



Supporting the ethical development and stewardship of seed

National Organic Standards Board  
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May 3, 2012

Docket No: AMS-NOP-12-0017; NOP-12-06

National Organic Standards Board:

Organic Seed Alliance (OSA) is a national nonprofit organization that advances the ethical development and stewardship of the genetic resources of agricultural seed. We engage farmers and other seed professionals in developing regional and decentralized seed systems that provide biologically diverse seed options appropriate for organic farming systems. Our research, education, and advocacy programs serve organic and non-organic farmers, university researchers, seed and food businesses, certifiers, seed advocates, and other organic stakeholders. We appreciate the opportunity to provide these comments on committee proposals.

OSA fully supports the letter drafted by the GMO Ad Hoc Committee to Secretary Vilsack. The letter addresses the organic community's long-standing concerns on issues of contamination, sets a course for NOSB to clarify issues around excluded methods, and asks the Secretary to acknowledge that the responsibility to prevent transgenic contamination of organic products, including at the seed level, should not be the burden of organic alone. Those developing, promoting, using, and regulating genetically engineered (GE) products must share the responsibility in protecting the genetic integrity of organic seed, feed, and food.

As public input from past NOSB meetings demonstrates, the organic community strongly agrees that genetic engineering has no place in our collective vision of what constitutes an organic production system. Organic farmers neither choose to use nor benefit from GE products.

Protecting the integrity of non-GE seed to meet market needs and maintain appropriate germplasm for innovation in the organic sector is paramount to the success of the organic industry. Not only does the NOP require non-GE seed, consumers of organic food also reasonably assume that certified organic farmers do not use this excluded method – that the seed they plant is free of transgenic material. Yet the unwanted presence of GE material adds confusion and costs to organic operations, especially when contamination is found at the seed level.

OSA has been speaking with seed companies that provide for the organic farming community to better understand the burdens and costs associated with the avoidance of – and repercussions resulting from – GE material in our seed lines. Our preliminary findings show that companies shoulder expensive testing costs each year, at times in the tens of thousands of dollars, to meet customer expectations. These costs add up even in absence of an industry-wide threshold for transgenic content. Testing for an excluded method appears to be a burden to companies and a barrier to further investments in the organic seed sector.

Companies are also losing revenue. When contamination occurs, companies routinely sell organically produced seed to the non-organic market at lower prices because transgenic levels are unacceptable to their customers. These companies are committed to protecting the integrity of organic. And farmers demand it. In response to a nationwide survey we conducted with certified organic crop farmers, more than 70 percent agreed companies should test for transgenic material. There are risks, though, to routine testing and making the results public.

The complexity of these issues demands a comprehensive approach that addresses contamination prevention as well as compensation. That is why we also encourage NOSB members to send the GMO Ad Hoc Committee's letter to USDA's Advisory Committee on Biotechnology and 21<sup>st</sup> Century Agriculture (AC21). This committee is charged with exploring an appropriate compensation mechanism for those harmed by transgenic contamination as well as other measures to minimizing contamination. The NOSB has an important opportunity to clarify for AC21 members the measures already taken (invested in) by organic farmers and other stakeholders to protect their products from excluded methods, the risks GE poses to the integrity of the organic seal, and the need for shared responsibility to protect organic integrity and support further investments in organic seed systems.

Instead of going into more detail here, we've enclosed a section of our 2011 *State of Organic Seed* report that outlines why transgenic contamination remains a major threat to the organic seed sector.

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in black ink that reads "KHubbard". The signature is written in a cursive, flowing style.

Kristina Hubbard  
Director of Advocacy  
Organic Seed Alliance

Encl: Section 3: Risks of Transgenic Contamination

## STATE OF ORGANIC SEED



2011

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## Risks of Transgenic Contamination

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It is important for us to assess the risk factors that threaten the natural resource of agricultural seed as we also work to expand, develop, and enhance organic seed systems. The following sections on contamination and concentration underline that while we make investments, engage in education and conduct research in organic seed, we must also take a more unified and focused approach to addressing these unchecked threats. To fail to do so would be to build on sand. Without a strong foundation of seed policies and regulatory management, organic seed systems will lack stability and be at risk of degradation. If seed is contaminated, contaminated crops follow.

