the production of genetically engineered wheat for the same reason.

Although there are two appellants named in the case, the farmers were represented and financed by the Saskatchewan Organic Directorate (SOD) and its organic agriculture protection fund. In order to launch the suit, SOD first needed to acquire class-action certification. Saskatchewan's Court of Queen's Bench denied it, saying the group failed to meet any of the required criteria. SOD appealed but in May 2007 the Court of Appeal upheld the previous ruling, describing SOD's case as "replete with weakness in every respect." SOD then filed papers for leave to appeal to the Supreme Court. On Dec 13, 2007, the Supreme Court of Canada denied SOD's application for Leave to Appeal.

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## On the Other Hand

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### Rural Movement Attacks Syngenta

Hundreds of activists broke into a Swiss-owned Syngenta agrochemical plant in the state of Sao Paulo, Brazil, expelling 50 employees and shutting down production, a company spokeswoman told Reuters. Members of the Landless Rural Workers' Movement (MST) and Via Campesina also destroyed genetically-modified corn and soy seedlings at a Syngenta farm in the northeastern state of Ceara, the groups said. The groups demand Syngenta leave Brazil, accusing the company of attacking landless workers and violating environmental laws.

—Reuters, 10/12/07

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## More Corporate Food News

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### Big Meat

Can you picture 1 million pounds of ground beef? We cannot, but this is the mountain of ground beef (from cull cows primarily) that Cargill recalled on one occasion in November due to possible E.coli contamination. The meat came from a single plant in Pennsylvania

but was distributed in ten states across the country. In October Cargill also recalled more than 840,000 pounds of ground beef patties.

—ST-4/11/07

## Commodity Trader Moves Into Agro-fuels

Louis Dreyfus is a little-known corporate player in the global agricultural commodity trade. It began trading in grain between Alsace in France and Basel, Switzerland around 1851. While it expanded geographically, it stuck to grain trading, making early use of Information Technology, in the form of cable, and transportation advances in shipping and rail. After the Second World War the company was stuck in grain trading while the commodities world was rapidly changing. Companies like Cargill and Bunge were investing heavily in processing and refining. Today, while Louis Dreyfus Commodities remains one of the world's major grain traders in a wide variety of commodities, it has also invested heavily in shipping, property development, energy and telecommunications. Since 2000 the company has been increasingly involved in agrofuels. It now operates the largest biodiesel plant in the USA, processing nearly 50 million bushels of soybeans a year.

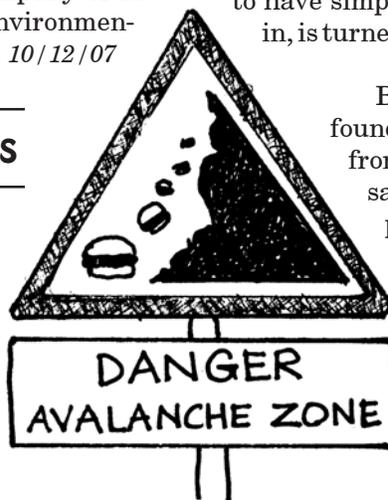
The latest expansion in this area is a partnership with Mitsui of Japan which will own 40% of a \$120 million canola crushing plant Dreyfus will build next year in Yorkton, Saskatchewan. The plant is scheduled to turn out 350,000 tonnes of canola oil and 500,000 tonnes of canola meal. Mitsui has been one of Dreyfus' largest customers for canola from both Canada and Australia.

—G&M, 8/12/07

## Termites, Bakers, and Ethanol Makers

With their prodigious appetite for wood, termites ought to have simple enough digestive systems: wood goes in, is turned to food, and the remnants are excreted.

But the devil is in the detail. The bacteria found in the guts of *Nasutitermes* termites from Costa Rica use hundreds, perhaps thousands, of enzymes to break down tough plant matter into sugar. For those trying to use similar processes to make biofuel out of woodchips, termites have some lessons to offer. "We're laying out the tools termites use to digest wood," says Jared Leadbetter of the California Institute of Technology in Pasadena.



Artificial cocktails of enzymes have so far had only limited success in converting woodchips to ethanol biofuel, and the new finding suggests why. Leadbetter and colleagues sampled the hindgut contents of 165 termites and sequenced the genomes of everything inside. They found several hundred species of symbiotic bacteria which contained genes involved in digesting cellulose, lignin and xylan - the three major components of wood.

To break down just one of these components takes at least a dozen enzymes, Leadbetter says. Bound together in wood they are far tougher, requiring enzymes to work in concert. *– New Scientist 21/11/07*

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Speciality enzyme manufacturer Biocatalysts have developed a xylanase enzyme for bakery applications made without the use of genetic modification.

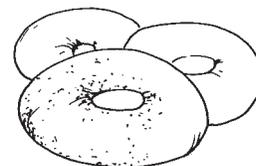
Xylanase, obtained from *Bacillus subtilis* strains, improve bread's volume and crumb structure by maximising gluten performance and solubilising polysaccharides in the wheat cell wall. It also extends shelf life in fresh, frozen and retarded doughs.

The company identified a particular market need for non-GM products in the bakery sector, where GM enzymes are not well received. Marketing manager

Caroline West said: "As a policy most of our enzymes are non-GM and where they are GM we try to offer a non-GMO alternative and people can then make the best choice for them."

Biocatalysts' non-GM Depol 762P is made using deep tank fermentation with a wild-type organism and is flexible, making it suitable for a variety of bakery products, including acidic type bread improvers. The GM alternative is D454P is produced from a self cloned bacillus.

The demand for non-GM products has grown in recent years, as health-conscious consumers increasingly opt for clean label products. West said that while consumers do not like GM products, food processors benefit from the lower prices of GM enzymes. "The non-GMO enzyme is slightly more expensive than the GM alternative. However the small dosage amounts – 40 to 120ppm per weight of flour – used means that it very rarely impacts negatively on the overall cost price of the end product. Plus having clean labels is a huge plus to the manufacturer." *– Food Navigator, France 06/12/07*



## THE RAM'S HORN

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