

On average, GMOs take **13 years** and **\$130 million** of R&D **BEFORE** coming to market¹

The **regulatory process** alone can take **5 to 7 years**

REGULATORY SCIENCE

75+ different studies² are conducted to verify that each new GMO is as safe as its conventional counterpart:

Safe to grow

- Crop growth is the same as non-GMO varieties
- Crop exhibits intended characteristics (e.g., insect resistance)



Safe for the environment

- Safe for soil, air, and water
- Safe for beneficial insects and habitats



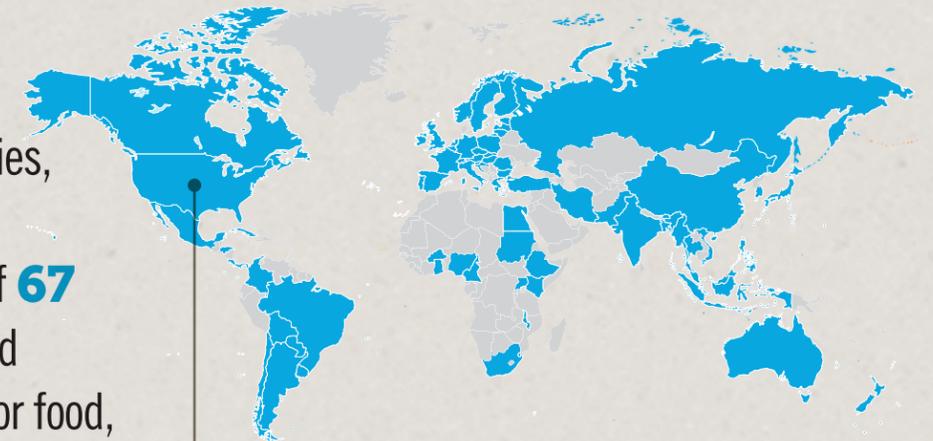
Safe to eat

- Same nutrients as non-GMO crops
- No new dietary allergens



REGULATORY REVIEW

Since 1992, more than **40 government agencies³** have given approvals for GMO food, feed, and cultivation. In many countries, multiple agencies are involved in the regulation of GMOs. Overall, a total of **67 countries³** have formally adopted (including importing) biotech crops for food, feed, and cultivation in 2017.



U.S. REGULATORY AGENCY REVIEWS



Safe to grow



Safe for the environment



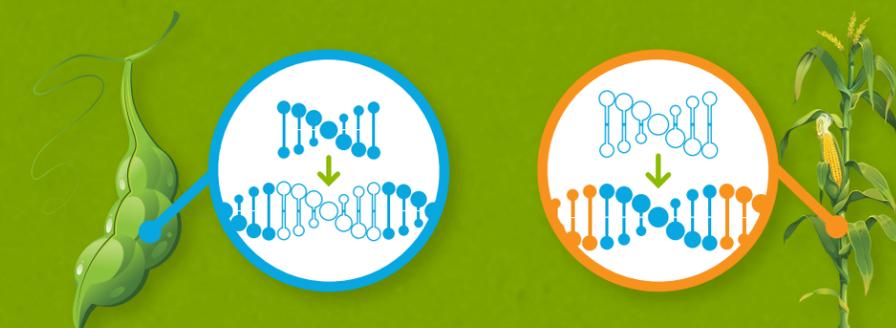
Safe to eat

For thousands of years, farmers and plant breeders have used plant selection and breeding techniques to develop crops that can produce more yield, survive challenging climatic conditions like drought or cool temperatures, produce desirable traits like increased sweetness or enhanced nutrition, and more. Here are some examples of different plant breeding techniques:

Genetically Modified Organism (GMO):

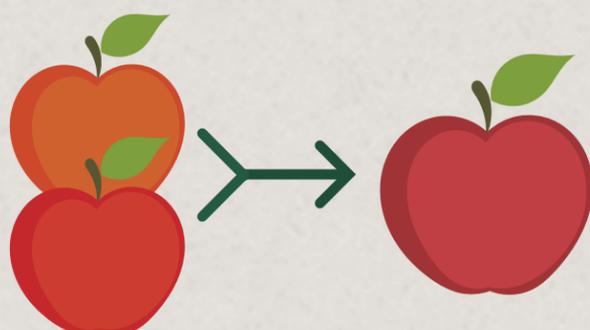
A GMO crop is developed using techniques that enable us to take a beneficial trait (like insect resistance or drought tolerance) from one organism and transfer it into a crop plant.

There are 10 GMO crops commercially available in the U.S. today.



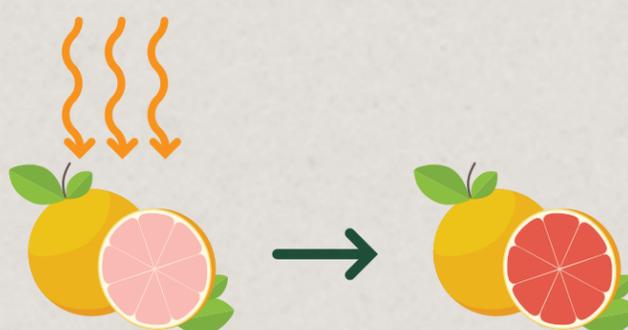
Other Forms of Plant Breeding

Traditional Crossbreeding



Combining the desirable traits of two plants to create a new and improved variety. Many apple varieties, such as the Honeycrisp, were developed in this way.

Mutagenesis



Using radiation and other mutagens (physical or chemical) to induce random mutations in plants, activating new, desirable varieties. This process helped deepen the color of the Ruby Red and Star Ruby grapefruits.

Gene Editing



CRISPR-Cas9 or TALENs targets specific locations within the plant's genome/DNA and allows for precise edits or deletions. Low-gluten wheat and other desirable traits that might be hard to achieve with conventional breeding have been created using this tool.