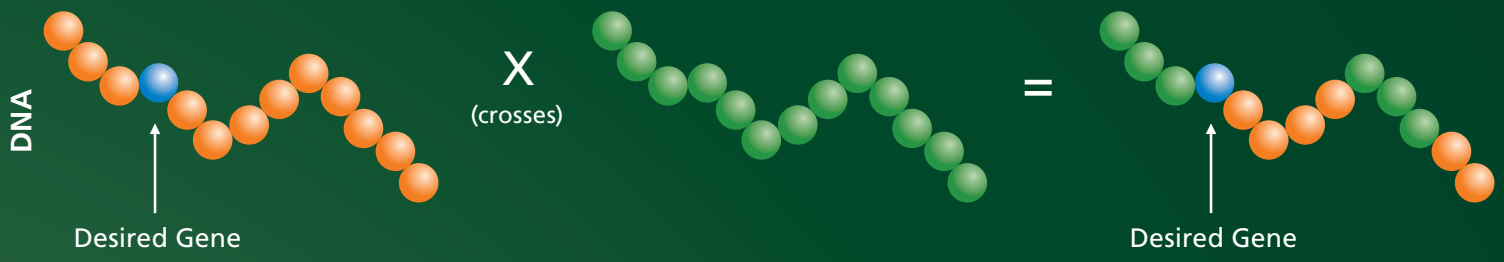
Traditional Plant Breeding

A chromosome contains thousands of genes.
Traditional plant breeding combines many genes at once.

Traditional Donor		Recipient Variety		New Variety (many genes are transferred)



Using traditional genetic modification methods, such as cross-fertilization, scientists can produce a desired trait, such as a hardier plant. But in doing so, they mix thousands of genes, requiring many attempts over many years to remove the unwanted traits that occur.

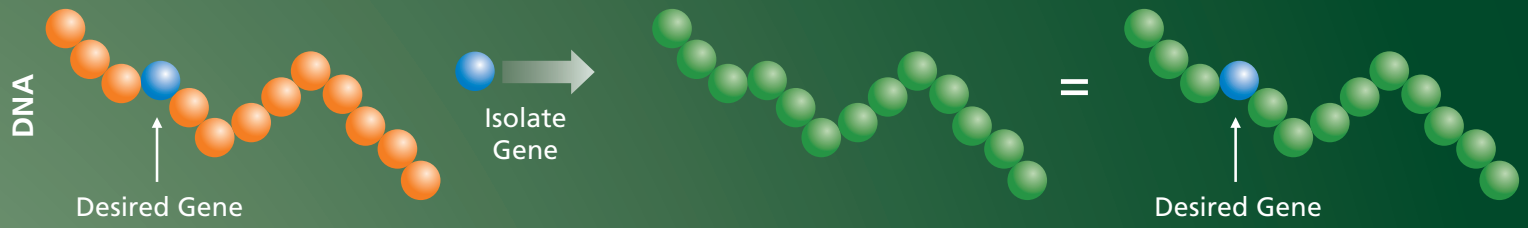
Newer methods of genetic modification, in the form of genetic engineering, are more precise and predictable—and faster. By controlling the insertion of one or two genes into a plant, scientists can give it a specific new characteristic without transferring undesirable traits.

Modern Plant Breeding

(genetic engineering)

Using plant biotechnology, a single gene may be added.

Donor	Desired Gene	Recipient Variety	New Variety (only desired gene is transferred)



Infographic: FDA/Michael Ermarth