FoE Africa
Briefing paper

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AFRICA CONTAMINATED BY UNAPPROVED GM RICE FROM THE UNITED STATES

Food aid and commercial imports sent to Western Africa are contaminated with illegal GM rice

The revelations of contamination by illegal GM rice in the food supply in Europe and Japan prompted FoE Africa to monitor the rice supply in West Africa, a region that imports most of the rice destined to Africa. Samples collected were sent in October 2006 to an independent laboratory in the United States. Testing results have confirmed that contamination by illegal GM rice LL601 has occurred in Ghana and Sierra Leone, main African recipients of rice as commercial imports and food aid from the United States. Many recalls of contaminated products have already taken place in Europe and Japan banned contaminated shipments. Friends of the Earth Africa is calling for an immediate recall of the contaminated products, and a thorough investigation of how this unauthorized contamination occurred.

1. Rice is a key staple food for Africans

Rice is the most consumed cereal grain in the world, constituting the dietary staple food for more than half of the planet's population.[1] About 80% of the world's rice is grown by small-scale farmers in developing countries.[2]

Rice is an important staple food for Africans. Around 16 million MT of rice are consumed each year in Sub-Saharan Africa alone, making it the third largest regional consumer and producer of rice in the world behind Asia, and Latin America.

Africa is also the second largest regional importer of rice in the world, with over 7 million MT imports per year. Nigeria is the second largest importer of rice in the world, with annual imports totalling around 1.7 millions MT. South Africa, Senegal and the Ivory Coast are also among the world's top ten rice importing nations.

2. Attemps to genetically modify rice

In recent years the biotech industry and some scientists have been trying to introduce GM rice into our fields for commercial purposes, but after a decade of commercial planting of GM crops they have not succeed in making it acceptable to the market yet. Experimental releases of GM rice have taken place around the world, and although two varieties of GM rice by German biotech company Bayer have been approved in the United States, these lines have not been commercialized.[3] Despite that, since 2005 the biotech industry has been stepping up the pressure to commercialize GM rice by filing applications for approval of herbicide-tolerant LibertyLink rice in many countries around the world, including the EU, South Africa, Canada, and Brazil.

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In contrast with the main crops genetically engineered so far – soybeans, maize and cotton - which are primarily destined for feed and/or industrial uses, rice is essentially a food commodity, with only a small share of its global production destined to feed usage.[4] With regard to maize, for example, 60% of its total production is used as animal feed and another significant percentage is devoted to industrial uses such as

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[1] FAO. 2004. http://www.fao.org/rice2004/en/rice-us.htm
[2] Idem.
[3] FDA. 2006. Statement on report of bioengineered rice in the food supply. August 18. http://www.cfsan.fda.gov/~lrd/biorice.html
[4] FAO. 2006. Food outlook n. 1. June 2006.

the making of starches, sweeteners and ethanol. In the United States it is estimated that around 20% of the 2006 maize crop was used to manufacture ethanol as a vehicle fuel.[5]

3. Biotech industry responsible for the contamination of our rice supply with experimental rice

The most recent contamination of our food supply by an experimental GM crop involved a variety of GM rice produced by Bayer CropScience. On August 18, 2006, the US Department of Agriculture (USDA) announced that a GM rice unapproved for human consumption has contaminated commercial rice supplies.[6] The statement did not reveal how widespread the contamination is nor when or how it took place.

German biotech giant Bayer produces the GM rice known as 'LL601', a variety that, as of this writing, has not been approved in any country in the world and has not passed the safety assessments necessary to protect human health and the environment.[7] The presence of LL601 in the food supply is illegal, as it has not undergone USDA review for potential environmental impacts required prior to marketing, or review by the U.S. Food and Drug Administration (FDA) for possible harm to human health.[8] GM rice LL601 is engineered to withstand application of the herbicide glufosinate. According to Bayer the GM rice was "present in some samples of commercial rice seed at low levels" [9] Because it was field tested only between 1998 and 2001, it is unclear how it could have contaminated later harvests. Bayer informed the USDA of the contamination on 31 July 2006. Bayer claims that it is not intending to commercialise LL601. But because it is now "in the marketplace" as a result of accidental contamination, Bayer has applied to the US Authorities to approve it, with the possible intent of limiting liability on the company for the incident. Such approvals for placing on the market/release into the environment after the fact, makes a mockery of any serious risk assessment procedures.[10]

4. Reactions to the presence of GM rice in the food supply

International reactions to the announcement followed quickly. On the 19th of August 2006 the Ministry of Agriculture, Forestry and Fisheries of Japan announced that its country was suspending US long-grain rice imports.[11] Several days later the European Union on the 23rd of August adopted emergency measures and required imports of long grain rice from the USA to be certified as free from the unauthorised LL601.[12]

In September the first contamination case was reported in The Netherlands.[13] The same month the European Federation of Rice Millers, which handles about 90% of the