**Contamination Risks from Genetically Engineered Crops:** Because genetic engineering is an “excluded method” under the National Organic Program (NOP), and a

method to which organic consumers were vocally opposed when the organic rules were in development, genetically engineered (GE) crops – also referred to in this document as genetically modified organisms (GMOs) – pose one of the biggest threats to organic integrity. Contamination of organic seeds and crops by GE material is well documented.<sup>30</sup> Although biotechnology corporations promote “co-existence” as a reality, the evidence is that transgenic traits cannot be contained.<sup>31</sup> Therefore, there is no co-existence without a loss of organic integrity. Biological factors (e.g., cross-pollination), human error (e.g., mismanagement of genetic resources), and weak regulatory frameworks all contribute to the unwanted spread of GE pollen and seed into organic agricultural systems. Seed is a particularly critical entry point for GMO contamination given that crop production that begins with contaminated seed will inevitably result in a final organic product with GMO contamination. To maintain the integrity of organic food and feed, we have to maintain the integrity of the seed.

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<sup>30</sup> GeneWatch UK and Greenpeace International. 2005. *GM contamination report, A review of cases of contamination, illegal planting, and negative side effects of genetically modified organisms*, Retrieved at <http://www.greenpeace.org/international/en/>.

<sup>31</sup> Marvier, M. & Van Acker, R.C. 2005. Can crop transgenes be kept on a leash? *Frontiers in Ecology and the Environment*, 3(2): 99–106, Retrieved at <http://www.esajournals.org/esaonline/?request=get-abstract&issn=1540-9295&volume=003&issue=02&page=0093>.

For crops with GE counterparts, such as canola, corn and soybeans, GE material turns up in fields where GE seeds were not planted (i.e., crops with GE counterparts, specifically canola, corn and soybeans). This reality is compromising the credibility and economic viability of non-GE markets, including organic. For example, organic corn consistently tests positive for transgenic material.<sup>32</sup> Fedco Seeds has zero tolerance for GE material in the seed it sells and routinely tests seed at risk of GMO contamination. In 2008 and again in 2009, Fedco dropped varieties of sweet corn due to GMO contamination.<sup>33</sup> Organic rice companies were impacted by contamination when an unapproved GE variety escaped open-air field trials and turned up in the U.S. rice supply, half of which is exported.<sup>34</sup> And contamination in canola is so extensive that organic farmers in Canada sued Aventis and Monsanto arguing GE canola has destroyed their market.<sup>35</sup>

Organic producers use both organic seed and conventional non-treated seed as allowed by

the NOP rule. Genetic testing shows that seeds of conventional varieties of canola, corn, and soybeans are pervasively contaminated with DNA sequences derived from transgenic varieties.<sup>36</sup> Organic seed has also been contaminated. Seed companies producing organic seed report that they struggle to find uncontaminated foundation seed, and that even when they start with clean seed they cannot maintain purity through production in a veritable “sea of GE pollen.”<sup>37</sup> While organic farmers overwhelmingly want organic seed companies to test for GE material and report findings,<sup>38</sup> seed companies are hesitant to do so, or if they do test, they are hesitant to report the results for fear that customers will not purchase their seed.<sup>39</sup> Conventional seed companies selling to organic farmers likewise do not report contamination. This is largely because there is no recourse for compensating their loss. The GE technology/patent owner is currently not held liable for economic damage.

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<sup>32</sup> Thottam, Jyoti. 2007. “When organic really isn’t organic,” TIME, March 14, Retrieved at <http://www.time.com/time/health/article/0,8599,1599110,00.html>; Organic & Non-GMO Report. 2010. “Organic farmers report increasing contamination with corn,” April, Retrieved at [http://www.non-gmoreport.com/articles/apr10/organicfarmers\\_gmocontamination.php](http://www.non-gmoreport.com/articles/apr10/organicfarmers_gmocontamination.php).

<sup>33</sup> Fedco Seeds. 2010. Online catalog at <http://www.fedcoseeds.com/seeds/Changes.htm>.

<sup>34</sup> The Organic & Non-GMO Report. 2006. “Organic rice companies impacted by GM rice contamination,” November, Retrieved at [http://www.non-gmoreport.com/articles/nov06/gm\\_rice\\_contamination.php](http://www.non-gmoreport.com/articles/nov06/gm_rice_contamination.php).

<sup>35</sup> Saskatchewan Organic Directorate. 2002. Organic farmers sue Monsanto and Aventis, January 10, Retrieved at <http://www.saskorganic.com/oapf/news.html#pr-rel-8nov04>.

<sup>36</sup> Union of Concerned Scientists. 2004. *Gone to seed: Transgenic contaminants in the traditional seed supply*, Retrieved at [http://www.ucsusa.org/food\\_and\\_environment/genetic\\_engineering/gone-to-seed.html](http://www.ucsusa.org/food_and_environment/genetic_engineering/gone-to-seed.html).

