

GENETIC ENGINEERING CONTAMINATION CASE STUDY: UNAPPROVED GMO RICE CONTAMINATES THE FOOD SUPPLY

SUMMARY

In August of 2006, the long grain rice from the Southern U.S. was widely contaminated by an unapproved variety of GMO rice (LL601) developed by Bayer CropScience. The rice was only grown in small field trials, yet it was discovered across vast areas of the South in fields, mills, and ports. As a result of the increased testing that ensued, two more sources of contamination were discovered, one from another unapproved variety (LL604) and one from an approved type (LL062). All of these "Liberty Link" varieties had been engineered to tolerate the application of Bayer's glufosinate herbicide (name brand "Liberty"). The incident had severe economic and other negative consequences for Southern rice farmers, millers, handlers, and seed dealers. Though APHIS conducted a year-long investigation, they could not trace the origins, nor did they assign blame to the researchers or Bayer.

CHRONOLOGY¹

- January 2006 — Riceland Foods, the country's largest rice cooperative, detected trace amounts of GMO rice of unknown origin in Southern U.S. long grain rice harvested in 2005.
- May 2006 — Additional samples from five Southern U.S. states confirmed that the rice was contaminated with Bayer's LL601 variety, which had been field tested from 1999 to 2001 but was never commercialized and nor was it deregulated by U.S. Department of Agriculture's Animal Plant Health Inspection Service (APHIS).
- June 2006 — Riceland alerted Bayer of the discovery.
- July 31, 2006 — Bayer alerted USDA/APHIS.
- August 18, 2006 — Eight months after Riceland's initial discovery, APHIS made a public announcement of the contamination.
- August 23 - 28, 2006 — The EU began mandatory testing of all U.S. long grain rice and Japan halted U.S. long grain imports.
- Late August 2006 — California Rice Commission began testing its short and medium grain rice for LL601 contamination; none was detected.
- August 31, 2006 — Louisiana State University announced the detection of LL601 in foundation seed (high purity seed used to produce commercial seed stock) for Cheniere, a commonly grown long grain rice. LSU is also one location where LL601 field trials had been conducted until 2001.
- November 24, 2006 — APHIS retroactively deregulated LL601, stating that, like two previously deregulated Liberty Link varieties (LL06 and LL062), it poses no threat to food safety, human health, or the environment.
- March 4, 2007 — APHIS issued an emergency notification to prevent the planting and distribution of long grain rice Clearfield 131 due to contamination with what was later determined to be another experimental Bayer variety LL604. Contamination by a different variety (LL062) had been discovered prior to this third contamination event, but did not trigger a halt to use of the commonly used Clearfield rice since it involved a GMO that had gained federal deregulated status.
- October 5, 2007 — APHIS releases the results of its investigation of the contamination, but is unable to explain the cause or identify any wrongdoing. Their investigation illuminated the inadequacy of recordkeeping and monitoring by the agency, and prompted federal hearings and legislation.²
- July 2, 2008 — Nearly 4,000 Arkansas rice growers file suit against Riceland Foods Inc. that was involved in the development of LL rice and their eight-month delayed notification to farmers in 2006.

"August 19, 2006, is a day that will be indelibly etched in my mind for the rest of my life, and I dare say for the rest of the U.S. rice producers. Most of us were getting our combines ready to head to the fields for harvest. This looked to a profitable year for a change. The rice crop looked good, global supplies of rice were tight and prices on the futures market were on the rise. Then the bomb dropped."

— Harvey Howington, Arkansas rice farmer

¹ *Genetically Engineered Rice: A Summary of the LL Rice 601 Incident*. A. Bryan Endres & Justin G. Gardner Agricultural Law and Taxation Briefs, Dept. of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign. Issue 06-04, December 6, 2006.

