

Three things you will enjoy as a plant breeder:

"First, when you make a cross, you are able to imagine all the possibilities of the progeny of those two parents.



Second, when you make selections by observing thousands of lines and you see a line that has what it takes to become a variety, you know you have done something good .



Finally, when that promising line is grown on millions of acres, you remember holding all the seed of it in the palm of your hand".



Stephen Baenziger
Wheat Breeder
University of Nebraska



Interested in plant breeding or allied fields?

Contact TCAP institutions about graduate programs:

Soil and Crop Sciences, **Colorado State University**
Plant Breeding, **Cornell University**
Plant Pathology or Agronomy, **Kansas State University**
Plant Sciences and Plant Pathology, **Montana State University**
Department of Crop Science, **North Carolina State University**
Plant Pathology, Plant Sciences, **North Dakota State University**
Environmental Natural Resources, or Horticulture & Crop Sciences, **Ohio State University**
Plant and Soil Sciences, **Oklahoma State University**
Crop and Soil Science, **Oregon State University**
Plant Sciences, **South Dakota State University**
Soil and Crop Science, **Texas A&M University**
Department of Plant Sciences, **University of California, Davis**
Botany and Plant Sciences, **University of California, Riverside**
Aberdeen Research & Extension Center, **University of Idaho**
Plant and Soil Sciences, **University of Kentucky**
Plant Sciences and Landscape Arch., **University of Maryland**
Agronomy & Genetics, Plant Pathology, **University of Minnesota**
Division of Plant Sciences, **University of Missouri**
Agronomy and Horticulture, **University of Nebraska Lincoln**
Plant, Soils and Climate, **Utah State University**
Crop and Soil Environmental Sciences, **Virginia Tech**
Crop and Soil Science, **Washington State University**

Funded by the USDA



United States Department of Agriculture
National Institute of Food and Agriculture

Plant Breeding...

The future is in YOUR hands



**Every plant breeder
must understand
what they hold in
the palm of their
hand.**



<http://www.triticeaecap.org/>

Why Plant Breeding?

Agriculture is the basis for civilization by providing food, feed, fuel and fiber. Historically, advances in agriculture have provided these products more efficiently, freeing people to build society.



The world is approaching 9 billion people and over 1 billion are hungry. Climate change is making it harder to produce food because the environment is less stable and new diseases are developing. The challenge for the future is that **more** must be produced with **less**, all in a sustainable manner.



Plant breeders are able to recognize potential disasters before they happen and build resistance to disasters into crops, improving food production. Plant breeding provides consumers with high quality, nutritious, disease free, insect free food.

One Plant Breeder's story

"I was a Peace Corps volunteer in Nepal living in a rural village in the Himalayas, where subsistence agriculture was virtually how everyone made their living. They depended on many crops, including corn.



One year there was an infestation of corn borers, where larvae in the corn stalk caused it to break over. The yield was drastically reduced and the people went hungry that year. They didn't have as much corn as they would in a normal year. I thought, what can I do to help?

It was that direct contact with subsistence agriculture and the people whose lives depend on it that was the motivating factor for me to become a plant breeder."

Dr. Patrick Byrne, Colorado State University



Plant Breeding - crosses and selections

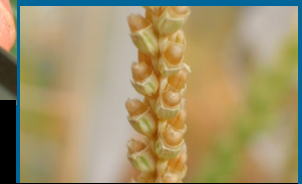
Plant breeders create new lines by making crosses.



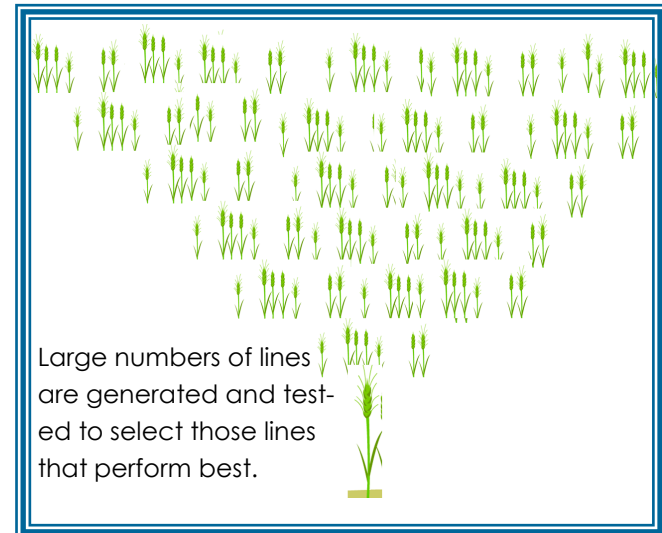
1. Emasculate—remove male parts from female parent



2. Pollinate—transfer pollen from male to



3. Produce new seeds = new genetic combinations



Modern plant breeders incorporate the newest technologies and approaches to improve crops more efficiently.