

U.S. Organic Grain Contamination – A Major Dilemma

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All Genetically Engineered (GE) Grains and Seeds

With statistics on approval for U.S. cultivation and U.S. human consumption

1. **Beans:** none approved for cultivation and none approved for human consumption
2. **Canola:** 19 varieties approved for cultivation and 19 approved for human consumption
3. **Corn:** 40 varieties approved for cultivation and 39 approved for human consumption
4. **Cottonseed:** 24 varieties approved for cultivation and 27 approved for human consumption
5. **Flaxseed:** 1 variety approved for cultivation and 1 approved for human consumption
6. **Rice:** 3 varieties approved for cultivation and 3 approved for human consumption
7. **Soybean:** 24 varieties approved for cultivation and 19 approved for human consumption
8. **Wheat:** none approved for cultivation and 1 approved for human consumption

Source: International Service for the Acquisition of Agri-Biotech Applications (www.ISAAA.org)

6 Threats to Organic Grains and Seeds

Grains and seeds (see table above) are at highest risk of *genetically engineered organism (GEO)* cross-contamination. GEOs and organic crops currently cannot coexist in the United States free of cross-contamination—especially grain and seed crops—for the following reasons:

1. No GEO “Legal-Limit” Threshold

The U.S. has not created a “legal-limit” regulation for GEO/organic crop cross-contamination as exists for pesticide residue contamination set at a maximum of 5% of what’s permissible with conventionally grown crops. This means all organic crops in the U.S. can legally be cross-pollinated with GEO DNA or organic crops “accidentally” planted with GEO contaminated seeds at a “reasonable” level and still be sold as organic in the U.S. As to what this arbitrary “reasonable” level is, no one knows because a legal-limit has not yet been established. [1]

Even the *Non GMO Project™* understands the ubiquitous nature of GEOs in the U.S. food-supply. Their current “Action Threshold” for allowable GE material in grains and seeds is .25% while it’s an astounding .9% for other foods, ingredients, supplements, personal care products, and all other products ingested or applied topically. What’s worse is that under *USDA Organic* verification, there is no specific limit at all. These foods could possibly contain 2% or more GE ingredients. [1,4]

2. Inadequate “Buffer Zones”

Land distance between GEO farmlands and organic farmlands in the U.S. only require an unspecified distance or “buffer zone” between organic and non-organic croplands ([§205.202 \(c\) Land requirements](#)) enabling GEO seed, GEO pollen, and synthetic pesticide contamination. This commonly occurs by way of wind, animals, and insects which are nature’s means of spreading plant DNA. These natural methods of genetic proliferation are impossible to avoid especially with the U.S.’s extremely ineffective organic regulatory protection standards that rely heavily on vague terminology such as “buffer zone.” [1,3,5,6,7,8,9,10,11]

3. GEO Seed Drift and Spread

“7 High- Risk Grains and Seeds” Threatened by GEO Seed Contamination

Corn, Soybean, Canola, Flaxseed, Cottonseed, Rice, and [Wheat](#)

- **GEO Seed Drift:** Almost all sources of organic corn, soybean, canola, cottonseed, flaxseed, rice, and even wheat have an exceptionally high probability of being GEO contaminated because of unspecified "buffer zone" boundaries between GEO and non-GEO croplands that cannot stop wind-blown GE seeds from drifting. [1,5,8,9]
- **GEO Seed Spread:** Animals such as birds, insects, rodents, marsupials, and human error can easily spread all GE grains and seeds for miles across unspecified "buffer zones" into organic croplands which means all 7 varieties of organic grains and seeds are at risk of GEO seed contamination. [1,5,8,9]

4. GEO Pollen Drift and Spread

“7 High-Risk Grains and Seeds” Threatened by GEO Pollen Contamination

Corn, Soybean, Canola, Flaxseed, Cottonseed, Rice, and [Wheat](#)

