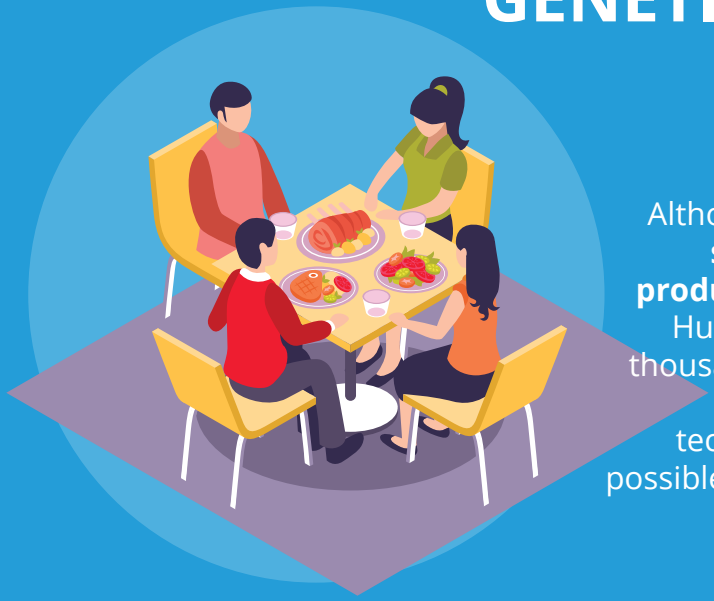
SEEDS AND INNOVATION:
GENETIC IMPROVEMENT



Although it is hard to believe, **all the crops that today serve as a source of food, fiber and fuel are not products of nature, but of plant breeding programs.** Humans have been modifying the genes of plants for thousands of years in order to obtain better crops. Over the centuries, crop improvement methods and techniques have evolved thanks to science, making it possible to not only produce food in larger quantities, but also food that is safer and more nutritious.

HOW ARE CROPS IMPROVED?

- From the beginning, the main tool for improving crops was, and still is, crossing different plants, and selecting those that have the desired characteristics. This process is repeated over several years (between four and seven) until an improved variety is obtained.
- Over time, other tools and improvement methods were added to crossing and selection, such as the generation of mutations that has yielded, for example, hard wheat, seedless tangerines and pink grapefruit, among thousands of other common examples. More recently, biotechnology has also been used resulting in transgenic crops.
- Currently, new varieties are obtained by institutions with breeding programs that are staffed with highly specialized professionals.

Semillas y Propiedad Intelectual

THE ART OF CROSSING AND OBTAINING COMMERCIAL VARIETIES

Hundreds of manual crosses are carried out in order to improve crops. **This work is laborious and must be done by highly trained people**, as it requires skill to not damage the floral organs being manipulated. Generally, this procedure is carried out in a greenhouse in order to obtain a few seeds that will then be planted to grow more seeds. The seeds produced in the greenhouse are sown in the field in order to choose the best plants. This process is repeated for several years until one or two potential commercial varieties are obtained, which means that they will be made available for growers.

DID YOU KNOW...?

The process of breeding in order to obtain a new commercial variety takes about 10 years and involves hundreds of professionals: geneticists, agronomists, entomologists, and system engineers, among others.