NATIONAL CLEAN PLANT NETWORK-CITRUS

- The National Clean Plant Network-Citrus (NCPN-Citrus) was established in 2010 and is part of the National Clean Plant Network (NCPN), which is concerned with the health of vegetatively propagated specialty crops.
- NCPN-Citrus is a body of researchers, extension specialists, regulatory personnel and industry stakeholders from California, Florida, Texas, Arizona, Alabama, Louisiana, Hawaii and Puerto Rico, who form the NCPN-Citrus, part of the National Clean Plant Network.
- NCPN-Citrus connects 10 Citrus Centers in 9 US states and territories. NCPN-Citrus will ensure that high quality (true-to-type) citrus propagative materials are produced (therapy & diagnostics), maintained (monitoring & retesting of foundation blocks & nursery sources), and distributed throughout the USA under the standards of excellence established by NCPN-Citrus governance.

WHAT DOES NCPN-CITRUS DO?

- Improve & enhance current procedures for introducing & releasing citrus varieties from foreign & domestic sources to prevent accidental introduction of exotic citrus diseases.
- Test citrus germplasm for graft-transmissible pathogens.
- Eliminate pathogens from infected material via thermal therapy &/or shoot tip grafting.
- Establish, maintain and upgrade pathogen-tested foundation to provide clean propagative material to the industry & researchers ensuring the global competitiveness of the U.S. citrus industry.
- Maintain working relationships with other national and international certification programs to facilitate the movement of germplasm within the nursery system.
- Develop outreach programs to educate and train industry personnel and the public on the importance of using pathogen-tested materials.

NCPN-CITRUS CENTERS

CALIFORNIA

The Citrus Clonal Protection Program (CCPP) a cooperative program with the UC of California, Riverside, CDFA, USDA and the California citrus industry represented by the California Citrus Nursery Board (CCNB) and the Citrus Research Board (CRB). The CCPP operates 3 different facilities:

1. CCPP-Rubidoux Quarantine Facility (RQF) Riverside, CA for the biological detection of citrus pathogens & the execution of citrus therapeutics.

2. CCPP-Diagnostic & Research Laboratory (CDRL) Testing of citrus nursery stock & trees in a robust, high throughput diagnostic laboratory, requires the identification & characterization of citrus pathogens via high throughput sequencing and constantly developing novel diagnostic tools.

3. CCPP-Lindcove Foundation Facility (LFF) Foundation & Evaluation Block at Exeter, CA. Facility for true-to-type evaluation & budwood distribution to the industry, scientists, & citrus enthusiasts in California & around the world.

ARIZONA

The Arizona Citrus Clean Plant Network is located at the University of Arizona, Yuma Agricultural Center in Yuma, AZ. The Arizona Citrus Foundation Block maintains a foundation collection of about 150 disease-free citrus varieties in a 72 x 38 screened facility that excludes insect vectors. Additionally, there is an 8 x 20-foot headhouse.

The Budwood Certification Program maintains a foundation block of about 75 varieties at the University of Arizona, Yuma Mesa Agricultural Center, and Somerton, AZ, and supplies pathogen-tested citrus propagative materials to local nurseries.

ALABAMA

In Auburn, the program is responsible for obtaining pathogen-tested propagative material and the establishment of a foundation planting to maintain and distribute propagative materials of common commercial varieties and unique regional varieties. Foundation plant materials are tested for pathogens & maintained in renovated greenhouse at the Paterson Greenhouse Complex, Auburn University.

USDA-ARS EXOTIC PATHOGENS OF CITRUS COLLECTION

In Beltsville, Maryland, the Exotic Pathogens of Citrus collection (EPUC) maintains an extensive & unique collection in planta collections of graft transmissible pathogens of citrus in high quality greenhouse space.

Citrus pathogen collection includes Candidatus Liberibacter species, Xylella fastidiosa, Citrus tristeza virus (CTV), Citrus yellow mosaic virus, citrus chlorotic dwarf virus and other non-cultured pathogens.

These have been collected from all over the world and also include representatives from the United States. Materials in the collection are used as positive controls upon request by members of the NCPN.

