PBCC

- Project renewal submitted for 2020-2025
- Objectives:
 - 1. Collect, analyze, and disseminate information about the U.S. plant breeding effort in both public and private sectors, to include human capacity and access to enabling knowledge, technologies, germplasm, and infrastructure.
 - 2. Promote the conservation, characterization, and utilization of plant genetic resources and access to those resources for plant breeding.
 - 3. Identify Best Management Practices for public sector intellectual property protection to encourage the creation and distribution of improved crops for a broad range of needs and opportunities.
 - 4. Optimize opportunities for public-private collaboration in plant breeding research and education, including continuing education for plant breeders.
 - 5. Foster communication among public plant breeders and federal agencies on public policy issues, including alerts to existing and emerging threats to agricultural security that are relevant to plant breeding.
- Survey of public plant breeding capacity concluded and in press in Crop Science Journal
- Activity will be renewed every few years to keep the track on changes

eBook on Crop Wild Relatives https://colostate.pressbooks.pub/cropwildrelatives/

| Colorado State University | Home Read Sign in Search in book Q |
|--|------------------------------------|
| Crop Wild Relatives and their Use in Plant Breeding Gayle Volk and Patrick Byrne Public Domain READ BOOK | |

Partial funding provided by PROCINORTE, a collaboration among the germplasm systems of Canada, Mexico and the U.S.

Two Infographics on Plant Genetic Resources (drafts) Funding provided by PBCC/NAPB

USDA Agricultural Research

Service

NAB

1) Use of PGR in plant breeding (nearly complete)

PLANT GENETIC RESOURCES THE KEY TO GLOBAL FOOD SECURITY Plant breeders use plant genetic resources (PGR)—the wide range of plant varieties and their wild relatives-to develop new crop varieties. **Current and Heritage** Plant breeders use PGR by Landrace Corn Hybrid Varieties, Wild plants evaluating accessions for traits of interest, selecting the best. Crop wild relatives are collected and crossing them to adapted from the native habitat of a species. Crop varieties are gathered (with varieties. permission) from agricultural communities or donated by breeders After several rounds of evaluation Landraces are traditional varieties (and usually additional crosses to selected by farmers adapted to local the adapted variety), an improved variety may be ready for release. PGR will be crucial for adapting crops to changing climates, combatting new strains of diseases and insects, and developing healthier foods. ØD ma 1 Evolving threats from Declining land and insects and diseases water availability **Plant breeders** Evaluation Selection use PGR 1 Ang to develop Increased demand Changing temperatures improved from a growing human and rainfall patterns population varieties **Update icons + backing that are: corn illustration Insect Resistant **Higher Yielding Disease Resistant** More Nutritious Sunflowers with higher seed yield have Russian wheat aphid-resistant wheat Resistance to a devastating fungal Crop wild relative Malus sievers incorporated resistance from a wheat been developed from several U.S. wild disease (late blight of tomato) was found in a wild tomato relative collected in Peru (PI 365957). This trait has been used in (subspecies niedzwetzkyana) is user orresponding fertility restorer genes from apples offer improved nutrition and cies enabled the c provide a pink blush to hard ciders f these higher yielding hybrid cultivars

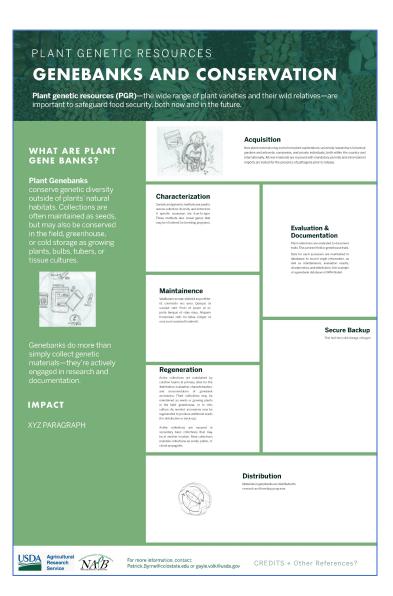
For more information, contact:

Patrick.Byrne@colostate.edu or gayle.volk@usda.gov

CREDITS + Other References?

Two Infographics on Plant Genetic Resources (drafts) Funding provided by PBCC/NAPB

2) Conservation of PGR(still in design phase)



Enhancing Educational Outcomes for Plant Genetic Resources Conservation and Use

USDA-NIFA Higher Education Challenge Grant Program

Colorado State University, Iowa State University, and USDA-ARS (Fort Collins, Ames, Beltsville) \$749,000 for 3 years (2020-2023)

Objectives:

- Develop an organized series of learning resources (videos, ebook chapters, images, etc.) covering priority PGR topics.
- Establish an online repository to host, organize, and track usage of the developed content.
- Develop and offer three 1-credit graduate-level online course modules at CSU.
- Disseminate the developed materials broadly to communities of interest.