<sup>37</sup> State of Organic Seed Symposium. Participant input form and corn working group discussion notes. February 11, 2010.

<sup>38</sup> Organic Producer Survey, Question 22: 74% of organic producers agreed or strongly agreed to the statement: “Seed companies should conduct testing and report rates of GE (GMO) contamination in organic seed.”

<sup>39</sup> Westgate, Megan (Non-GMO Project). Personal communication, May 28, 2010.

In cases where non-GE crop seed is also sold as a GE variety, organic farmers may unknowingly plant seeds that contain GE material – even when the seed is certified organic. This ensures a contaminated harvest before the crop is even sown. This represents not only potential economic loss to farmers who have contracts stipulating non-GE or low levels of GE material in crops, it also puts the integrity of the “USDA Organic” label at risk of losing consumer confidence. Furthermore, these farmers derive no benefit from GE traits. Our experience from presenting at dozens of public presentations on this issue is that consumers, retailers, distributors, and even processors are shocked, and then outraged, to learn that organic farmers could be using seed that contains GE traits, when GE is explicitly listed as an “excluded method” in the NOP rule. These stakeholders believe that “excluded” means excluded.

**National Organic Program and Genetic Engineering:** When the USDA published its proposed rule for the NOP in 1997, the rule allowed for the use of many controversial inputs, including GMOs. Members of the organic industry and consumers were outraged by the proposed rule. To date, the USDA has never received more comments on a proposed rulemaking than it did on its first proposed NOP rule.<sup>40</sup> The agency received

more than 275,000 comments in opposition to the rule, most of which abhorred the inclusion of GE organisms on the National List of Active Synthetic Substances Allowed.

*Seed is a particularly critical entry point for GMO contamination given that crop production that begins with contaminated seed will inevitably result in a final organic product with GMO contamination. To maintain the integrity of organic food and feed, we have to maintain the integrity of the seed.*

When asked in an interview about the public’s response to the proposed rule, former Secretary of Agriculture Dan Glickman replied: “There was an absolute firestorm.”<sup>41</sup> Speaking of the more than 275,000 comments, Glickman said: “It was the most this department has ever received on any rule and maybe one of the most the government has received in modern history.” This large consumer outcry showed how important sound organic principles were to

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<sup>40</sup> Federal Register, Volume 65, Number 49 (March 13, 2000); Cummings, Claire. 1997-1998. “Undermining organic: How the proposed USDA organic standards will hurt farmers, consumers, and the environment,” *Pesticides and You*, Vol. 17 No. 4, Retrieved at [www.beyondpesticides.org/infoservices/.../Undermining%20Organic.pdf](http://www.beyondpesticides.org/infoservices/.../Undermining%20Organic.pdf).

<sup>41</sup> Lambrecht, B. 1999. “A biotech warrior stresses subtlety,” *Post-Dispatch Washington Bureau*, June 6, Retrieved at <http://www.cnr.berkeley.edu/~steggall/24Apr99-22Jul99.html>.

the public, and that among other controversial practices, genetic engineering held no place in the organic movement's collective vision of what constituted an organic production system.

The crux of many of the controversies surrounding the proposed rule was that the USDA had ignored many of the NOSB's recommendations, including the recommendation to exclude the "big three," as they came to be known: GMOs, sewage sludge, and irradiation.<sup>42</sup> In fact, many of the comments "angrily called on the agency to obey the NOSB."<sup>43</sup> The USDA is still criticized today for not responding to NOSB recommendations.<sup>44</sup>

Why was the USDA permissive of genetic engineering under the organic standards to begin with? In an internal memo acquired by Mother Jones magazine, the USDA highlights its concern about excluding GE material from organics: "The Animal and Plant Health Inspection Service and the Foreign Agricultural Service are concerned that our trading partners will point to a USDA organic standard that excludes GMO as evidence of the Department's concern about the safety of bioengineered commodities."<sup>45</sup>

Still, the USDA could not ignore the huge public response it received against the proposed rule. In the end, the final rule better reflected consumer and organic industry preferences.<sup>46</sup> The final rule was published on December 21, 2000. The NOP became effective on February 21, 2001, but the program itself was not fully implemented until October 21, 2002.

Regarding genetic engineering, perhaps the most important aspect to remember about the NOP is that it provides production standards only, and does not serve as a certification of the end product. Because NOP regulations are process-based and not product-based, they focus on how a product is grown, harvested and prepared, rather than characteristics of the end product.

