

The Partners Will Combine Three Complementary Approaches to Deliver WEMA

GERMPLASM, ADVANCED BREEDING AND BIOTECHNOLOGY ARE CRITICAL TOOLS

GERMPLASM



Start with specifically chosen germplasm for Africa...

ADVANCED BREEDING



...then using advanced breeding, selecting directly for beneficial drought tolerance characteristics in germplasm with genetic markers...

BIOTECHNOLOGY



... then enhance improved germplasm with biotech.

ALL THREE WORK TOGETHER TO MAXIMIZE YIELD UNDER STRESS

Germplasm and Advanced Breeding Methods Are Key to Better Plant Performance

BOTH WORK HAND-IN-HAND FOR TOP-PERFORMING HYBRIDS



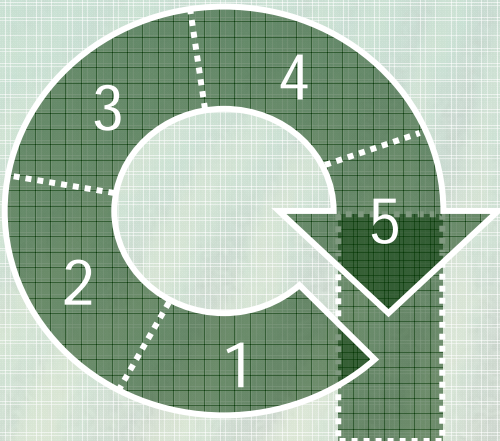
Maize is a crop that offers tremendous genetic diversity. By pooling - and then strategically combining - this genetic diversity into new hybrids, breeders are able to create more robust plants that perform better in the field.



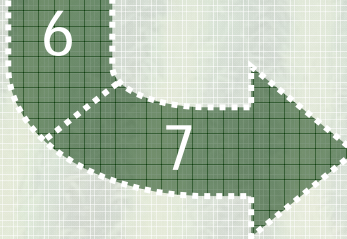
Advanced breeding methods like molecular breeding allow breeders to speed up the development of great hybrids by “tagging” the beneficial genes of two top-performing plants. By doing that, they dramatically improve the odds of developing top-performing offspring (hybrids) versus breeding by chance.

How Are New Hybrids Developed?

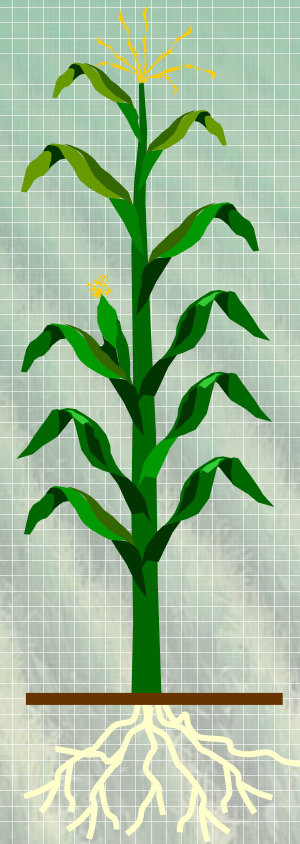
THE ENTIRE PROCESS TAKES APPROXIMATELY SEVEN YEARS



Breeding new maize plants is a cycle of constantly developing and improving inbreds using elite germplasm. New inbreds are fed back into the breeding pipeline for further improvement. The cycle takes about five years.