- **GEO Pollen Drift:** Almost all sources of organic corn, soy, canola, and flaxseed have a high probability of being contaminated by wind-blown GEO pollen drift while rice and wheat have a moderate to low risk. Because of unspecified "buffer zone" boundaries that cannot protect croplands against GEO pollen drift effectively, wind-blown pollen is a major concern. Some pollen is known to travel for miles by wind-blown insects on windy days possibly contaminating organic croplands up to 165 km (100 miles) away. [1,5,9,11]
- **GEO Pollen Spread:** Carpenter bees are known to cross-pollinate up to a 6 km radius from their hive which means they can cross-pollinate GE crops with organic crops up to a 12 km (7.5 mile) distance away. This means all 7 varieties of organic grains and seeds are at risk of GEO cross-pollination. [1,3,5,7,9]

5. Synthetic Pesticide Drift

The current unspecified and inadequate “buffer zone” standard for protecting against "pesticide drift" is known to be highly ineffective and contributes to the organic farmers’ crop-loss which severely interrupts organic farming nationwide. This is because there are no laws protecting organic farmers from pesticide drift such as precautionary measures controlling for drift from conventional farms. Organic farmers must solely rely on “good neighbor practices” for protection against conventional farm pesticide drift. This is ludicrous simply because how is any farmer going to stop his neighbor from contaminating his field lawfully if there are no protections for organic farmers? Most conventional farmers are likely uninterested in spending extra time and money to protect his neighbor’s organic crops if it’s not financially beneficial. For example, the use of pesticide application safety-nozzles that reduce the possibility of drift in regions where organic farms are present is "optional" for conventional farmers putting all organic crops at significant risk of synthetic pesticide contamination and often even loss of organic certification. [1,6,9,10]

6. GE Grain and Seed DNA Everywhere

The U.S. is the largest producer of GE crops worldwide (2014), by far, outperforming the next in line by 173%. The next is Brazil followed by Argentina, India, Canada, and then China. These six countries produce over 90% of all GE crops worldwide. The majority of GE crops produced in these countries are four crops: corn, soybean, canola, and cottonseed. [1,2]

These four crops are "highly suspect" of GEO cross-contamination through the drifting and spreading of GE seeds and pollen into organic agriculture. Their genetics have become such a strong linchpin to U.S. agriculture that they are unavoidably present in almost everything we eat, drink, and often even breathe. Their genetics are found in most foods (including organics) encompassing processed foods, meats (farm raised fish, pork, poultry, and beef), dairy products, and most beverages (containing corn syrup). Their genetics are even present in the air we breathe due to "pollen drift" blown many miles from GE corn, soybean, canola, and cottonseed farmlands on windy days. [1,9,11]

Avoidance

If you'd like to avoid GEO grains and seeds completely, it would be wise to do one of the following:

1. Avoid the "7 high-risk grains and seeds" altogether (most certain method)
2. Purchase from farmers that grow their crops a "minimum" distance of 100 miles from other non-organic crops (likely effective).
3. Purchase imported varieties of the "7 high-risk grains and seeds" where GE agriculture is banned such as from New Zealand, Switzerland, and provinces throughout the European Union countries (highly effective).

Currently in the U.S., there are no bans on the cultivation of GE crops nationwide which almost guarantees most U.S. food ingredients have some GEO contamination.

On the Precipice — A "No Turning Back" Scenario

"Society is currently in a watershed era as to whether future world food is produced predominantly via patented transgenic [GEO] crops, largely untested as to their long-term health or ecological effects, or whether food production is based on crops whose genetic integrity is intact, having been subject exclusively to the intra-genus and intra-family plant breeding methods of many millennia, and whose resultant proteins are consistent with our own co-evolved genetic, proteomic, and physiological systems."

Don Lotter (2009)

[The Genetic Engineering of Food and the Failure of Science](#)

International Journal of Sociology of Agriculture and Food

Research Scientist and Professor

UC Davis: Specializing in "Agricultural Ecology"

Read more about him [here](#).

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