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[5] Idem.
[6] Statement by Agriculture Secretary Mike Johanns regarding Genetically Engineered Rice. August 18 2006. http://www.usda.gov/wps/portal/usdahome?contentidonly=true&contentid=2006/08/0307.xml
[7] The USDA is presently considering a petition from Bayer, submitted ***after*** the contamination was announced, to approve LL601.
[8] Center for Food Safety. 2006. Unapproved, Genetically Engineered Rice found in food supply. August 18, 2006.
[9] USDA announcement. Op.cit.
[10] See comments to USDA by Center for Food Safety: http://www.centerforfoodsafety.org/pubs/LL601_Comments%20to%20APHIS%20on%20Bayer%20Dereg%20Petition_FNL2_%20Oct1006.pdf
[11] Media reports are available online here: http://www.chron.com/disp/story.mpl/ap/business/4128520.html
[12] European Commission. 2006. Commission requires certification of US rice exports to stop unauthorised GMO entering the EU. 23 august. http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/1120&format=HTML&aged=0&language=EN&guiLanguage=en
[13] Reuters. 2006. Unauthorised U.S. GMO rice arrived in Netherlands. August 31.

rice trade in the EU, reported that out of 162 samples of rice tested by its members, 33 had tested positive for the LL601 variant.[14] Monitoring by European national competent authorities in the months that followed the initial case confirmed contamination in 17 countries.[15] On 6 November the European Union tightened its controls further on the imports of US rice, introducing obligatory testing at all ports of entry into the EU to ensure shipments are free of LL601 rice.[16] This goes further then the previous emergency measure which required all incoming shipments to be certified as free of LL601 rice. However, after finding positive samples in rice that was certified LL601 free, the European Commission proposed a tougher testing regime. Markos Kyprianou, European Commissioner for Health and Consumer Protection, stated "*There is no flexibility for unauthorized GMOs - these cannot enter the EU food and feed chain under any circumstances*"[17].

Many recalls have already taken place. In Belgium the Federal Food Safety Agency ordered the importer to recall contaminated rice products already sold to shops. In Norway and Switzerland products contaminated were recalled from the supermarkets. In the United Kingdom, Tesco and Sainbury's have also withdrawn American rice amid concerns it may be contaminated [18] In Ireland the Food Safety Authority found that rice in Marks & Spencer's and St Bernard brand were positive for LL601 when they'd had a negative certificate. Marks and Spencer pulled all their long grain rice off the shelves.

5. Friends of the Earth Africa monitors rice supply in West Africa

The US exported more than 3 million tonnes of rice in 2005.[19]. In 2006 main export markets for US rice were in Mexico, Japan, Central America, the Caribbean, and Sub Saharan Africa.[20]

In light of the contamination, Friends of the Earth Africa decided to undertake monitoring activities on rice imports from the United States. West Africa is the main destination of imported rice in Africa as commercial imports and as food aid. Ghana was the fifth largest importer of US rice in 2004/05, and Cameroon, Burkina Faso, Sierra Leone are among the top 6 recipients of US food aid as rice in 2005. As of July 2006, commercial imports of US long grain milled rice to Ghana were 3,500 MT, followed by Liberia with 1200 MT, Lybia -300MT- and Nigeria and Egypt with 100 MT.[21]

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[14] Euroactive. 2006. EU strives to find GMO needle in rice haystack. 13 September. http://www.euractiv.com/en/food/eu-strives-find-gmo-needle-rice-haystack/article-157769
[15] Friends of the Earth Europe. 2006. Cases of GM rice contamination in Europe. http://www.foeeurope.org/GMOs/rice_contamination.htm
[16] Commission Decision 2006/754/EC
[17] Commission press release, Commission requires certification of US rice exports to stop unauthorised GMO entering the EU, IP/06/1120, Brussels, 23 August 2006
[18] Daily Mail. 2006. Britons eating GM rice as watchdog fails to test imports. 21 September http://www.dailymail.co.uk/pages/live/articles/news/news.html?in_article_id=406376&in_page_id=1770
[19] In 2005, the US exported 3,800,000 tonnes of rice http://usda.mannlib.cornell.edu/usda/ers/89001/2005/table27.xls
[20] ERS USDA. 2006. Rice Outlook. August 14.
[21] USDA. 2006. Rice-Long grain milled carryover exsport sales and accumulated exports by country and region 2005/06. http://www.fas.usda.gov/export-sales/myfijuly.htm

Table 1. Top 10 U.S. rice export markets (in thousand of metric tonnes)

	2004/05		2003/04	
Rank	**Country**	**Exports**	**Country**	**Exports**
1	Mexico	522,1	Mexico	541,5
2	Japan	352,4	Japan	376,4
3	Haiti	258,8	Haiti	272,5
4	Canada	232,0	Canada	202,1
5	Ghana	166,4	Cuba	180,5
6	Nicaraqua	130,7	Brazil	154,2
7	Costa Rica	127,1	Philippines	111,2
8	Turkey	125,8	Costa Rica	110,3
9	Iraq	123,6	Honduras	94,2
10	Cuba	122,3	Saudi Arab	87,0
	Sub-total	2.161,1	Sub-total	2.130,0
	Total exports	3.542,2	Total exports	3.310,9

Source: Foreign Agricultural Service, USDA.[22]

Table 2. Main food recipients of US Food aid as rice (in thousand metric tonnes)

Recipients	**2005**
Philipinnes	63.5
Honduras	12.9
Burkina Fasso	12
Cameroun	11
Indonesia	9.3
Sierra Leone	6.5
Madagascar	6
Sri Lanka	5.7
Nicaragua	3.9

Source: Friends of the Earth based on Table III. Programmed U.S. Food aid for FY 2005[23]

A round of monitoring activities was undertaken in Ghana and Sierra Leone. The samples sent to an independent laboratory in the United States confirmed the presence of illegal GM rice LL601 in 9 samples. 2 bags of US food aid and 1 commercial rice products in Sierra Leone were tainted. 6 different types of commercial rice from the US, including brands such as Gold Rush, Texas Stars, Chicago Stars, also tested positive.