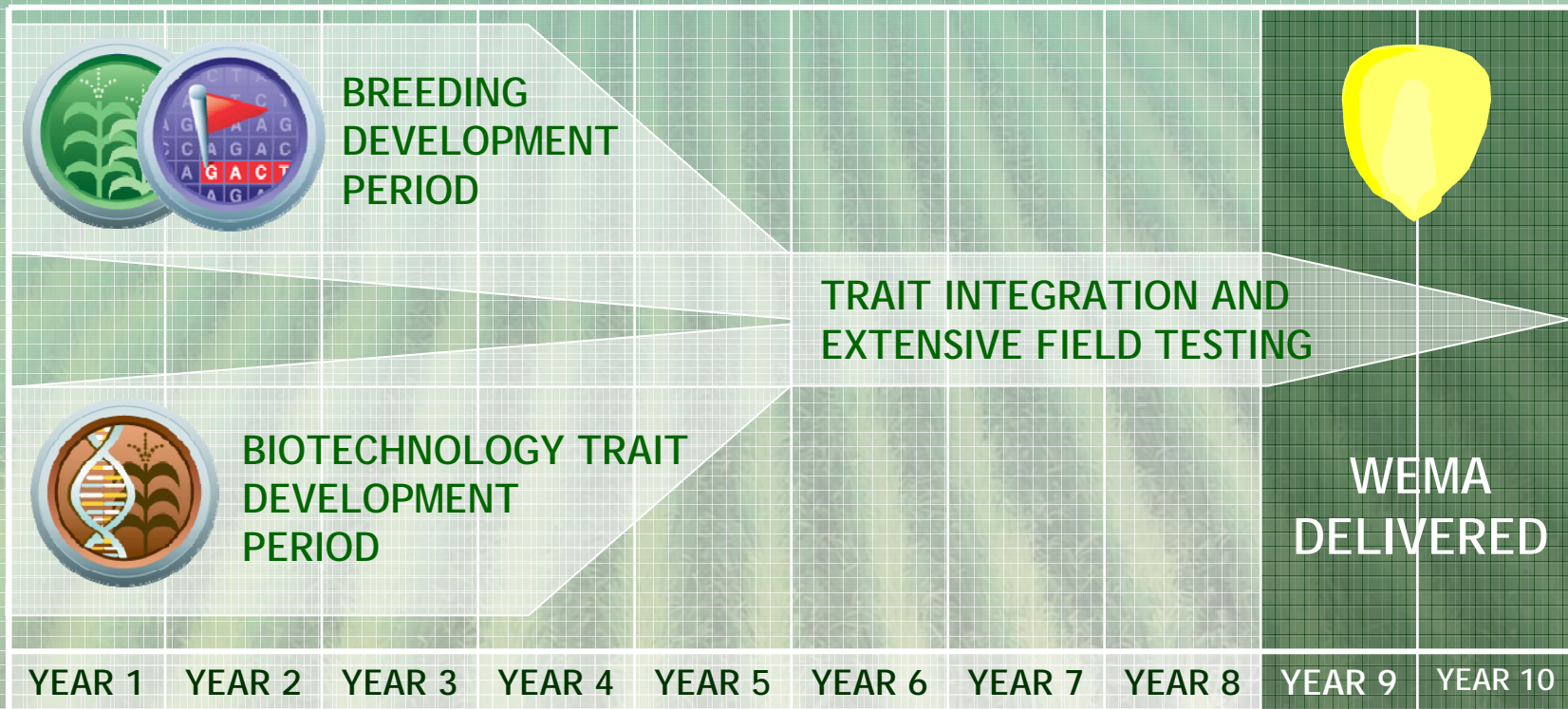


Developing new hybrids is an offshoot of this process, and is done in years 6 and 7.



WEMA Technical Timeline

FIRST 5 YEARS ARE RESEARCH-FOCUS, THE NEXT 5 ARE PRODUCT DEVELOPMENT



EXPECTED TO BE AN EIGHT- TO TEN-YEAR DEVELOPMENT TIMEFRAME

WEMA 5 year milestones

MARKER AIDED BREEDING IMPROVES GENETIC GAIN 2X COMPARED TO CLASSICAL BREEDING

Year 1: Building of Project	Year 2: First Trials	Year 3: Transgenic and Breeding trials in SSA	Year 4: Multiple trials in SSA	Year 5: First selection of improved WEMA lines
<ul style="list-style-type: none"> • Start breeding populations • Start trait integration • Identify and begin development of SSA testing sites 	<ul style="list-style-type: none"> • Transgenic trials in RSA • Conventional DT trials in SSA • Training for transgenic trials 	<ul style="list-style-type: none"> • Transgenic trials in RSA • First transgenic DT trials in SSA • Marker Aided Breeding Trials in SSA 	<ul style="list-style-type: none"> • More transgenic hybrids tested at more locations • 2nd Year breeding trials 	<ul style="list-style-type: none"> • First inbreds from molecular breeding identified • Multiple years, multiple transgenic event testing

TRANSGENIC TECHNOLOGY FURTHER INCREASE DROUGHT TOLERANCE