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**Compensation is Not Protection from GE Contamination:
*CFS Comments to USDA Advisory Committee on
Biotechnology and 21st Century Agriculture***

1. Introduction

The US Department of Agriculture (USDA) has increasingly strayed from its role as “enhance[er of] economic opportunities for US farmers and ranchers,”¹ by continuing to allow genetically engineered (GE) seeds, pollen, and plants to contaminate our nation’s farms without restraint. As such, USDA is failing to serve the interests of *all* US farmers and ranchers, particularly those who have chosen not to adopt GE technology. Moreover, USDA’s stated policy of “co-existence” represents a thinly veiled attempt to sanction allowable amounts of GE contamination in food by establishing a universal GE contamination threshold.² But “co-existence” will not solve the GE contamination problem.³ Neither will the creation of a compensation mechanism to address economic losses to farmers because it will do nothing to prevent contamination. On the contrary, such policies merely serve to further institutionalize GE contamination rather than curtail it, undermining organic, identity-preserved (IP), and conventional non-GE agricultural systems.

Many markets around the world today demand food grown without the use of GE technology. Establishing a universal threshold of GE contamination in US food products could cut-off US farmer access to valuable non-GE markets both domestically and abroad. GE contaminated seed and crops cannot be sold in countries that do not permit their use, regardless of how they are grown. Even if farmers strictly adhere to crop management protocols such as those required in the organic standards, GE contaminated crops cannot be sold in countries that prohibit GE food. Thus, despite USDA’s responsibility to enhance U.S. agriculture markets at home and abroad,⁴ its policy and practice of permitting the unrestricted use of GE technologies cuts off valuable export markets and facilitates the dominance of GE above all other forms of agriculture, particularly in the face of transgenic contamination.

¹ USDA. (2008). “2008 Performance and Accountability Report,” p. 1.

² Vilsack, T. (2011). “USDA AC21 Meeting Presentation by the Secretary of Agriculture,” Washington, DC, 30 Aug. 2011.

³ Ibid.

⁴ 7 U.S.C. § 7701(1), (3), (6).

No well-established scientific evidence exists to demonstrate that contamination can be prevented when farmers use GE technology or that 100 percent containment in open air agriculture can be achieved. Yet, scientific evidence does exist that explains how GE crops cannot be recalled once released into the environment. They continue to reproduce on land where their seeds are sown or blown and where plants are pollinated.⁵ This is troubling news for organic and conventional farmers alike. Without USDA-imposed restrictions and limitations on GE technology, organic and conventional growers remain largely unprotected from contamination by GE crops that have been deregulated and commercially grown. This lack of protection ensues even despite the good faith efforts, time, and money farmers expend to prevent contamination, which include creating buffer strips, wind breaks, hedgerows, and temporal and spatial isolation of their crops. Moreover, since USDA has never mandated restrictions on the planting of GE crops, there is little empirical evidence to demonstrate how contamination can be prevented.

Organic and non-GE food industries already shoulder a large and unfair burden to prevent contamination from a technology that provides them with no benefits and only costs. It is time for the USDA to do the right thing by requiring those who profit from GE technologies to demonstrate whether contamination prevention is possible and to *require proof* that contamination can be prevented before the Agency considers any new crop deregulation.

We call upon USDA to immediately establish a moratorium on the planting of GE crops, unless and until an adequate body of scientific evidence is available to demonstrate that GE contamination can be prevented. This will help ensure that those who choose not to use GE technology can freely do so without the threat of contamination or suffering market and livelihood losses. For crops already in unrestricted commercial production, we call upon USDA to immediately determine and mandate the best management practices to mitigate GE contamination and its associated harms to non-GE growers. This will help assure organic consumers that the government is receptive to their desire to eat food free from GE contaminants and farmers that USDA is true to its mandate of supporting all farmers.

2. AC21: Fails to Address the Real Problem — GE Contamination

The AC21's charge of identifying compensation mechanisms to address the GE contamination problem assumes that contamination is an acceptable cost of doing business for organic, IP, and non-GE farmers. The charge follows the logic that as long as farmers are adequately compensated, contamination is permissible and GE can *co-exist* with all other forms of agriculture. This is simply not the case. Compensation for contamination does not in any way equate with "co-existence." On the contrary, USDA's so-called *co-existence* policy is a back-

⁵ Marvier, M. & R.C. Van Acker. (2005). "Can Transgenes be kept on a Leash?," *Frontiers in Ecology and the Environment*, 3(2): 96-106.; Altieri, M.A. (2005). "The Myth of Coexistence: Why Transgenic Crops are not Compatible with Agroecologically Based Systems of Production," *Bulletin of Science, Technology & Society*, 25(4): 361-371.

door strategy for normalizing contamination in the face of market losses and for legitimizing the continued and unimpeded use of GE technology.

