



Culture Collections

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A National Workshop on Culture Collections: Ensuring the Availability of Essential Research Resources for Plant Associated Microbes

Background: Culture collections of plant-associated microbes provide a needed resource of genotypic and phenotypic variation necessary for effective research in plant pathology. Collections provide a genetic link between the past and present and can provide insight on changes that have occurred since previous epidemics. Recent advances in molecular techniques have shown that pathogen diversity is much more extensive than previously suspected. Reference cultures having phenotypic and genotypic markers can facilitate identification of emerging pathogens, provide data essential for forensic investigation, and be useful in identifying control strategies. Without access to the genetic diversity of microbes, it is impossible to predict durability of plant resistance.

Many isolates and strains are held in personal collections housed in academic institutions. Most such collections are maintained without permanent funding. After a researcher retires or leaves a location, the “orphaned” collection may be lost. Commercial collections too are subject to funding insecurity and the high cost of commercially available strains and isolates often impedes research. There is a need for affordable strains and isolates for the research community throughout the United States. A national culture collection could provide a permanent home to valuable plant pathogen cultures and ensure that genotypic and phenotypic diversity of plant associated microbes are maintained and available to researchers. A national database containing microbe information from both personal and commercial collections is needed to locate useful strains and isolates for research purposes.

Solution: In 2005, the American Phytopathological Society (APS) appointed an *ad hoc* committee to explore strategies to preserve plant pathogen collections and information. The committee recommended:

- The appointment of an APS Standing Committee to assist in development of a plan for a **National Culture Collection System (NCCS)** and to provide expertise to the NCCS regarding the national databases; and
- The development of a proposal for a national workshop on collections of plant associated microbes and databases that would bring together stakeholders from agencies and entities for whom these culture collections are critical to consider:
 - The establishment permanent sites for maintaining culture collections;
 - The development of a permanent national database on collections of plant associated microbes for easy access by scientists; and
 - The development of a plan for accessibility of cultures to the scientific community for research purposes.

Specific Request: In partnership with APS, we request funding to host a national workshop entitled, A National Workshop on Culture Collections: Ensuring the Availability of Essential Research Resources on Plant-Associated Microbes. The workshop would investigate potential solutions for ensuring the future availability of plant related microbial culture collections. The goals of the workshop would be to (1) explore the opportunity for developing a national database; (2) determine the necessity for and the essential components of a national culture collection system; (3) provide a framework for the research community to coordinate efforts to preserve culture collections; (4) develop a strategy for preservation of these research resources; and (5) explore methods of collaborating with other international efforts to preserve culture collections. In addition to representatives from APS, workshop participants would include scientists and administrators from the USDA-ARS, USDA-APHIS, USDA-CSREES, NSF, DOD, DHS, EPA, FBI, the American Society for Microbiology, the American Mycological Society, public and private-sector scientists with expertise in culture collections, and other stakeholders. Workshop participants will consider issues of database and collection content, management, distribution, security, and funding.

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