

# Ten good reasons why GMOs are not compatible with organic agriculture

[As posted on the Rodale Institute website](#)



**By Jim Riddle**

Despite fundamental differences in what they represent, there are occasional calls to allow the use of genetic engineering (which produces genetically modified organisms, known as GMOs) within the USDA National Organic Program. GMO varieties are currently most widespread in corn, soybean, canola and cotton crops, in dairy production, and in minor ingredients, such as dairy cultures, used in food processing, but new products are being introduced and commercialized.

Here are 10 essential points that I believe show why GMOs are incompatible with organic production:

**1. Basic science.** Humans have a complex digestive system, populated with flora, fauna, and enzymes that have evolved over millennia to recognize and break down foods found in nature to make nutrients available to feed the human body. GMO crops and foods are comprised of novel genetic constructs which have never before been part of the human diet and may not be recognized by the intestinal system as digestible food, leading to the possible relationship between genetic engineering and a dramatic increase in food allergies, obesity, diabetes, and other food-related diseases, which have all dramatically increased correlated to the introduction of GMO crops and foods.

**2. Ecological impact.** Organic agriculture is based on the fundamental principle of building and maintaining healthy soil, aquatic, and terrestrial ecosystems. Since the introduction of GMOs, there has been a dramatic decline in the populations of Monarch butterflies, black swallowtails, lacewings, and caddisflies, and there may be a relationship between genetic engineering and colony collapse in honeybees. GMO crops, including toxic Bt corn residues, have been shown to persist in soils and negatively impact soil ecosystems. Genetically modified rBST (recombinant bovine somatotropin, injected to enhance a cow's milk output) has documented negative impacts on the health and well being of dairy cattle, which is a direct contradiction to organic livestock requirements.

**3. Control vs harmony.** Organic agriculture is based on the establishment of a harmonious relationship with the agricultural ecosystem by farming in harmony with nature. Genetic engineering is based on the exact opposite -- an attempt to control nature at its most intimate level - the genetic code, creating organisms that have never previously existed in nature.



**4. Unpredictable consequences.** Organic ag is based on a precautionary approach - know the ecological and human health consequences, as best possible, before allowing the use of a practice or input in organic production. Since introduction, genetic modification of agricultural crops has been shown to have numerous unpredicted consequences, at the macro level, and at the genetic level. Altered genetic sequences have now been shown to be unstable, producing unpredicted and unknown outcomes.

**5. Transparency.** Organic is based on full disclosure, traceability, information sharing, seed saving and public engagement. Commercial genetic engineering is based on secrecy, absence of labeling, and proprietary genetic patents for corporate profits. The "substantial equivalence" regulatory framework has allowed the GMO industry to move forward without the benefit of rigorous, transparent scientific inquiry. The absence of labels has allowed genetically modified products into the U.S. food

supply without the public's knowledge or engagement., and without the ability to track public health benefits.

**6. Accountability.** Organic farmers must comply with NOP requirements and establish buffer zones to protect organic crops from contamination and from contact with prohibited substances, including genetically engineered seeds and pollen. Genetically engineered crops do not respect property lines and cause harm to organic and non-GMO producers through "genetic trespass," with no required containment or accountability.

**7. Unnecessary.** It is well established that healthy soils produce healthy crops, healthy animals, and healthy people. Research and development should focus on agricultural methods, including organic, which recycle nutrients to build soil health, producing abundant yields of nutrient dense foods, while protecting environmental resources. To date, recombinant genetic modification has contributed to the development of herbicide-resistant weeds and an increase in the application of synthetic fertilizers and pesticides, with associated increases in soil erosion and water contamination, while producing foods with lower nutritional content. Technologies, such as genetic engineering, which foster monocropping are not compatible with organic systems, where soil-building crop rotations are required.

**8. Genetic diversity.** Organic farmers are required to maintain or improve the biological and genetic diversity of their operations. Genetic modification has the exact opposite effect by narrowing the gene pool and is focused on mono-cropping GMO varieties.

**9. Not profitable.** According to the 2008 Organic Production Survey conducted by the USDA National Ag Statistics Service, organic farmers netted more than \$20,000 per farm over expenses, compared to conventional farmers. Use of GMO varieties has lowered the net profit per acre for conventional producers, forcing them to farm more land in order to stay in business.

**10. No consumer demand.** Consumers are not calling for organic foods to be genetically engineered. In fact, over 275,000 people said "no GMOs in organic," in response to the first proposed organic rule in 1997. "Organic" is the only federally regulated food label, which prohibits the use of genetic engineering. By genetically engineering organic foods, consumer choice would be eliminated, in the absence of mandatory labeling of all GMO foods.

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