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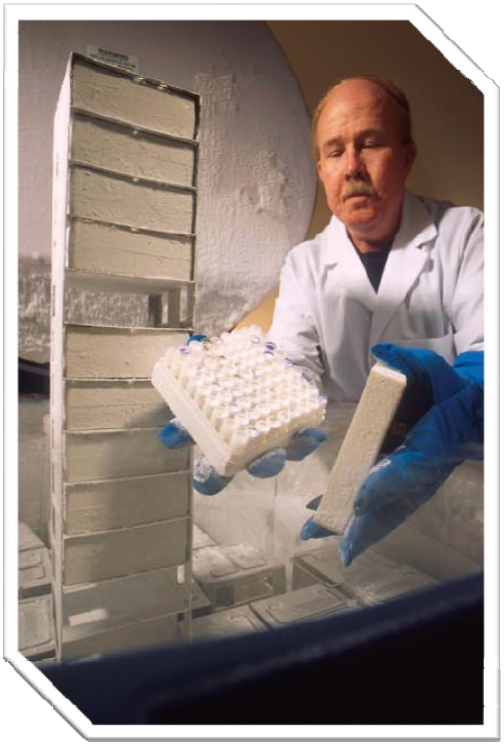
The ARS Culture Collection



What is the purpose of this research project?

The purpose of this project is to acquire, maintain, characterize and distribute strains of bacteria and fungi that are important for agriculture, biotechnology, biosecurity and biodefense.

What problem does it address?

Microbial-based agriculture and biotechnology research relies on superior production strains, new strains with novel characteristics, and reference strains for comparative purposes. Such strains are often difficult to acquire or are cost-prohibitive to many researchers and small businesses. The ARS Culture Collection provides a readily available source of these strains. In addition, many government agencies require reference strains for their mission activities, especially those related to biosecurity and biodefense. The ARS Culture Collection serves as a source for these strains, as well as a source of scientific information that these agencies can rely upon. Finally, the ARS Culture Collection serves as a repository where researchers can deposit their strains at no cost knowing that they will be made freely available to the scientific community. The Collection also has a patent service through which patented strains can be deposited for a one-time fee to cover maintenance and distribution costs.

What makes this research team unique?

The ARS Culture Collection has a staff dedicated to the acquisition and preservation of microbial germplasm. It acquires strains from around the world and makes these strains available to the scientific community at no cost. While many culture collections are specialized and small in scope, the ARS Culture Collection is a broad repository encompassing hundreds of different bacterial and fungal species. All together, these strains number nearly 100,000. Other government agencies seek the assistance of the Collection staff in order to accomplish special projects or key investigations in their mission areas.

Who are the potential customers for this technology?

The strains in this collection are important to researchers in the public, private and government sectors. In addition, a number of strains within the Collection are capable of serving as production strains that can be utilized by private enterprise.

How is this technology transferred?

The ARS Culture Collection distributes several thousand cultures to a few hundred different universities, businesses and government agencies within the United States and abroad each year. In addition, scientific knowledge is shared with scientists in special collaborative projects, especially with other government agencies.

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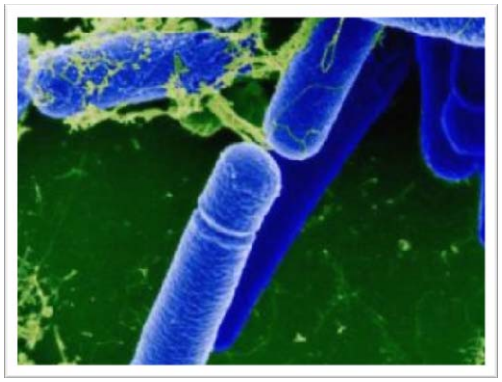
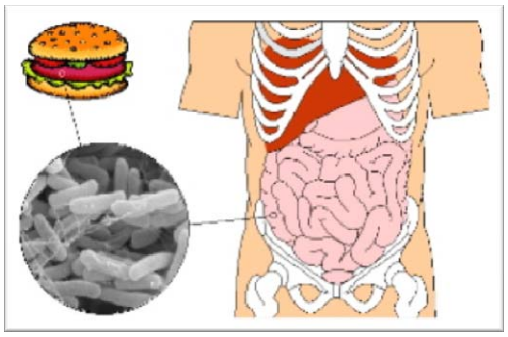
The Collection Staff

The Administrator of the ARS Culture Collection is Dr. Alejandro P. Rooney. Dr. Rooney is assisted by Mr. James Swezey, (the Collection Manager), Dr. David P. Labeda, (the database manager) and two curatorial technicians.



The bacterium Bacillus subtilis is common throughout the environment. A strain of this organism was present as a contaminant in the spore preparations used during the deadly 2001 Anthrax mailings. The FBI requested the help of the ARS Culture Collection to characterize this contaminant.

During Operation Iraqi Freedom, over 100 servicemen contracted acute eosinophilic pneumonia between March and August of 2003. The U.S. Army suspected that an unknown pathogen present in the cigarettes that the servicemen were smoking may have been involved. The ARS Culture Collection was requested to assist the Army by characterizing the microbial species present in the cigarettes in question.



Clostridium perfringens is a serious human and animal pathogen that causes a variety of diseases, including gas gangrene, food poisoning, necrotic enteritis, and antibiotic-associated diarrhea. ARS Culture Collection researchers have shown that these diseases are caused by a cryptic complex of multiple, independent lineages and not a single species as was previously believed.

For more technical information about this project:
http://www.ars.usda.gov/research/projects/projects.htm?accn_no=413230

Contact Information

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