The final rule does not allow for *the use of* products derived from genetic engineering in certified organic systems. Section 205.105 of the NOP rule specifically prohibits GE crops from certified organic production systems: "*To be sold or labeled as '100 percent organic' . . . the product must be produced and handled without the use of excluded methods. 'Excluded methods' are 'methods used to genetically modify organisms or*

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<sup>42</sup> "NCSA urges Gore to insure 'strong, credible' organic rule." 1998. ATTRAnews Digest, September, Retrieved at <http://attra.ncat.org/newsletter/news0998.html#orgrule>.

<sup>43</sup> Sligh, Michael. 2002. "Organics at the crossroads: The past and the future of the organic movement," *Fatal harvest: The tragedy of industrial agriculture*, San Francisco, CA: Island Press.

<sup>44</sup> Center for Food Safety. 2004. "Threats to the National Organic Standards," Retrieved at <http://www.centerforfoodsafety.org/wp-content/uploads/2010/10/Threats-to-the-National-Organic-Standards.pdf>; Scott, C. 2006. "Organic <http://centerforfoodsafety.org/ProtectingNOS.cfm> milk goes corporate," *Mother Jones*, April 26, Retrieved at [http://www.motherjones.com/news/update/2006/04/organic\\_milk.html](http://www.motherjones.com/news/update/2006/04/organic_milk.html).

<sup>45</sup> Schmelzer, Paul. 1998. "Label loophole: When organic isn't—organic foods labeling," *The Progressive*, Retrieved at [http://www.findarticles.com/p/articles/mi\\_m1295/is\\_n5\\_v62/ai\\_20527633](http://www.findarticles.com/p/articles/mi_m1295/is_n5_v62/ai_20527633).

<sup>46</sup> Guthman, Julie. 2004. *Agrarian dreams: The paradox of organic farming in California*, Berkeley and London: University of California Press.

*influence their growth and development by means that are not possible under natural conditions or processes and are not considered compatible with organic production.’ Such methods include ‘cell fusion, microencapsulation and macroencapsulation, and recombinant DNA technology (including gene deletion, gene doubling, introducing a foreign gene, and changing the positions of genes when achieved by recombinant DNA technology).”*

On the surface it may seem that the NOP rule clearly addresses agricultural biotechnology by not allowing the use of GE seeds and feed in certified operations. However, as explained above, GE material can enter a farmer’s field and products through means completely out of the farmer’s control, complicating the issue of “excluded methods” as they pertain to the NOP rule. Genetic engineering is listed as an “excluded method,” but GE material that has drifted from neighboring fields is treated as a prohibited substance, not an excluded method.

The rule defines “drift” as “the physical movement of prohibited substances from the intended target site onto an organic operation or portion thereof.” A “prohibited substance” is a substance “which in any aspect of organic production or handling is prohibited or not provided for” in the regulations. Thus, “prohibited substances” include “excluded methods,” including GE material.

There is no set level of tolerance for GE material contamination in organic products in the NOP rule. Several countries have set tolerance levels for GE material in non-GE conventional crops and food. These vary widely, from the European Union (0.9 percent) to Japan (5 percent).<sup>47</sup> A GE crop variety must be approved for import into a country before any level of contamination by that GE crop variety will be acceptable. For example, if a GE corn variety not approved for import by the European Union is discovered in a large shipment of corn that is approved for import, the whole shipment would likely be rejected because there is zero tolerance for unapproved GE crop varieties.

The NOP organic rules do, however, establish a tolerance level for pesticide residue. “Residue testing” is defined as “an official or validated analytical procedure that detects, identifies, and measures the presence of chemical substances, their metabolites, or degradation products in or on raw or processed agricultural products.” “Tolerance level” is “the maximum legal level of a pesticide chemical residue in or on a raw or processed agricultural commodity or processed food.” When organic products test for more than five percent residue of the Environmental Protection Agency’s (EPA) tolerance level for a specific contaminant, the agricultural product cannot be sold, labeled or represented as organic.

Because the NOP does not establish a tolerance level for GE material in organic products, the rule governing the exclusion of

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<sup>47</sup> Ronald, P. and Fouche, B. 2006. “Genetic engineering and organic production systems,” Retrieved at [www.indica.ucdavis.edu/publication/reference/r0602.pdf](http://www.indica.ucdavis.edu/publication/reference/r0602.pdf).



products exceeding tolerance levels from being labeled as organic do not apply to GMO contamination, as it only applies to contaminants for which there is an established EPA or FDA tolerance level. In the Federal Register announcing the final rule, the USDA explains why a tolerance was not established in response to comments for setting a “threshold” for GE material in organic products:

We do not believe there is sufficient consensus upon which to establish such a standard at this time. Much of the basic, baseline information about the prevalence of genetically engineered products in the conventional agricultural marketplace that would be necessary to set such a threshold—e.g., the effects of pollen drift where it may be a factor, the extent of mixing at various points throughout the marketing chain, the adventitious presence of genetically engineered seed in nonengineered seed lots—is still largely unknown. Our understanding of how the use of biotechnology in conventional agricultural production might affect organic crop production is even less well developed.<sup>48</sup>

This response points to a lack of data and tools regarding the presence and measurement of GMOs in organic and conventional fields and products. While this may have been true in 2000, it is clearly not the case in 2010. Contamination in the organic seed supply creates a broken system where organic seed companies are selling organic seed that has GE traits to organic

farmers, likely knowing that the seed contains excluded methods. Since it is never overtly stated that the seed contains GE traits, the planting of such seed is allowed. Organic farmers are therefore using GE seed – using an excluded method – whether they intend to or not. Questions remain as to how often GE seed is being planted, how much of any seed lot has GE material, and to what degree the seed sector knows it is selling GE seed to organic producers. What’s clear is that the integrity of the organic label is at stake.

Seed is both an agricultural product and an input – a special case in all of agriculture. The USDA’s inaction on the seed contamination issue is a large gap in the NOP, especially when farmers’ crops are contaminated by factors completely out of their control. Protecting the integrity of organic seed cannot, however, fall only on the shoulders of the organic community and the USDA. The patent holders and manufacturers of seed technologies must be held liable for negative impacts to the organic community – be it harm to an organic seed company’s reputation or direct economic damage.

**Regulatory Framework:** In addition to the issues at the NOP level regarding excluded methods, the federal government has a seriously inadequate regulatory framework for GE crops. The lack of a strong regulatory system to protect farmers’ rights, domestic and export markets, and the maintenance of the natural resource of seed is at the root of GMO contamination of organic crops. No new law has been created to address the

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<sup>48</sup> Federal Register, Volume 65, Number 246 (December 21, 2000).

multiple risks of agricultural biotechnology. The U.S. government instead relies on a patchwork of laws (most of which predate the technology) and three government agencies' subjective interpretations of their role under these laws to regulate GE crops. Government reports cite serious regulatory shortfalls, especially during the field trial stage, concluding that the USDA's oversight of experimental field trials is "inadequate."<sup>49</sup> In fact, the judicial system has had to step in to correct regulatory and legislative deficiencies. Two federal judges have pointed out that the USDA failed to follow federal law by not conducting a full Environmental Impact Statement for GE alfalfa and sugar beets, specifically citing the impacts on farmers' ability to choose GE-free seed and consumers' ability to choose GE-free food. Once a GE crop is approved for commercial sale and planting ("deregulated") it is not subject to post-market surveillance or reporting, and does not have to be

segregated from conventional crops and products.

**Confronting Contamination:** Organic farmers depend on organic and other non-GE seed varieties to meet organic standards and consumer demand. Seed contamination places an unfair burden on organic farmers by hindering their ability to find GE-free seed. The organic community is responding to the challenges contamination poses in a number of ways, including best practices in seed production; testing and labeling; and litigation and legislation.

In 2010, the National Organic Coalition outlined "Principles to Drive GMO Contamination Prevention Strategies" (see Box 1). Only when decision makers take these principles seriously will we make progress toward protecting the integrity of organic seed and feed sources.

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<sup>49</sup> U.S. Department of Agriculture, Office of Inspector General. 2005. *Audit report: Animal and Plant Health Inspection Service controls over issuance of genetically engineered organism release permits*, Retrieved at [www.usda.gov/oig/webdocs/50601-08-TE.pdf](http://www.usda.gov/oig/webdocs/50601-08-TE.pdf).

Government Accountability Office. 2008. *Genetically Engineered Crops: Agencies Are Proposing Changes to Improve Oversight, but Could Take Additional Steps to Enhance Coordination and Monitoring*, Retrieved at <http://www.gao.gov/products/GAO-09-60>.

### Box 1: Principles to Drive GMO Contamination Prevention Strategies

**Consumer choice** Consumers have the right to choose non-GMO food.

**Consumer right to know** Consumers have the right to know where and how their food was grown.

**Farmers Entrepreneurial Choice** Farmers must have the right and opportunity to grow food, feed, fiber, livestock, and fish that serve important and lucrative domestic and foreign markets.

**Fairness** Personal and corporate responsibility must be upheld. If you own it and are profiting from it you are responsible for the costs associated with contamination prevention and any resultant damage from contamination.

