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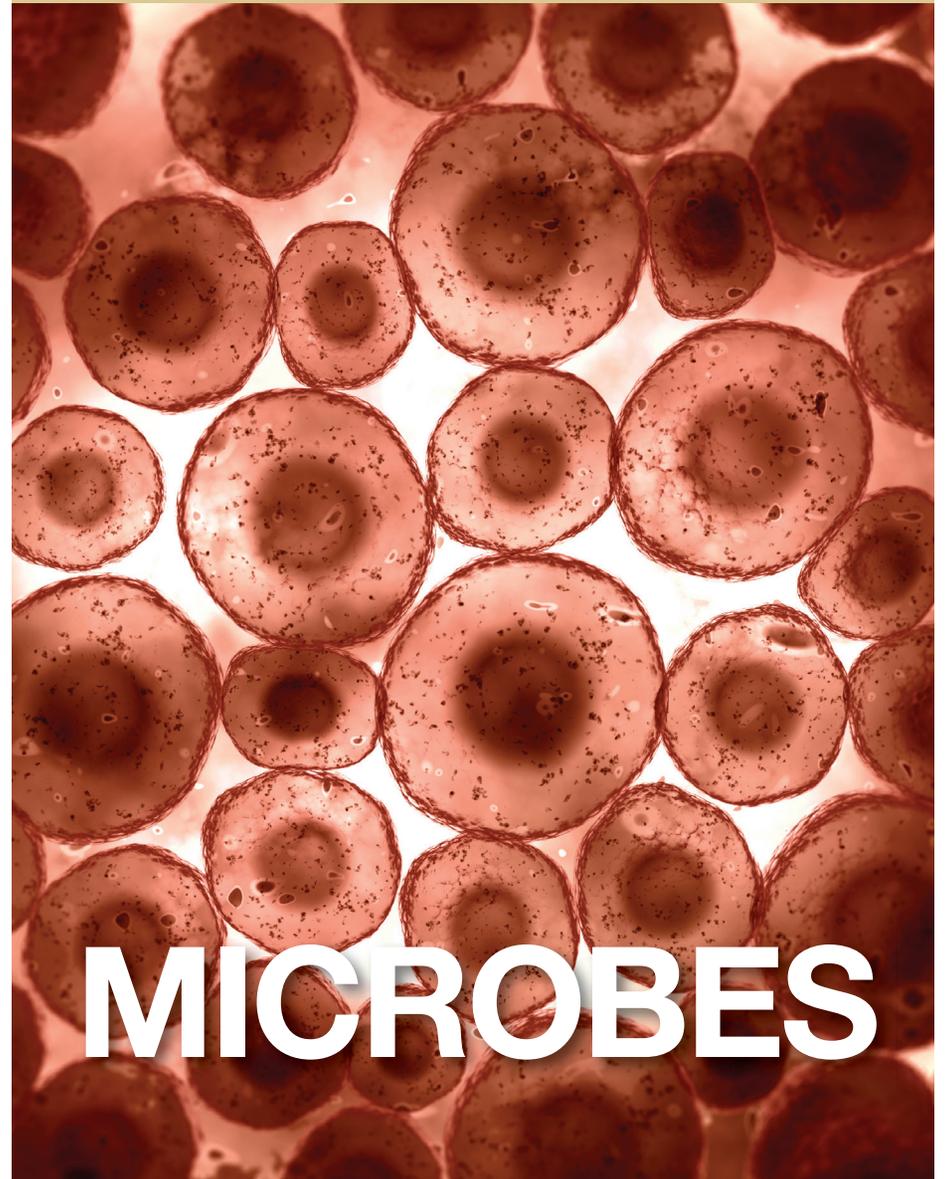
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Agricultural Research Service

**National Center for
Genetic Resources Preservation**



MICROBES

Why Store Microbial Genetic Resources?



The NCGRP is a national resource providing security back-up of plant-associated microbial collections. Microbes including yeast, fungi, bacteria, and viruses represent an important component of U.S. agriculture. Our objective is to save microbes that promote plant growth, carbon cycling, biofuel production, and protect plants from other organisms (biocontrol agents).

We also want to preserve microbes that cause plant diseases or produce foodborne diseases that threaten our food safety and production.

Using Microbial Collections

The NCGRP's ability to provide a secure centralized location promotes a support network and provides duplication of rare and unique strains.

- The collections support plant disease research and the development of disease resistant plant varieties by public and private plant breeders. They are also used for the detection of foodborne diseases.
- Through agreements with the collaborators, the NCGRP makes available specific pathogens termed "Pathogen Differential Sets" for distribution to research scientists.
- Requests for pathogens are made through the Germplasm Resources Information Network (GRIN Global).



Acquiring Microbial Collections

- NCGRP has duplicate sets of valuable collections from other institutions to assure their availability to scientists in the future.
- The NCGRP acquires microbial collections from curators at public institutions and collaborates with organizations such as the American Type Culture Collections, the National Institute of Health, and the U.S. National Science Foundation.

Did You Know?

Of the 330,000 bacterial and fungal cultures that are currently housed in 72 ARS locations, NCGRP currently backs-up 10,600 isolates from 13 collections.

Evaluating Microbial Collections

- By identifying important, unique, and 'at risk' collections, we ensure a diverse collection.
- The NCGRP works with the microbial research community in a coordinated effort to evaluate, identify, and catalog microbial collections for backup storage (not for distribution) and a base collection of the Pathogen Differential Sets (for distribution).



Preserving Microbial Collections

- Enhanced storage procedures will optimize conditions to maintain viability of the collections.
- Our mission is to acquire and preserve a diverse backup microbial collection guaranteeing longevity of stored microbial genetic resources including yeast, bacterial, fungal, and viral material.
- Our storage conditions include -196°C in liquid nitrogen (cryopreservation), -80°C , and -18°C freezers.
- We also assist in research aimed at developing improved long-term (100+ years) storage systems for selected microbes.