Existing unregulated and unmonitored use of GE technology precludes access to non-GE markets and limits the success of organic, IP, and non-GE farmers once contamination occurs or is suspected. Under this current scenario, transgenic polluters escape liability for contamination and restitution costs and they are allowed to continue to pollute without restrictions. It is a win-win situation for GE growers and a lose-lose situation for everyone else because it severely curtails, if not eliminates, a farmer's right to choose to grow non-GE crops. This situation has forced increasing numbers of farmers to suffer in silence for fear of losing their organic certification and markets, or worse, they unfairly experience uncompensated market and other losses.

2.1 AC21: Requiring Non-GE Growers to Insure Against Contamination is Wrong

GE contamination is a cognizable injury that can be traced back to the source of contamination – the GE patent holder. Therefore, it is the duty of the GE patent holder to prevent contamination. It is *not* the responsibility of organic and non-biotech growers to purchase insurance or to pay into a fund to compensate for the economic costs of GE contamination, the restitution of organic crops, seeds, and soil, and the full range of other social and livelihood damages that result.

Even without contamination insurance, conventional and especially organic growers already bear substantial financial burdens to protect their crops from transgenic contamination, with questionable results. Such costs include buffer strips, wind breaks and hedgerows, temporal and spatial isolation, identity preservation, and expensive tests to identify and eliminate sources of GE contamination. But, all of this effort and expense still does not *prevent* contamination. Paying for contamination insurance is an additional, unjustifiable, and high price for farmers to pay so that they can farm as they have done successfully for years and perhaps even generations.

While an insurance scheme might compensate an organic farmer for losses due to a single rejected shipment, it cannot restore her/his reputation as a trustworthy organic supplier, something infinitely more valuable and difficult to quantify. For many organic growers, their production systems are forged over time and linked by personal bonds of trust throughout the supply chain, from growers to brokers to food companies and retailers. Once this trust is broken, it is difficult, if not impossible, to restore. Moreover, GE contamination of an organic crop could result in reduced consumer confidence in the integrity of that organic crop, organic food in general, and in the USDA organic seal.

The Center for Food Safety (CFS) opposes any compensation mechanism that requires organic, IP, and conventional non-GE growers to purchase insurance or pay into a fund to compensate themselves for unwanted GE contamination. This proposed scheme of penalizing the victim is fundamentally unjust, threatens farmers' economic viability, and fails to address and prevent the root cause of the problem — GE contamination.

3. Critical Issues of Concern: The Costs of GE Contamination

Like other types of pollution, transgenic contamination cannot be recalled.⁶ GE plants also continue to reproduce in farm fields where GE seeds are sown or blown and where plants are pollinated. Their traits are passed on to subsequent generations of crops. They also reproduce in wild nature where GE varieties can forever alter wild relatives, native plants, and ecosystems. A British study revealed that GE canola (rapeseed oil) can contaminate non-GE canola more than 16 miles away.⁷ Another study found that pollen from GE bentgrass traveled at least 13 miles from the field where it was planted, posing a serious threat to native grasses.⁸ As these and other studies suggest, GE contamination prevention may not be possible when certain crops are grown due to their promiscuity in the environment and, therefore, deregulating such crops without restrictions directly compromises the ability of farmers to grow non-GE varieties of those crops.

In addition, planting GE pharmaceutical and industrial crops in open fields also must be prohibited because of the potential life-threatening consequences that could result from uncontrollable human, domesticated animal, and wildlife exposures to those substances. Pharmaceuticals and industrial substances must be prohibited from being genetically engineered into food crops as well, due to the notable risk of accidental introduction into the human and animal food supply chains.^{9,10,11}

⁶ Marvier, M. & R.C. Van Acker. (2005).

⁷ Squire, G., G. Begg, & M. Askew. (2003). "The potential for oilseed rape feral (volunteer) weeds to cause impurities in later oilseed rape crops," Final Report of the DEFRA Project: Consequences for Agriculture of the Introduction of Genetically Modified Crops, RG0114. Available at: http://www.scri.ac.uk/scri/file/EPI/Agroecology/Volunteer_impurities_in_oilseed_rape_rg0114.pdf.

⁸ Watrud, L.S., E.H. Lee, A. Fairbrother, C. Burdick, J.R. Reichman, M. Bollman, M. Storm, G. King, & P.K. Van de Water. (2004). "Evidence for landscape-level, pollen-mediated gene flow from genetically modified creeping bentgrass with CP4 EPSPS as a marker," *Proceedings of the National Academy of Scientists of the USA*, 101(40):14533-8.