**Liability** Testing for contamination, establishing buffers, reimbursement for lost sales, loss of organic product premiums, clean-up and removal are the costs of doing business that must be borne by the GMO patent holder.

**Precaution** The pre-market burden of proof of safety is on the patent holder. This includes comprehensive evaluation of health, socio-economic, and environmental impacts of GM crops and technologies.

**Sustainability** Agricultural technologies and systems must be assessed for sustainability and those that facilitate further declines in family farming or erode the human and environmental foundations of American agriculture must not be allowed.

**Health, Environmental and Economic Evaluation** Technologies that pose environmental, economic, and health risks should be evaluated before commercialization and tough choices must be made about whether their overall societal benefits outweigh their costs.

**Parity** There must be a long-term commitment to supporting the vitality of diverse agricultural enterprises, including parity of public investment, infrastructure, marketing, technical assistance, research, and funding.

**Transparency** Ongoing documentation, tracking and labeling systems must be established to monitor the movement of GMOs in the environment, seed banks, on-GMO seed stocks, and food.

**Diversity** Society and agriculture will greatly benefit from the rapid reinvigoration of public cultivars and breeds to restore genetic diversity on farms, ensure greater farmer seeds/breeds choices, and to enhance national food security.

**Best Practices** There is at least one corn seed company working on best production practice standards for non-GE seed crops that would be managed similar to other forms of seed certification.<sup>50</sup> Such standards would be an attempt to mitigate the rate of contamination in corn seed production. While this may reduce contamination rates, it

will not give 100% protection, and adds additional cost and burden to organic seed producers – a cost that will be carried by organic farmers paying higher prices for seed.

**Testing** Even though the NOP does not require testing for GE material, some farmers, seed companies, food companies,

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<sup>50</sup> Charles Brown (Brownseed Genetics). Personal communication, January 24, 2010.

and consumer/environmental groups are investigating the extent of GE contamination through testing.<sup>51</sup> Testing remains limited, as PCR tests for each seed lot would be financially prohibitive. In addition, when contamination is found there is no easy recourse for collecting compensation for contamination damages, the ongoing costs of testing, contamination buffers, and potential clean-up.

**Labeling** Legislative efforts to require labeling, including the Genetically Engineered Food Right to Know Act (H.R. 6635), have been unsuccessful.<sup>52</sup> Still, polls show that the majority of consumers want GE foods labeled.<sup>53</sup> Absent labeling requirements for GE food ingredients, consumers continue to view the organic label as a legitimate alternative given the USDA's rule excluding the use of genetic engineering. New labels have been introduced, but none that guarantee inputs or products that are free of GE material.<sup>54</sup>

**Litigation** Because the USDA is not following environmental laws, and regulations are failing to protect organic and other non-GE markets, farmers and non-governmental organizations have been forced to use the courts to slow or stop contamination by challenging the approval of specific GE crops, and with some success:

- **GE alfalfa** A precedent-setting court decision in 2007 found that the USDA failed to address concerns that GE alfalfa will contaminate conventional and organic alfalfa. The court issued a permanent injunction, barring further planting of GE alfalfa pending the results of an EIS. A court had never before vacated a USDA decision to approve a GE crop. Although the Supreme Court reversed part of the lower court's ruling in June of 2010, it left in place the ban on planting GE alfalfa pending completion of the EIS and future regulatory decisions.

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<sup>51</sup> Union of Concerned Scientists. 2004. *Gone to seed: Transgenic contaminants in the traditional seed supply*, Retrieved at [http://www.ucsusa.org/food\\_and\\_environment/genetic\\_engineering/gone-to-seed.html](http://www.ucsusa.org/food_and_environment/genetic_engineering/gone-to-seed.html); Organic & Non-GMO Report. 2010. "Organic farmers report increasing contamination with corn," April, Retrieved at [http://www.non-gmoreport.com/articles/apr10/organicfarmers\\_gmocontamination.php](http://www.non-gmoreport.com/articles/apr10/organicfarmers_gmocontamination.php).

<sup>52</sup> Congressman Dennis Kucinich, "Issues: Agriculture," Retrieved at <http://kucinich.house.gov/Issues/Issue/?IssueID=1459>.

<sup>53</sup> Hallman, W. K., Hebden, W. C., Aquino, H.L., Cuite, C.L. and Lang, J.T. 2003. "Public perceptions of genetically modified foods: A national study of american knowledge and opinion," Retrieved at [www.foodpolicyinstitute.org/docs/reports/NationalStudy2003.pdf](http://www.foodpolicyinstitute.org/docs/reports/NationalStudy2003.pdf). (finding that 94% of respondents favor labeling of foods containing GE ingredients); Langer, G. 2001. "Behind the label: Many skeptical of bio-engineered food," ABCNews, June 19, Retrieved at <http://abcnews.go.com/sections/scitech/DailyNews/poll010619.html> (finding that 93% of respondents favor labeling of foods containing GE ingredients).

