

WHAT IS PLANT BREEDING?

Through advancements in agriculture and the development of new crop varieties, humans have historically strived to meet the needs of a growing population and to develop a safe, reliable and sustainable food supply. How will we continue to meet this challenge, while dealing with a changing climate and threats of new pests and diseases? Just like in other industries, continued innovation is paramount to the future of agriculture, and our quality of life. Plant scientists and breeders will need access to every tool available to meet these challenges in a safe, affordable and responsible manner. The future is here and now; it starts with the seed.

WHY BREEDERS IMPROVE SEEDS:

Thanks to the continued evolution of seed improvement, farmers can count on a wide array of crop varieties, consistent and reliable harvests and higher yields. The result is increased quality and quantity of our food supply and a more sustainable future – meaning that future generations will be able to meet their food needs.



THE EVOLUTION OF PLANT BREEDING:

The fundamental practices of plant breeders have not changed. Plant scientists and breeders still select the best plants for their desired goal, including drought and disease resistance, improved nutrition, and healthier plants with the use of fewer inputs.

Today, thanks to an increased understanding of genetics, the capability to sequence plant genomes and the ability to link a specific gene(s) to a specific characteristic, plant breeders can more precisely and efficiently develop new and improved varieties to address environmental challenges and meet the ever-changing needs of farmers and consumers.



ABOUT PLANT BREEDING INNOVATION:

Newer plant breeding methods like gene editing can allow plant scientists to precisely add, delete or replace specific characteristics using the plants own biological repair processes.

These newer methods can allow us to reach the same end-point as through more traditional plant breeding methods, but with greater precision and efficiency.



THE BENEFITS OF NEW BREEDING METHODS:

America's agriculture producers face the very real challenge of providing for a growing population so future generations have access to the same diverse, nutritious and high quality food we enjoy today. Thanks to improved breeding methods, we will be able to more efficiently and economically meet these needs through agriculture practices that preserve our environment's natural resources and biodiversity.

Although no products of gene editing are on the market yet, these methods are accessible to both public and commercial plant breeders in developed and developing countries, and they can be used across all agriculturally important crops, including food, feed, fiber and fuel crops.



HOW NEW PLANT VARIETIES ARE REGULATED:

All foods derived from plants are regulated in the U.S. by the FDA and seeds are comprehensively regulated by USDA. Most new agricultural plant varieties are introduced without a specific pre-market safety review, given the long history of safe use of the underlying varieties used for breeding. A key feature of the plant breeding process is extensive testing and evaluation starting early in the breeding process and continuing until the final product is commercially available. These tests are based on procedures breeders have used for many decades to create new plant varieties that are safe to grow and eat.

When it comes to new plant breeding methods, it's important that the U.S. and international policy climate allows, and encourages, continued innovation. Plant varieties developed through the latest breeding methods should not be differentially regulated if they are similar to or indistinguishable from varieties that could have been produced through earlier breeding methods. However, in cases where newer breeding methods are used to make transgenics, they should go through the normal GMO regulatory process.