² The "Lessons Learned" report of the APHIS 601 Contamination Investigation Report has been codified in the 2008 Farm Bill. Also, on March 13, 2007 the House Subcommittee on Oversight of Domestic Policy Congressman heard from Southern rice farmers and others about the need for better USDA oversight, and the subcommittee has taken action to ensure improvements.

CONSEQUENCES

Impacts on Trade & Increased Costs to the Rice Industry

Trade was impacted in several key long grain rice export markets including Mexico, Iraq, Canada, parts of Asia, and the EU, comprising over \$1 billion in sales annually. Several markets also started testing for GMO presence. Thailand and Vietnam stepped into the void created by the contamination and committed to producing only GMO-free rice. Indian basmati rice traders secured GMO-free status for all basmati growing areas. Many companies, including the world's largest rice company Ebro Puleva, began sourcing GMO-free rice from outside the United States following the contamination events.

According to a report produced by agricultural economist Dr. Neal Blue, the total costs incurred globally as a result of LL601 rice contamination are estimated to range from \$741 million to \$1.285 billion³. This includes the cost of lost revenues and futures prices, future export losses, lost export shipping costs, product recalls, cleanup, seed testing,

The trade impacts were almost exclusively felt in the Southern rice producing states. California, the other rice-growing region in the U.S., produces short and medium grain rice, and no Liberty Link contamination was detected there. The one exception was Lundberg Family Farms in Butte County, California, the country's largest producers of organic rice and rice products. They purchased a small amount of long grain rice from growers and suppliers in Texas and Arkansas, and upon testing found contamination by LL601. They voluntarily recalled the contaminated products, and implemented a rigorous testing protocol.

"If Japan bans imports of California rice because they are afraid of GMO contamination, the California industry will evaporate."

— Greg Massa, California rice farmer

Legal Action

Farmers who incurred the losses filed three class action lawsuits against Bayer and Riceland Foods. The case is underway, and those farmers continue to wait to find out if they will be compensated for their considerable losses. In a response to the lawsuit, Bayer denied any responsibility, blaming the contamination on "unavoidable circumstances which could not have been prevented by anyone"; "an act of God"; and

farmers' "own negligence, carelessness, and/or comparative fault."⁴

"Farmers are losing money and there is no clear direction as to where this issue is headed. This is money farmers feed their children with. We need some answers and we need a prompt and thorough investigation as to how this happened and how widespread it is."

— John Alter, President of the Arkansas Rice Growers Association

Unavailability of Seed Varieties

Because two of the most commonly grown long grain rice varieties — Clearfield 131 and Cheniere — were contaminated by GMOs, farmers lost access to both of these valuable assets for the 2007 growing season. The removal of these varieties caused a shortage of seed, and combined with the devastating losses from the previous year, unknown acres of rice were converted to other crops to minimize grower risks. This consequence takes on greater significance in the face of the 2007/08 global food shortages and record-setting prices of rice, adding insult to injury to rice farmers who could have been benefiting from the high prices and helping to feed the hungry in countries experiencing rice shortages.

FOR MORE INFORMATION

Arkansas Rice Growers

(www.arkansasricegrowers.com)

Includes updates and press releases on the rice contamination story and the farmer class action lawsuits.

Rice Producers of California

(<http://calriceproducers.org>)

Includes news archives about the rice contamination incident, and articles by California growers about its impact.

US Rice Producers Association

(<http://www.usriceproducers.com>)

Report regularly on the contamination in their newsletter.

Farmer-to-Farmer Campaign on Genetic Engineering

(www.nffc.net/NFFCFarmertoFarmer.html)

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Genetic Engineering Policy Alliance

(www.gepolicyalliance.org)

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³ *Risky Business*. Dr. E. Neal Blue, Neal Blue Consulting, Columbus, Ohio, November 2007. Available at: <http://www.greenpeace.org/international/press/reports/risky-business>

⁴ *Firm Blames Farmers, 'Act of God' for Rice Contamination*. Rick Weiss, Washington Post, November 22, 2006.