<sup>54</sup> The Non-GMO Project. 2010. "Understanding Our Seal," Retrieved at <http://www.nongmoproject.org/consumers/understanding-our-seal/>. The Non-GMO Project label does not guarantee that products are free of GMO presence, but rather that companies have followed testing protocols as outlined in the projects guidelines.

- **GE sugar beets** Following the landmark alfalfa case, a similar lawsuit was filed challenging the USDA's approval of GE sugar beets. Plaintiffs, including Organic Seed Alliance, argued for a thorough assessment of environmental, health, and associated economic impacts of deregulating GE sugar beets, as required by federal law. Once again, the court ordered an EIS for the GE variety. At the time of this report's completion, the USDA was seeking partial deregulation of GE sugar beets while the EIS is being completed (i.e., allowing GE sugar beet production under permits).
- **GE pharmaceutical crops** A federal court found that the USDA violated environmental laws in permitting four companies to plant pharmaceutical GE crops in Hawaii absent preliminary environmental reviews.<sup>55</sup>

Litigation involving GE crops is time-consuming and expensive. However, in the face of weak regulatory frameworks, the courts appear to be farmers' only recourse in protecting themselves from irreparable economic and environmental harm resulting from the widespread planting of GE crops.

**Public Comment** Opponents of GE crops largely rely on public comment periods and legal petitions to voice concern and influence GE crop regulatory decisions.<sup>56</sup> As previously mentioned, when the USDA first released a draft of the proposed organic rules that

allowed genetic engineering as a method in organic production, over 275,000 consumers responded; submitting the highest number of comments the agency has ever received. All but three of these comments were opposed to GE usage. GE was excluded, but there have been no protections for organic farmers and companies when GE material is introduced into their production systems.

**State Legislation** Local initiatives focused on protecting organic farmers and their markets from undue risks associated with GE crops have popped up across the U.S. with some success. These local and state initiatives seek to address the shortcomings of federal regulations governing GE crops in order to avoid contamination. These initiatives range from outright bans on planting GE crops to establishing sampling protocols in cases of alleged seed patent infringement.

Five counties in California have passed initiatives that place limitations on agricultural biotechnology, most of which ban growing GE crops. Dozens of New England towns have also passed resolutions regarding GE crops, almost a quarter of which call for moratoriums on planting GE seeds.<sup>57</sup>

In 2006, the Vermont legislature passed the most comprehensive farmer protection bill in history. The bill was the first to include language that held manufacturers of patented seed liable for economic damage in

<sup>55</sup> *Center for Food Safety v. Johanns*, 451 F.Supp.2d 1165 (D. Haw. Sept. 1, 2006).

<sup>56</sup> For example, in March 2003, five farm organizations and two state senators filed a citizen petition asking USDA to require an Environmental Impact Statement concerning the deregulation of GE wheat. See <http://worc.org/userfiles/WheatUSDApet.pdf>.

<sup>57</sup> "Background: Industry aims to strip local control of food supply." 2006. Environmental Commons, Retrieved at <http://environmentalcommons.org/seedlawbackgrounder.html>.

cases of contamination. Despite passing both houses, and even after thousands of phone calls to the Governor's office, he still vetoed the bill.

*The organic community fought hard for standards that reflect strong organic principles during the beginning phases of the NOP, and excluding GE products was an important component of this value system.*

Other states have had success, but their successes have been limited to less comprehensive legislation. California passed a bill in 2008 that offers farmers some protections from mistakenly being targeted by biotechnology firms for patent infringement. The law levels the playing field by establishing a mandatory crop sampling protocol to prevent patent owners from sampling crops without the permission of farmers.<sup>58</sup> The law also protects farmers from liability resulting from unwittingly acquiring

patented traits through such processes as GE pollen drift. Maine passed a similar bill the same year.<sup>59</sup> Other states have passed related legislation (North Dakota, South Dakota, and Indiana) while others have tried but been unsuccessful (Illinois, Montana, New Mexico, and Washington).

Other examples of state legislation include:

- Minnesota's 2007 legislature passed a bill that required an Environmental Impact Statement for the release of GE wild rice.<sup>60</sup>
- The Arkansas State Plant Board banned for the 2007/2008 growing season two GE rice varieties that were involved in GE rice contamination events and mandated testing of all seed stocks.<sup>61</sup>
- The California Rice Commission established a moratorium on GE rice field trials until safeguards are in place.

