

GE Rice Update: Organic Rice Surges While GE Rice Falters

By Alex Jack

Following the burial of the world's first harvest of genetically engineered rice this spring in Texas, the introduction of new GE rice has been derailed—for the moment. At the same time, a downturn in the U.S. rice industry has made organic rice more attractive than ever.

Aventis CropScience, the manufacturer, destroyed nearly 5 million pounds of LibertyLink rice, the world's first GE rice grown for commercial production, in May because it was worried that the herbicide-resistant rice was not approved in Japan and other countries. An even more compelling reason was Aventis's fear that LibertyLink could be the target of lawsuits akin to those levied against its StarLink corn that has contaminated the U.S. corn supply.

Following the GE rice disaster, the large Franco-German biotech company decided to get out of the GE food business altogether and inked a deal to sell its CropScience division to Bayer, the German pharmaceutical giant. Bayer will assume liabilities of \$1.7 billion for the StarLink corn disaster. It has not indicated whether it will reintroduce LibertyLink rice, but chances are it will try again.

GE rice research continues uninterrupted in other parts of the U.S., and China announced the development of several new GE experimental rice varieties this summer. The biotech industry continues to push GE Golden Rice as its poster crop, taking out full-page ads in TV Guide, the New York Times, and other publications as part of a \$250 million campaign to sell GE food to the American public. A United Nations panel of experts issued a glowing report on the benefits of biotechnology for the world's poor, even as indigenous farmers around the world continued to rally against GE rice and other crops.

In Congress, the first vote on GE issues was taken this summer. The House of Representatives defeated an amendment introduced by Congressman Dennis J. Kucinich (D., Ohio and a contributor to Amberwaves) and Pete DeFazio (D., Oregon) for a 1-year moratorium on GE salmon by a vote of 279 to 145. Though defeated by a 2-1 margin, GE opponents were elated that such a large bloc coalesced so quickly against the powerful biotech lobby, including 87 members of Congress who had not previously co-sponsored Rep. Kucinich's bill to require mandatory labeling of GE foods. The latest ABC-TV poll reported that 93% of the American public want GE foods to be labeled, 57% would be less likely to buy them, and nearly two-thirds of women feel they are unsafe.

Dangers of LibertyLink

Amberwaves hailed Aventis's decision to destroy the first harvest of LibertyLink rice. In

a press release, the grassroots organization called for a moratorium on growing GE rice, wheat, and other grains and called upon America's major food producers to pledge not to use GE staples in their products, pending comprehensive studies of the impact of GE grains on human health and the environment. The press release was widely distributed on the Internet, including web sites that serve the rice and biotechnology industries.

In its statement, Amberwaves declared that GE rice threatens to contaminate conventional and organic crops, release potentially harmful organisms into the environment, imperil the livelihood of farmers and their families, and endanger hundreds of species of birds, mammals, and other wildlife that live in rice fields.

While approved for human consumption by the U.S. Food and Drug Administration (FDA), LibertyLink rice was treated with glufosinate (which carries the trade name Liberty), an herbicide that has not been approved yet for rice (though it has been approved for corn, cotton, and rapeseed). Aventis said that it could have kept the rice in storage pending approval by the Environmental Protection Agency (EPA), but the prospect of foreign liability caused it to withhold the rice. On May 21, a caravan of 95 tractor-trailer trucks, containing 2272 metric tons, started hauling the rice to a landfill in Alvin, outside of Houston. Altogether about 40 million servings of modified rice were deep-sixed.

"While Aventis made the right decision not to release the crop, the LibertyLink debacle in Texas raises serious environmental questions," Amberwaves noted. "Like nuclear waste, contaminated crops must be disposed of properly."

Following the production of the first GE rice in America, Amberwaves commissioned the first independent scientific study of LibertyLink rice. Dr. Joe Cummins, a geneticist in Ontario, Canada who has written extensively on biotechnology, reported that the GE rice was recklessly approved, even though the U.S. government knew that it would contaminate surrounding plants and that glufosinate causes birth defects in experimental animals, including brain defects leading to behavioral changes, cleft lip and skeletal defects, miscarriage, and infertility.

In Brazil, LibertyLink rice has been banned because of its harmful effects on the environment.

GE Research Intensifies

Across the nation and around the world, the research and development of GE rice continues:

- The University of Arkansas announced in June that it had received a patent on a high-yielding long-grain rice variety known as Wells. University officials said that they would license the novel hybrid strain to biotech companies that wanted to produce new GE varieties. Arkansas produces more than 40% of the rice in the U.S. on about 1.5 million

acres.

- The Japanese Ministry of Agriculture announced this spring that it had approved three varieties of Monsanto's herbicide-tolerant rice. The next step is a mandatory food safety assessment before it can be commercially released.
- The U.S. Public Interest Research Groups (PIRGs), a consumer's advocacy organization, reported that rice was among the top crops in the U.S. to be tested by biotech companies and universities. The five principal foods field tested between 1987 and 2000 were corn, potato, soybeans, tomato, and cotton, followed by melons and squash, tobacco, rapeseed, wheat, beets, and rice.
- China announced in July that it had developed a "super rice" that could yield double the harvest of normal grain by 2008. The high yield variety is made by inserting a corn gene into hybrid rice. In southeastern Zhejiang Province, another group of Chinese scientists announced that they were developing a GE rice resistant to the pyralid moth, a major pest. On Hainan Island in southern China, a third research team modified tomatoes, eggplants, and hot pepper to grow with seawater and said that rice irrigated with salt water would be their next target.