⁹ Elias, P. (2003). "Biotech firms pay \$110 million to settle StarLink lawsuit," *Associated Press*, February 7, 2003. Available at: http://ipm.osu.edu/trans/023_071.htm

¹⁰ USDA. (2002). "USDA Announces Actions Regarding Plant Protection Act Violations Involving Prodigene, Inc.," December 6, 2002. Available at: <http://www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=2002/12/0498.html>

¹¹ USDA Animal and Plant Health Inspection Service. (2011). "Biotechnology: Noncompliance History," Last updated August 4, 2011, Accessed July 10, 2012. Available at: http://www.aphis.usda.gov/biotechnology/compliance_history.shtml

3.1 Organic and Non-GE Seed Protection

Seed is the critical first link in the agriculture production chain and, therefore, it is imperative that the integrity of organic, IP, and non-GE seed is protected. GE contamination of seed threatens non-GE farmer livelihoods, the genetic integrity and purity of seed stocks, and public faith in the organic label. Protecting organic seed integrity to meet market needs and to maintain appropriate non-GE germplasm for agricultural innovations is paramount to maintaining agricultural biodiversity and food security. Not only does the National Organic Program (NOP) require the use of non-GE seed, but organic food consumers reasonably assume that certified organic farmers use organic seed in their production of organic crops. It is essential that the NOP and USDA work together to ensure that organic farmers have a sufficient and reliable organic seed supply to meet their agricultural needs. This necessitates both the implementation of contamination prevention measures and adequately funding classical plant breeding programs so farmers who rely upon organic seed have access to appropriate marketplace options. It also requires that USDA-funded seeds and breeds research remains in the public domain to ensure public access to pure seed and to prevent the further corporate consolidation of our nation's seed industry.¹²

3.2 Social, Economic & Environmental Impacts

More than 200 transgenic contamination episodes have been documented over the past decade, many of which have triggered the rejection of shipments by grain elevators or food companies, according to a worldwide registry of reported contamination events.¹³ Crops that have been found to be GE-contaminated in the US include corn, rice, cotton, canola, tomato, soy, papaya, and grass. In 2005, USDA's Office of Inspector General reported that poor government monitoring and oversight of experimental GE field trials resulted in the failure of GE crops to be destroyed in a timely manner, creating the potential for animals, birds, and even people to carry unapproved seeds and food crops away from the trial fields.¹⁴ A 2008 US Government Accountability Office report not only acknowledged that multiple, unauthorized releases of GE crops into food, animal feed, and the environment have occurred, but it also warns that "it is likely that such incidents will occur again."¹⁵ Yet, USDA still refuses to monitor the impacts of GE contamination or to take meaningful steps to prevent such contamination that has resulted in hundreds of millions of dollars worth of damage to US agricultural markets and untold social costs.

¹² See: Organic Seed Alliance. (2011). "The State of Organic Seed" for a greater in depth discussion of public seeds and breeds issues. Available at: http://seedalliance.org/uploads/publications/SOS_2011_Report.pdf

¹³ Greenpeace and GeneWatch UK. (2012). "GM Contamination Register: Worldwide Contamination Incidents." Available at: <http://www.gmcontaminationregister.org/index.php?content=re®=0&inc=1&con=0&cof=0&year=0>

¹⁴ USDA Office of Inspector General Southwest Region. (2005.) "Audit Report: Animal and Plant Health Inspection Service Controls Over Issuance of Genetically Engineered Organism Release Permits," Audit 50601-8-Te, December 2005. Available at: <http://www.usda.gov/oig/webdocs/50601-08-TE.pdf>

¹⁵ GAO. (2008). "Genetically Engineered Crops: Agencies are Proposing Changes to Improve Oversight, but Could Take Additional Steps to Enhance Coordination and Monitoring," Report to the Committee on Agriculture, Nutrition, and Forestry, US Senate, November 2008. Page 1.

It is important to emphasize that transgenic contamination does not solely result in economic harm that can be remedied with monetary compensation. GE contamination can cause social harms to farmers in the form of loss of livelihood, reputation, and standing in their community, and compromise long-established partnerships and markets in the US and elsewhere. Contamination can also severely curtail or eliminate the rights of farmers to sow the crop of their choice and to practice their preferred method of farming. It may also limit their ability to collect and preserve non-GE, identity preserved, and organic seeds. These losses are personally devastating and largely unquantifiable. Contamination can also cause inestimable environmental harm, due to the transgenic pollution of native ecosystems and biodiversity in the vicinity of farms, all of which are irreparable.

