PLANT GENETIC RESOURCES

THE KEY TO GLOBAL FOOD SECURITY

Plant breeders utilize the genetic diversity of **plant genetic resources (PGR)**—the wide range of crop species and their wild relatives—to develop new crop varieties.

Plant breeders use PGR by evaluating plants for traits of interest, selecting the best, and crossing them to adapted varieties.

PGR are crucial for adapting crops to changing climates, combating new strains of diseases and insects, and developing healthier foods:

Evolving threats from insects and diseases

Declining land and water availability

Increased demand from a growing human population

Changing temperatures and rainfall patterns

PGR include current and traditional varieties and related wild plants.

Crop wild relatives are the ancestors of crops and related species found in their native habitat.

Landraces are traditional varieties selected by farmers for adaptation to local conditions.

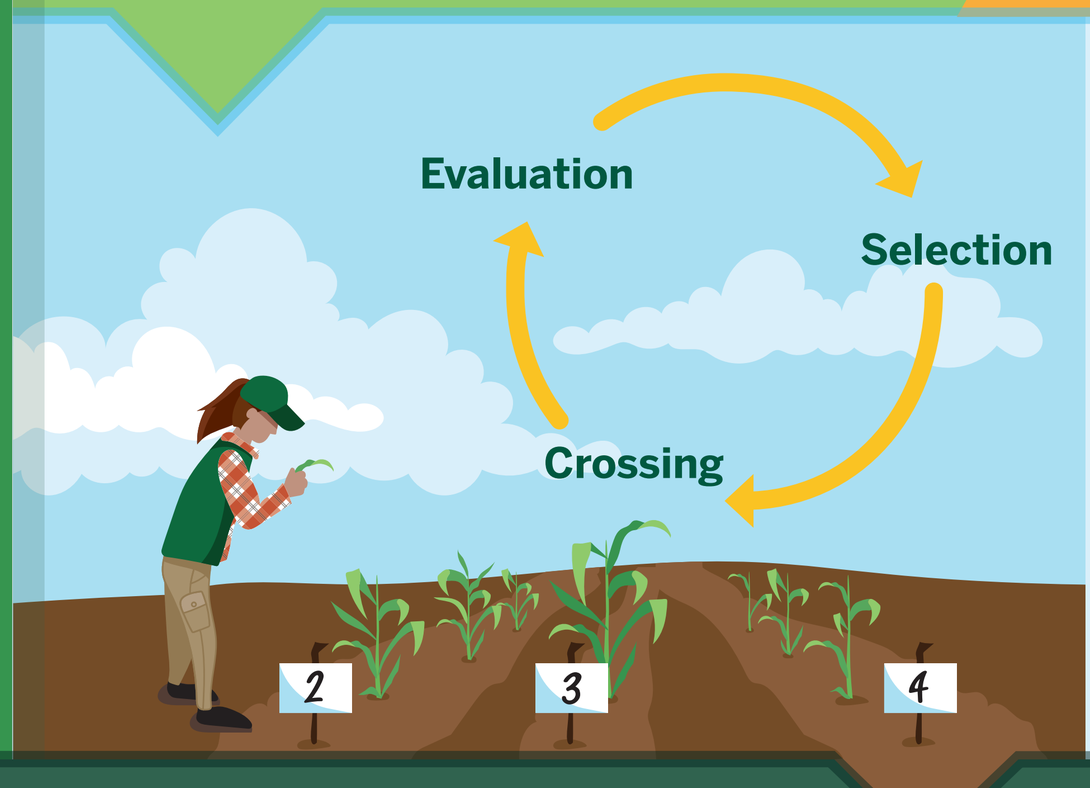
Crop varieties have been developed by plant breeders and farmers.

Modern yellow dent corn hybrid
From the U.S.

Maize landrace
From Mexico

Teosinte
Wild crop relative
From Mexico

Genebanks acquire, maintain, document, and distribute PGR.



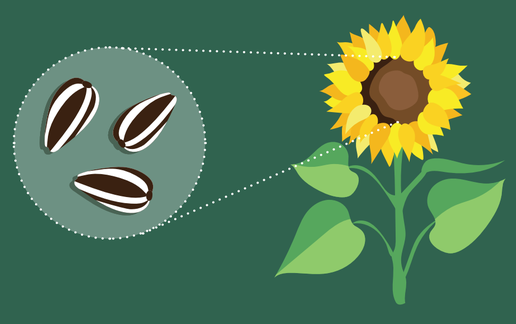
After thorough PGR evaluation and often subsequent breeding with current crop varieties, a new improved variety with novel traits is developed.

Plant breeders use PGR to develop improved varieties that are:

Insect Resistant

Wheat varieties resistant to the Russian wheat aphid incorporate resistance genes from a variety developed in Turkmenistan.

Higher Yielding



Sunflowers with higher seed yield have been developed from several U.S. wild sunflower species. Traits that enabled production of higher yielding hybrid cultivars were obtained from wild sunflowers.

Disease Resistant

Resistance to a devastating fungal disease (late blight of tomato) was found in a wild tomato relative collected in Peru. This trait has been used in several commercial varieties.

More Nutritious

Crop wild relative *Malus sieversii* is used in breeding red fleshed apples. These apples offer improved nutrition and provide a pink blush to hard ciders.

USDA Agricultural Research Service

Colorado State University

National Association of Plant Breeders NAPB Improving Plants to Improve Lives

For more information, contact: Patrick.Byrne@colostate.edu or Gayle.Volk@usda.gov

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