
Many Minnesota farmers grow genetically engineered (GE) crops, or more specifically, crops that have one or more genetically engineered traits. The introduction of new GE crops is governed by a federal permit process that incorporates state-level review and oversight. This publication briefly describes the current regulatory system and the state's role.

What are genetically engineered organisms?

Scientists create genetically engineered organisms (GEOs)—also referred to as genetically modified organisms—by directly manipulating a living thing's genetic makeup, or DNA. This is usually performed by transplanting genetic material from one organism to another or by manipulating an organism's existing genes. Genetic engineering is a common practice in United States agriculture, allowing scientists to create organisms (primarily new crop varieties) with desired traits like disease or pest resistance and herbicide tolerance.

What is an example?

Bt corn is a corn variety infused with a gene transplanted from the soil bacterium *Bacillus thuringiensis*. The foreign gene causes the corn plant to produce a protein generally considered safe when ingested by most insects, mammals (including humans), birds, and fish but fatal to the corn borer, a destructive insect. The federal government and the Minnesota Department of Agriculture (MDA) first authorized the commercial use of Bt corn in 1995.

How are GE crops regulated?

Guided by a “coordinated framework” first adopted in 1986, three federal entities share oversight responsibility for agricultural GEOs: the Department of Agriculture (importation, interstate movement, and field trials), the Environmental Protection Agency (GE pesticides and pesticides genetically incorporated into plants), and the Food and Drug Administration (safety of GE food and feed). In general, GE crops are created in secure facilities then—with federal approval—planted in outdoor test plots (i.e., “released” into the environment) and monitored. Put simply, the federal government may deregulate a GE crop, thereby allowing it to be sold and commercially planted in Minnesota and elsewhere, if certain conditions are met. First, the field trials must be successful. Second, the GE crop's owner must demonstrate to federal regulators that (a) the crop does not pose a risk to other beneficial plants, and (b) where applicable, a pesticide incorporated into the plant via genetic engineering does not pose an unreasonable risk to human health or the environment.

What role does the state play?

Prior to August 1, 2023, Minnesota law mandated a state-level approval process for GE crops that essentially duplicated the federal process. Under this system, an MDA permit would be required before a federally approved field trial could occur in Minnesota if the organism was not exempt under MDA's administrative rules. In practice, most agricultural crops were exempt from the state permit requirement. In addition, prior to August 1, 2023, state law required MDA approval before a federally deregulated GE crop could be used commercially in the state (i.e., sold to, and planted by, farmers).

In 2023, Governor Tim Walz recommended, and the legislature enacted, significant changes to the state program. As of August 1, 2023, an MDA permit is no longer required for nonexempt organisms before (1) a federally permitted field trial may occur in Minnesota, or (2) a federally deregulated GE crop may be sold or planted in the state. However, MDA may recommend that the responsible federal agency add conditions to a federal release permit or request that the agency not allow a proposed field trial if MDA determines that the release “would create a hazard to the agricultural, forest, or horticultural interests of the state or the state’s general environmental quality.” MDA must post notice in the state Environmental Quality Board’s *EQB Monitor* and notify the applicable county board or Tribal council when the agency receives federal notice of a proposed release in Minnesota. Finally, MDA must notify the appropriate federal agency if (a) the responsible party violates the terms of their federal release permit, or (b) MDA determines that the permit’s terms and conditions have proven inadequate to prevent unreasonable adverse effects on the state’s environment.

Which GEOs have been approved and can be grown by farmers?

During the approximately 30 years that the state approval program for GE crops was in place, MDA approved GE varieties of many different crops, including barley, canola, corn, potato, soybean, squash, sugarbeet, sweet corn, tomato, and wheat. In addition, the agency approved a GE version of rhizobium—a soil bacterium capable of fixing nitrogen in the soil.

Do Minnesota farmers plant GEOs?

Farmers in Minnesota and across the country grow GE crops, including corn and soybeans. According to the United States Department of Agriculture, GE varieties accounted for nearly 93 percent of all corn planted in Minnesota in 2022, up from 37 percent in 2000. For soybeans, Minnesota farmers planted 96 percent of total acres to GE varieties in 2022, up from 46 percent in 2000. Farms nationwide displayed a similar trend over the period, with GE corn planted on 93 percent of corn acres in 2022, up from 25 percent in 2000, and GE soybeans planted on 95 percent of soybean acres, up from 54 percent in 2000.

Responding to consumer demand for GEO-free foods, a portion of Minnesota crop farmers do not grow GE varieties. Under state and federal law, certified organic farmers cannot grow GE crops.

How do Minnesota’s laws compare to those in other states?

Prior to August 1, 2023, Minnesota was the only state with a comprehensive set of laws and regulations requiring a separate state approval process for federally approved GE crops. By eliminating the state approval process, Minnesota policymakers joined the other U.S. states in largely deferring to federal regulators regarding the oversight and approval of new GE crops.



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