Contamination Spreads

Over the summer, the contamination of conventional and organic crops continued to spread. StarLink corn, the unapproved GE corn that inadvertently got into the American food supply last year, has turned up in both yellow and white corn varieties. Some organic certification agencies warned producers and consumers that they could no longer certify organic, some food manufacturers dropped corn or switched to other grains in their products, and Australia announced that it would no longer import organic corn from the U.S.

In Canada, GE contamination of rapeseed has devastated the natural and organic canola oil market, and soybean farmers throughout North America report an increase in contamination as well. As noted last issue, an independent laboratory investigation this spring, sponsored by the Wall Street Journal, found that 80% of natural foods products containing corn or soy and labeled "GE Free" were contaminated. In a lead front-page article, the New York Times this summer reported that GE contamination was so widespread that it would be virtually impossible to regulate biotech crops. "The hope of the industry is that over time the market is so flooded [with GEOs] that there's nothing you can do about it. You just sort of surrender," Don Westfall, a food industry consultant, told the Toronto Star.

Limits on Biotechnology

On the positive side, the main United Nations food standards organization agreed to draw up international guidelines to regulate the safety of GE foods on supermarket shelves, including testing for allergic reactions. (The EPA's science advisory panel this summer

urged that the ban on StarLink corn in human food be maintained, saying there was not enough evidence to establish if it caused allergic reactions.) The UN also brokered a landmark agreement to preserve the world's diversity of agricultural crops by requiring plant developers to make mandatory payments in return for access to public seed banks. The agreement emphasized the need for farmers to freely save, use, exchange, and sell farm-saved seeds. A bitterly contested issue related to intellectual property rights (and biopiracy) was put off until an FAO conference in November.

On this front, the U.S. Patent and Trademark Office rejected thirteen of sixteen claims for a controversial patent on Basmati rice. RiceTec, a Texas company, tried to patent the grain's genetic structure and secure a world monopoly on sales, but was challenged by the government of India which held that basmati rice has been grown in Asia for thousands of years.

As global opposition to GE food and the appropriation of native plants mounted, the developers of GE Golden Rice have had trouble getting funding. Earlier this year, critics discovered that Golden Rice would provide only a fraction of the vitamin A it was designed to supply to deficient children and that a mother or child would have to eat several kilos a day to get the RDA. Co-inventor Peter Beyer came to the Biotechnology Industry Organization Conference in San Diego in June to seek private investors and approached the Bill and Melinda Gates Foundation. As thousands of demonstrators took to the streets to protest GE foods, Brian Tokar, a professor of social policy and member of Biojustice, was widely quoted in the press, "The purported benefits of Golden Rice are completely fabricated."

Frances Moore Lappé, author of *Diet for a Small Planet*, weighed in against biotechnology with a stirring essay in the *Los Angeles Times*. "Hunger is not caused by a scarcity of food but by a scarcity of democracy. Thus it can never be solved by new technologies, even if they were to be proved 'safe.' It can only be solved as citizens build democracies in which government is accountable to them, not private corporate entities."

Organic Rice Initiatives

As the GE debate swirled, rice growers found themselves foundering. "The U.S. rice industry is fighting for its life, with farmers, millers, and the communities they live in, all on the front line," the U.S. Rice Federation (USA Rice) stated in an early summer press release. Though rice consumption has risen sharply in recent years following healthier national guidelines, one of every five rice mills has either closed, gone into bankruptcy, or is on the market.

Over the summer, rice has become a key foreign policy issue. 2.7 million metric tons, about half the U.S. crop, is exported each year, and about 20% is shipped abroad as food aid. In the past, the U.S. State Department has supported sending "value added" (milled or polished white rice), but there is now a move afoot to allow unprocessed rice (known as "rough rice") to be sent. USA Rice, which represents 80% of domestic rice growers and nearly all millers, contends that sending rough rice overseas costs milling jobs at

home and subsidizes foreign rice processing facilities.

In Texas and Louisiana, milling has dropped to 20-30% of capacity, and normally conservative politicians are urging the State Department to relax its ban on trading with Cuba, America's largest rice partner before an embargo on the Castro regime 40 years ago.

In California, meanwhile, the energy crisis has sent the cost of irrigating rice soaring and caused farmers to seek new sources of revenue. In the Sacramento Valley, plans are underway to build a large factory to process rice straw, which is increasingly being used in the construction industry as a low-cost, energy-efficient building material. In Fairfield, NRE World Bento is making boxed lunches (bento) with frozen California organic rice and shipping 7000 meals to Japan each day. The appearance of the O-bento (O is for organic) caused shock waves in Tokyo, where the import of foreign rice is a touchy issue. Japan is threatening to bring it up at the next WTO conference because bentos made with imported rice cost half as much as those made with heavily subsidized Japanese rice! Lundberg Farms, the principal grower of organic rice in California, supplies the rice, and NRE Bento says the market is barely tapped. Japan Railway East, the major stockholder in the company, sells up to 120,000 bento a day and estimates the potential market in schools, hospitals, and other outlets is in the millions.

In other natural product news, the U.S. Agricultural Research Service is developing doughnuts and french fries made with rice flour that absorb 70% less oil than wheat flour or potatoes, and a Canadian company announced an upscale line of new organic rice beverages sweetened with amasake.

Natural and organic developments like this may be the ultimate solution to many political, economic, and social problems. They benefit human health and the planet—and are also good for business.

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