



Plant Protection and Quarantine Science & Technology

Plant Protection and Quarantine (PPQ) Science and Technology provides scientific support for PPQ regulatory and operational decision making and ensures that PPQ has the information, technology, tools, and methods needed for effective pest exclusion, detection, and management. S&T employs approximately 230 scientists, analysts, and support staff at 6 laboratories and satellite locations.

Major Laboratories and Programs

Office of the Executive Director, Raleigh, NC

The Office of the Executive Director provides administrative support and overall coordination and management of S&T laboratories. This office also includes the Domestic and Emergency Scientific Support group and National Clean Plant Network.

Domestic and Emergency Scientific Support, Raleigh, NC

- Provides cross-cutting coordination of S&T activities and scientific support for emergency response, ongoing domestic programs, and special or strategic initiatives and projects.
- Domestic program support includes citrus health, fruit fly, imported fire ant, *Phytophthora ramorum*, and biological control programs.
- Includes coordination of National Plant Protection Laboratory Accreditation Program, which accredits partner laboratories to perform regulatory diagnostics.

National Clean Plant Network, Raleigh, NC

- Program coordination for the National Clean Plant Network: a collaborative effort among 35 clean plant centers in 20 States to support the development and distribution of disease-free stock of fruit trees, grapes, hops, berries, citrus, sweet potato, and roses. NCPN supported centers conduct plant pathogen diagnostics, therapeutics, and establish clean plant material in foundations.

Plant Pathogen Confirmatory Diagnostics Laboratory, Laurel, MD

(previously Beltsville Lab)

- Develop and validate molecular diagnostics for plant pathogens.
- Evaluate and implement new diagnostic technologies.
- Bioinformatics analysis for pest identification and selection of diagnostic molecular markers.
- Diagnostics for plant pathogens of regulatory significance.
- Build capacity and conduct training for plant pathogen diagnostics.
- Develop and deliver proficiency tests and reference material to diagnostic labs.
- Select Agent Laboratory and biosecurity containment facility.

Pest Identification Technology Laboratory, Fort Collins, CO

(previously Ft. Collins Lab)

- Develop digital diagnostic resources for identifying pests through the Identification Technology Program.
- Molecular diagnostics for insect plant pests using new technologies.
- Molecular screening and identification support for pest survey programs.

Treatment and Inspection Methods Laboratory, Miami, FL

(previously Miami Lab)

- Develop and validate phytosanitary treatments for quarantine pests and port inspection methods.
- Technical support to develop, review, or improve quarantine treatments.
- Develop methods to improve treatment application and efficacy.
- Analytical chemistry support for PPQ programs including fruit fly and environmental monitoring.
- Investigate and evaluate biological control agents.

Insect Management and Molecular Diagnostics Laboratory, Edinburg, TX

(previously Mission Lab)

- Fruit fly program methods development support.
- Citrus health response program support.
- Molecular diagnostics for arthropods and mollusks.
- Rearing and release of biological control organisms.
- Unmanned aircraft systems methods development.
- Phoenix, AZ Station develops management methods for rangeland grasshopper and Mormon cricket and support navel orangeworm sterile insect technique development.

Forest Pest Methods Laboratory, Buzzards Bay, MA

(previously Otis Lab)

- Methods development for PPQ programs that includes exotic pest-exclusion, detection, emergency response, and eradication programs.
- Commodity treatment and pest management methods, including phytosanitary and insecticide treatments.
- Biological control pest management methods for insect pests, particularly forest pests.
- Develop and evaluate pest surveillance methods including trap design and lure production.
- Molecular diagnostics and population genetics of insect pests.
- Salinas, CA Station supports commodity treatment and pest management methods for light brown apple moth, European grapevine moth, and Asian citrus psyllid.

Plant Pest Risk Analysis, Raleigh, NC

(previously Plant Epidemiology and Risk Analysis Lab)

- Help facilitate safe trade by assessing the risk of importing and exporting plant products.
- Develop and apply models to predict pest establishment, spread and phenology.
- Assess new pest threats and pathways of introduction.
- Evaluate the effectiveness and economic benefits of existing pest programs.
- Help ensure a risk-based focus for resource allocations and safeguarding activities.
- Global leader in phytosanitary risk analysis.