[22] http://usda.mannlib.cornell.edu/usda/ers/89001/2005/table30.xls
[23] http://www.fas.usda.gov/excredits/FoodAid/Reports/2005tableiii.pdf

Table 3. United States rice products containing illegal GM rice detected by FoE Africa monitoring activities in September 2006

Nº	Country	Product
1	Sierra Leone	Long Grain Rice, Food aid from USAID
2	Sierra Leone	Long Grain USA, Milled Rice, Food aid from USAID
3	Ghana	Texas Stars Rice Riz Special Selection
4	Ghana	Gold Rush, Special Christmas Quality, Long Grain Ricemasters's choice
5	Ghana	Chicago Stars American Long Grain Rice
6	Ghana	First Choice American Long Grain Rice, Hard Milled, White Rice
7	Ghana	Texas Star American Long Grain Rice, Hard Milled, White Rice
8	Ghana	Bronco American Long Grain Rice, Hard Milled White Rice
9	Sierra Leone	Big Brother, Long Grain/ USA

6. Lessons from a decade of GM crops: the StarLink contamination

More than a decade after the first GM crop appeared on market shelves, biotech corporations are still failing to deliver their promised GM crops with clear benefits for consumers or farmers. Instead, GM crops are increasingly creating new problems and posing new risks for human health and the environment.[24]

Contamination with illegal GM crops is nothing new. In 2000, StarLink, a variety of GM maize authorised in the United States for animal feed purposes only, was found in the food supply by Friends of the Earth. It was not authorised for human consumption as food because of the potential allergenicity of the protein Cry9C that was genetically engineered into the maize.[25] The magnitude and gravity of the StarLink contamination was breathtaking. More than 300 corn products were recalled across the United States. Despite the fact that StarLink was only planted on 0.4 per cent of total US corn

[24] Friends of the Earth International. 2006. Who Benefits from GM crops? http://www.foei.org/gmo/index.html
[25] Friends of the Earth US. Regulatory History of StarLink corn. http://www.foe.org/camps/comm/safefood/gefood/foodaid/StarLink_regulatory_history.pdf

acreage, testing of US corn supplies revealed a contamination rate of 10% and more.

StarLink contamination was not contained within the US, but was also detected in 2000 and 2001 in food shipments to Japan and South Korea.[26] This led to a series of recalls in these countries as well, and an immediate decline in Japanese exports. Certification of "StarLink free" was required for corn exports to Japan where Japanese inspectors monitored and tested feed corn shipments.[27] At the June 2002 United Nations World Food Summit in Rome, Latin American NGOs announced that StarLink had been found in US food aid in Bolivia. In February 2005 the presence of StarLink in Central American food aid was also denounced.[28] Five years after its discovery in the human food chain, StarLink still persists, thereby contradicting industry projections for full withdrawal within four years.[29] The StarLink case underlines the unpredictability of releasing a GMO into the environment and the failure on the part of GMO developers to prevent contamination.

7. FoE Africa calls for action

The finding of experimental GM rice not authorized for human consumption anywhere in the world is a clear proof that the biotech industry cannot control the products it is developing. This contamination is unacceptable and urgent measures not to be taken:

- Friends of the Earth Africa is calling on African governments for an immediate recall of all products contaminated with GM rice and a suspension of all imports of rice from the United States, unless they are accompanied by a valid GM-Free certification letter.

- Friends of the Earth Africa is calling on all African governments to undertake monitoring activities to verify that commercial imports and food aid are not contaminated by GMOs.

- Friends of the Earth Africa calls on Bayer CropScience to reimburse African governments for the full costs of such monitoring activities.

- Friends of the Earth Africa calls for the urgent promotion of local rice varieties to cut down on import dependency and to promote food sovereignty.

[26] Friends of the Earth International. 2002. GMO Contamination around the world. http://www.foei.org/publications/pdfs/contamination2eng.pdf
[27] Segarra, A., Rawson, J. 2001. StarLink Corn Controversy: Background. CRS Report for Congress. January 10, 2001. http://www.ncseonline.org/nle/crsreports/agriculture/ag-101.cfm
[28] Alianza Centroamericana de Protección a la Biodiversidad. 2005. World Food Programme and the United States denounced for the distribution of genetically modified organisms in Central America and the Caribbean. February 16. http://www.humboldt.org.ni/transgenicos/denuncia_englishfeb16.htm
[29] Segarra, A, Rawson, J. 2001. op. cit.