

Genetically Modified Organisms (GMO's)

Crops categorized as GMOs are developed through genetic engineering, which is also referred to as biotechnology. To create a GMO, plant breeders take a desirable trait found in nature and transfer it from one plant or organism to the plant they want to improve¹. Some examples of desirable traits commonly transferred include resistance to insects and disease and tolerance to herbicides that allow farmers to better control weeds. Other traits include those that enhance drought tolerance, reduce food waste, enhance nutritional content and improve manufacturing processes such as those required for biofuel production.

Nutrien supports variety development utilizing traditional plant breeding methods, as well as genetically modified organisms (GMO's) and gene editing techniques as methods to expand genetic variation in crops and for the introduction of value-added traits.

To meet growing global food requirements the world will need to sustainably intensify agricultural production. This challenge requires science-based solutions to increase production on existing land, while protecting the environment. Protecting water, soil, air and biodiversity are paramount to this task. Innovation and responsible application of technologies play a critical role in meeting this global challenge.

GMO crops provide benefits for growers, consumers and the environment including higher yields, improved disease tolerance, insect resistance, better tolerance in drought conditions, as well as land use efficiency.

As with all Nutrien products and services, safety is paramount. The global regulatory framework for GMO development and approval represents over 30 years of research and safety reviews by independent regulatory agencies.

Nutrien supports the exhaustive research conducted by national and international scientific authorities. Leading global scientific authorities and multilateral agencies like the U.S. National Academy of Sciences, the United Nations Food and Agriculture Organization, and the World Health Organization have concluded that GMO food crops do not pose any more risk to people, animals or the environment than any other food crop.² This is further supported by extensive research and regulations concerning the safety of GMO crops by agencies such as U.S. Department of Agriculture, U.S. Environmental Protection Agency and the U.S. Food and Drug Administration and in Canada by the efforts of the Canadian Food Inspection Agency, Health Canada, and Environment Canada which oversee product development. Seed accounts for approximately 8.5% of Nutrien's total revenue. Over 90 percent of all seed sold to growers is sourced from major seed technology partners and we retail these seed products as part of our total solutions offering.

¹ "GMO Basics", GMO Answers, March 27, 2020, <https://gmoanswers.com/gmo-basics>

² Learned Societies and National Academies Endorsing Safety of Genetically Modified Crops. (2013)



Nutrien Ag Solutions does not own any GMO traits. We license in GMO traits and incorporate them into Nutrien owned germplasm to develop varieties with the licensed GMO traits to be sold under the Dynagro and Proven brands.

Our portfolio consists of both GMO and conventionally bred seed varieties. We sell GMO Canola, Corn, Soybean and Cotton seeds. We are also directly involved in breeding improved varieties of canola, cotton, cereals, grain sorghum, rice, turf and forage seed. Nutrien Ag Solutions contracts seed production to sell in our own private labels called Dyna-Gro and Proven. All seed is tested for purity before we take ownership.