StarLink Corn Contamination Episode

One of the most poignant examples of GE contamination is the StarLink corn case. First commercialized in the US in 1998, StarLink corn was not initially approved for human consumption, due to concerns about its potential allergenicity. Instead, it was intended to be limited for use only in animal feed and for industrial purposes with planting, seed storage, post-harvest, and handling segregation restrictions required by the US Environmental Protection Agency.¹⁶ Nonetheless, StarLink corn cross-pollinated with other types of corn, causing millions of people to eat unapproved GE food in the form of popcorn, sweet corn, and white corn. Subsequently, many US and foreign food manufacturers stopped using US corn in their products and US corn prices dramatically decreased. The extent of StarLink contamination was so vast that by 2000 half of Iowa's cornfields showed at least a trace of contamination, despite the fact that StarLink had been planted on only 1% of the state's fields.¹⁷ Contamination of the nation's food supply caused the recall of tens of millions of supermarket items. A group of farmers were awarded a \$110 million settlement in 2003, due to the loss of foreign markets.¹⁸

LibertyLink Rice Contamination Episode

In 2006, Bayer CropScience's GE LibertyLink Rice 601 and 604 contaminated US long grain rice supplies, causing economic damages of over \$1 billion and putting the US rice export market in jeopardy.¹⁹ Contamination affected over 40% of US rice supplies and resulted in multiple federal lawsuits. Following the announcement of contamination, Japan banned all long-grain rice imports from the US. Trade with the EU and other countries ground to a halt. In 2011, Bayer and its global affiliates agreed to pay US rice farmers \$750 million in damages to settle all legal actions over the contamination of the nation's rice crop by their experimental and unapproved GE LibertyLink rice. In the USDA's "Report of LibertyLink Rice Incidents I" the

¹⁶ Beebe, L. (2004). "In re StarLink Corn: The Link Between Genetically Damaged Crops and an Inadequate Regulatory Framework for Biotechnology," 28 Wm. & Mary Env'tl. L. & Pol'y Rev. 511. Available at: <http://scholarship.law.wm.edu/wmelpr/vol28/iss2/9>.

¹⁷ CropChoice. (2001). "Organic crop certifiers decry transgenic contamination," May 1, 2001. Available at: <http://www.cropchoice.com/leadstrya16a.html?recid=310>.

¹⁸ Elias, P. (2003).

¹⁹ GAO. (2008). Page 1.

Agency admits that “even with proper procedures it may be impossible to prevent contamination in conventional seeds and grains.”²⁰

3.3 Pesticide Drift and Herbicide Resistant Weeds

GE agriculture creates injuries to organic and conventional growers that extend well beyond transgenic contamination. Increasing and widespread planting of GE glyphosate-resistant crops has resulted in a massive rise in mid-season use of glyphosate and serious pesticide drift damage to neighboring growers. In fact, a 2009 assessment of USDA’s pesticide use data found that an additional 318 million pounds of pesticides were sprayed on crops across the US as a result of the adoption of GE crops during the first 13 years of use.²¹ USDA’s pending approval of Dow’s 2,4-D-resistant corn further increases farmer concerns about crop losses due to pesticide drift. 2,4-D tends to volatilize under the sun and drift onto neighboring fields, damaging crops, impacting livelihoods of non-GE farmers, and exposing communities to toxic pesticides. Some scientists estimate that the approval and widespread planting of the pending 2,4-D-resistant corn variety, alone, could trigger as much as a 30-fold increase in 2,4-D use on corn by the end of the decade.²² This is a far cry from the original promise and stated purpose of the biotechnology industry – to notably reduce pesticide use and to create a more environmentally friendly agricultural environment. In reality, the exact opposite is true.

The unregulated cultivation of GE crops, most of which are intended to be glyphosate-resistant, has also triggered an epidemic of glyphosate-resistant weeds, stimulating an increase in the use of other and even more toxic herbicides in two ways. First, farmers are spraying highly toxic herbicide “cocktails” in an attempt to control extensive weed problems that are no longer responsive to glyphosate. Second, biotech companies have attempted to mitigate this problem by producing stacked varieties of GE seed that combine previously deregulated herbicide-resistant plant varieties with newly formulated varieties, all of which are designed to withstand multiple sprays of even more toxic chemicals such as 2,4-D and dicamba. This is an extremely ineffective and inappropriate solution, especially since scientists early on anticipated weed resistance problems associated with GE herbicide-tolerant crops which could have been avoided. But, in their rush to conquer worldwide seed markets, GE technology developers and regulators ignored weed resistance warnings. Now, the problem has come home to roost as farmers face an elevation in herbicide-resistant weeds in many regions. In less than a decade, GE crops have created intractable weed resistance problems that require conventional