And two regulatory/legislative actions, though not GE-specific in language, prohibited and/or restricted the planting of a crop based on the risk of genetic contamination to seed producers. The crop

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<sup>58</sup> Genetic Engineering Policy Alliance. 2008. "California's first law protecting farmers from the threats of genetic engineering signed by Governor," Retrieved at [http://www.gepolicyalliance.org/action\\_alert\\_support\\_ab541.htm](http://www.gepolicyalliance.org/action_alert_support_ab541.htm).

<sup>59</sup> "New laws passed for GE crops." 2008. Maine Today, April 10, Retrieved at <http://news.mainetoday.com/updates/025169.html>.

<sup>60</sup> Minnesota Legislative Session 85 (2007-2008). H.F. 1663, Retrieved at <http://www.leg.state.mn.us/>.

<sup>61</sup> Environmental Commons. 2007. "Food Democracy Legislation Tracker," Retrieved at <http://environmentalcommons.org/tracker2007.html>.

that was restricted, canola, happens to also primarily be a GE crop.

- Oregon’s Department of Agriculture restricted plantings of canola to protect vegetable seed production from genetic contamination.<sup>62</sup>
- Washington’s Governor signed legislation to create “brassica seed production districts” to protect the vegetable seed industry from contamination of canola.<sup>63</sup>

**Conclusions:** The organic community has long been concerned about the integrity of its products, and GMO contamination has been an ongoing risk point in the integrity of organic production systems. Although genetic engineering is an “excluded method,” its presence in organic products shows it is not totally excluded. It is time for the organic community to confront a problem that was only partially dealt with at the time the organic standards were written. Seed is an essential place to take a stand.

The NOP was built on transparency, and not addressing the contamination issue now will lead to future problems that may prove irreversible, including a loss of consumers’ confidence in the organic label. The organic community fought hard for standards that

reflect strong organic principles during the beginning phases of the NOP, and excluding GE products was an important component of this value system.

As a federal ban on genetically engineered crops is unlikely, policies must be adopted that address issues associated with the unwanted contamination of organic products by GE material.

The USDA’s oversight of GE crops must improve, starting with field trials. To begin, recommendations given by the Inspector General of Agriculture (2004)<sup>64</sup> and Government Accountability Office (2008)<sup>65</sup> should be adopted. Both organic and conventional crops risk contamination by GE crops not approved for commercial use. Strengthening field trial oversight could include more involvement of state agriculture departments. For deregulated crops, a monitoring program should be implemented as a way to identify risks not identified in risk assessments during field trials. Most significantly, the USDA should require growers of GE crops to establish buffer areas and other containment measures to mitigate pollen flow from GE crops to neighboring fields.

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<sup>62</sup> Oregon Department of Agriculture. 2005. Canola Growing Regulations, Retrieved at [http://www.oregon.gov/ODA/PLANT/canola\\_summary.shtml](http://www.oregon.gov/ODA/PLANT/canola_summary.shtml).

<sup>63</sup> Washington State Legislature. 2007. Brassica seed production, 15 RCW 15.51, Retrieved at <http://apps.leg.wa.gov/rcw/default.aspx?cite=15.51&full=true>.

<sup>64</sup> U.S. Department of Agriculture, Office of Inspector General. 2005. *Audit report: Animal and Plant Health Inspection Service controls over issuance of genetically engineered organism release permits*, December, Retrieved at <http://www.liebertonline.com/doi/pdf/10.1089/blr.2006.25.186>.

<sup>65</sup> Government Accountability Office. 2008. *Genetically Engineered Crops: Agencies are proposing changes to improve oversight, but could take additional steps to enhance coordination and monitoring*, November 5, Retrieved at <http://www.gao.gov/products/GAO-09-60>.

Additionally, a federal Farmer Protection Act would protect farmers against GMO contamination in five ways, ensuring that (1) in cases where GE companies claim patent infringement from farmers saving seed, the venue and choice of law is the state where the farmer resides; (2) an independent third party participates in patent infringement investigations; (3) farmers are not held liable for patent infringement when small amounts of GE content is discovered on their property

and the presence provides no economic benefit; (4) the manufacturer of GE crops is held strictly liable for economic damage caused by contamination, and (5) a “pay-out” compensation mechanism is funded by the patent owner.

Please see Priority Goals in section 7 of this report for additional actions and policy recommendations regarding GMO contamination of organic seed systems.