FANTASTIC DISCOVERIES IN

PLANT BREEDING

PBCC 4 MAY 2025

vast *living libraries* of plants & seeds
SAFEGUARD THE WORLD'S FOOD!

EPIC STRENGTH in BIO diversity!

PUBLIC SCIENCE for the PUBLIC GOOD

USDA seedbanks and plant repositories continue to hold the line against current and future agricultural challenges!

SEE INSIDE FOR DETAILS

THE SCIENCE

Food security is not to be taken for granted. New pests, new diseases, a changing climate -- the **threats to ongoing food production** are relentless and legion. In the face of such challenges, plant varieties that thrived in the past may have lost their edge today. This is the reason that **plant breeding** (the painstaking creation of new improved plant varieties) is an ongoing process. With no time to rest on their laurels, plant breeders must be ever vigilant to the shifting landscape of agricultural threats, anticipate their effects, and thwart them with new, high-performing varieties. When new threats do emerge, one of the first places plant breeders look for help are curated **living collections** of diverse plant genetic resources, like the vast seedbanks, genebanks, and plant libraries faithfully maintained within the United States Department of Agriculture's **National Plant Germplasm System** (NPGS).

THE IMPACT

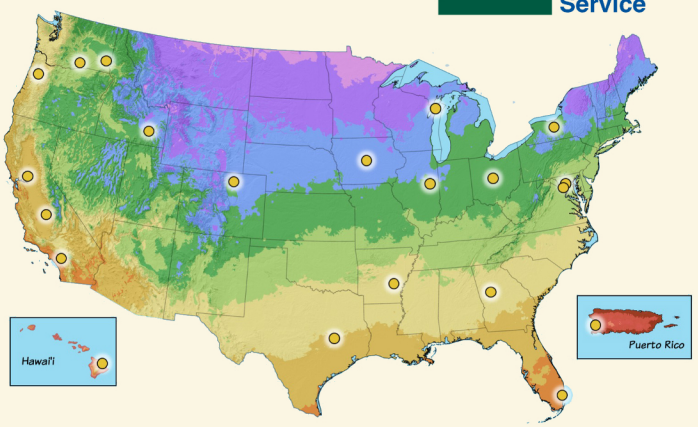
The NPGS was established in 1898 with a visionary commitment to serving the **public good**, and its collections represent a towering achievement that have helped secure US and global food production for the last 125 years. Across its nationwide network of 22 stations, approximately 300 highly specialized NPGS scientists actively maintain more than **600,000 accessions** (genetically unique plant lineages), spanning **200+ crop species**. Nearly every commercially farmed food plant grown in the US today owes its development, at least in part, to the NPGS system. Desperately needed **resistance** to Ug99, a newly evolved race of wheat stem rust? Found in the NPGS, after screening tens of thousands of accessions. Fire blight **tolerance** for apples? Found in the NPGS! Resources to develop **new crops** like amaranth, kiwiberry, or Tartary buckwheat? In the NPGS! Stories of the contributions of the NPGS to crop preservation and improved varieties abound*, and the collections continue to serve as the **foundation for breeding programs** around the world.

DID YOU KNOW?

Plant exploration - the Indiana Jones-like collection of plant genetic diversity from around the world - is an ongoing and internationally collaborative process. NPGS curators regularly coordinate collecting trips to find new and useful diversity for the food system. From deserts to grasslands to arid mountainous regions, efforts continue to **locate, protect, and sample** plant populations with unique characteristics that can help make our agricultural systems **stronger and more sustainable**, despite an uncertain future.

THE TEAM

USDA Agricultural Research Service



Distributed throughout the nation's diverse climate zones, the 22 NPGS stations are staffed by approximately 300 highly specialized Federal scientists who actively maintain and distribute collections of more than 200 crop species.

PBCC PLANT BREEDING COORDINATING COMMITTEE
WWW.NRSP10.ORG/PBCC

TO BE CONTINUED...

* Check out https://grin-u.org/category/cultivar-stories/