²⁰ USDA. (2007). “Report of Liberty Link Rice Incidents 1,” Available at:

www.aphis.usda.gov/newsroom/content/2007/10/content/printable/RiceReport10-2007.pdf

²¹ Benbrook, C. (2009). “Impacts of Genetically Engineered Crops on Pesticide Use in the United States: The First 13 Years,” *The Organic Center*. Available at: <http://www.organic-center.org/reportfiles/GE13YearsReport.pdf>

²² Benbrook, C. (2012). “2,4-D Use on Corn: Historical Trends and Likely Upper End Reliance in 2019 With and Without Herbicide-Tolerant (HT) 2,4-D Corn,” from presentation entitled: “The Good, the Bad, and the Ugly: Impacts of GE Crops in the United States,” presented at the conference Pesticides: Domestic and International Perspectives from Science, Law, and Governance, National Academy of Sciences Beckman Center, Irvine, California, April 12, 2012.

agricultural systems to use more and more pesticides, many of which are increasingly toxic to human and environmental health.

3.4 GE Patent Holder Liabilities

Currently, the entire burden for preventing and responding to GE contamination rests with those who neither use nor benefit from GE technologies. If contamination is suspected, farmers must undertake costly tests for which they have not budgeted to identify the presence of a GE trait, to assess the extent and source of contamination, and to try and eliminate it. Once contamination occurs, no compensation mechanism exists for farmers to receive payments for testing costs, recover damages, eliminate the source of contamination or clean GE contamination from their fields and seeds.

Liability for damage compensation must rest with GE patent holders and not with the farmers who choose to avoid using GE technology and products. Patent holders must be held liable to pay for the full range of agronomic, economic, and social losses, including restitution costs that result from contamination.

4. GE Contamination Prevention: A Way Forward

Preventing GE contamination should be a primary goal of the USDA's biotechnology program. As the self-proclaimed enhancer of fair farming for all, USDA is sorely failing in this regard when it comes to GE contamination. The AC21 process presents an opportunity for the Agency to redeem itself by taking a stand in support of the rights of all farmers, but it will require a complete change in course. Mandatory contamination prevention measures are critical not only to stopping GE gene flow, but also to preserving the future success of all types of US agriculture. Failing this, our nation risks the demise of crop biodiversity and food security by increasing the concentration of our nation's food resources in the hands of a few biotech seed and chemical companies. Unlike the USDA, private corporations are neither accountable to the public nor mandated to operate in the public's best interest. Therefore, as corporate control of our food supply rises, farm diversity and agricultural opportunities across America decline.

CFS calls upon the USDA to institute an immediate moratorium on the approval and planting of new GE crops unless and until contamination of organic and non-GE conventional crops can be scientifically proven to be preventable. In the meantime, for those crops that have already been deregulated without restrictions, as per the current USDA GE policy, CFS calls upon USDA to do the following:

1. Require ongoing government oversight of GE crop plantings and the monitoring of gene flow, weed resistance, and seed contamination.

2. Monitor changes in pesticide use and toxicity from the planting of existing deregulated GE crops to provide a basis for ascertaining the health and environmental effects of increasing GE crop production across the US.
3. Establish a set of mandated best practices to prevent GE contamination by all farmers who use GE technologies and require GE farmers to institute concrete contamination prevention measures on their farms to supplement those already being used by organic growers.
4. Immediately create a GE contamination registry so that USDA can track and eliminate known sources of GE contamination across the supply chain. This will ensure that non-contaminated foundational seeds not only remain a source of our national heritage but also can also be used for public plant breeding in perpetuity.
5. Acknowledge that liability for GE contamination elimination, economic damages from lost markets, and restitution for adverse livelihood impacts must rest with the GE seed patent holder.

5. Conclusion

In conclusion, the twin pillars of preventing GE contamination and holding GE patent holders liable for damage caused by GE technology must serve as the foundation for the AC21's recommendations and proposed solutions. CFS, therefore, strongly opposes any policy or government regulation that places an additional financial burden on organic, IP, and conventional growers who are the victims of GE contamination through no fault of their own. We call upon the USDA to institute a moratorium on the deregulation of all GE crops unless and until the means by which GE contamination can be prevented are well-established. For crops already in unrestricted commercial production, CFS strongly urges USDA to determine and mandate best management practices to mitigate GE contamination and the associated economic harm to non-GE growers.

We thank USDA for the opportunity to submit comments for its consideration and we welcome any follow-up questions or discussion.

Respectfully submitted,

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