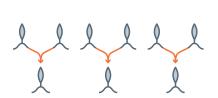
Traditional Plant Breeding

Traditional methods involve crossing numerous plants to combine and select preferred traits. This gradual, labor-intensive work is repeated over many years, with favorable traits becoming more pronounced as breeders eliminate unfavorable plants.



Breeders cross plants with favorable traits.

Resulting plants showing favorable traits are selected and, in many cases, repeatedly crossed to further amplify these traits and eliminate unfavorable traits.



Field trials are conducted at multiple locations to gather data on performance by environment. This process repeats over many years.

Once plants display traits favorable for commercial use, the seed is grown for commercial sale.



~10 Total Years

SEEDesign[™] Technology Platform

Modern technology has made it easier to hypothesize, target and test which edits will result in favorable outcomes. The path to step-change varieties—by making edits directly into high-performing, elite varieties—is more predictable while requiring far less time and fewer resources.

Using Al-powered predictive design to analyze a constantly growing trove of data, scientists identify the types and combinations of gene edits for the desired traits. This provides a gene editing "blueprint."





Tools such as CRISPR-Cas are used to make precise edits in elite varieties according to the "blueprint." Multiple edits are performed to disable, reduce or enhance the expression of a gene.

The plant's DNA is reviewed to confirm the presence of the desired edit. Only plants with positive outcomes advance to the greenhouse for further observation.



Depending on the development state, either plants from the greenhouse or seeds from those plants are moved into field trials at multiple locations to gather additional performance data.



Once data confirms the edited plants achieved the desired results—such as step-change yield improvements—the seed goes to our seed company customers who bring our edited seeds to farmers.

3-5 Total Years