USDA-ARS NATIONAL CLONAL GERMPLASM REPOSITORY FOR CITRUS & DATES (NCGRC)

NCGRC is responsible for acquisition, maintenance, testing, and distribution of citrus germplasm collection.

NCGRC provides importation, quarantine, sanitation & diagnostic services. The NCGRC maintains pathogen-tested citrus foundation materials that can be used by a broad range of clientele including other NCPN-Citrus centers.

The NCGRC holds mostly public domain material that has been through therapy and is pathogen-tested, and is the only collection in the US which has been continuously protected since release from quarantine.

Citrus Germplasm is maintained in a pathogen-free state within protected structures, in field cultivation, and for long-term cryo-preservation.

HAWAII

Hawaii NCPN-Citrus foundation maintains budwood of 15 citrus varieties of current/future importance to Hawaii’s citrus industry & distributes to nurseries, growers, & stakeholders in Hawaii.

Maintenance is at the University of Hawaii & involves upkeep of greenhouse facility; watering, fertilizing, pruning, insect & mite control, biannual testing of plants for targeted pathogens & distribution of budwood to citrus industry.

LOUISIANA

The Louisiana State University (LSU) AgCenter maintains the foundation collection of six important Satsuma varieties and other citrus widely grown in Louisiana & maintained in relative isolation from other citrus. These are tested twice a year for pathogens. Emphasis is given to testing species of Candidatus Liberibacter causing Huanglongbing.

ARIZONA CITRUS FOUNDATION BLOCK

The maintenance and protection of this foundation trees is important for the local industry and acts as a source for California’s Citrus Protection Program CCP as part of the CA & AZ citrus continuum.

The prevention of accidental introduction of exotic citrus diseases is an important task for the Arizona Citrus Foundation Block and is accomplished through a variety of procedures, including thermal therapy and shoot tip grafting.

The Arizona Citrus Foundation Block serves as a source for the citrus industry of Arizona and the nation, providing clean propagative material that excludes insect vectors. Additionally, there is a 8 x 20-foot headhouse.

The Budwood Certification Program maintains a foundation block of about 75 varieties at the University of Arizona, Yuma Mesa Agricultural Center, and Somerton, AZ, and supplies pathogen-tested citrus propagative materials to local nurseries.

The Budwood Certification Program is responsible for maintaining a foundation block of about 75 citrus varieties that are disease-free and screened from insect vectors.

The Arizona Citrus Foundation Block maintains a foundation collection of about 150 disease-free citrus varieties in a 72 x 38 screened facility that excludes insect vectors. Additionally, there is an 8 x 20-foot headhouse.

In Texas, the Citrus Clean Plant Certification Program is managed by Texas A&M University-Kingsville Citrus Center in Weslaco, TX. Texas Germplasm Introduction Program is the sole source for providing pathogen-tested true-to-type certified citrus germplasm to the Texas citrus industry.

In Florida, the Florida Bureau of Citrus Budwood Registration (FBCBR) provides pathogen-tested foundation material to Florida citrus nurseries. Budwood is also exported to out-of-state customers with proper permits.

Production of between 3 & 5 million progeny trees annually from nursery sources.

Testing foundation trees and nursery source trees annually for vectored and endemic citrus graft-transmissible diseases.

Therapy, evaluation, & re-testing all citrus foundation & source trees.

Tracking all cuttings/propagations from trees.

Maintaining the over 1,949 budwood foundation trees of 697 clonal selections.

Inspecting the private nursery, 3,307 budwood source trees and 9,248 seed-source trees every 30 days.

In Puerto Rico, the University of Puerto Rico (UPR) maintains a citrus foundation block of approximately 20 commercial varieties, collection of 33 citrus accessions under screen protected structures.

The foundation blocks and citrus germplasm collection is tested regularly for systemic pathogens.

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NCPN-CITRUS MISSION

Provide reliable sources of high-quality annually propagated citrus material free of graft-transmissible pathogens to citrus nursery industry & researchers ensuring the global competitiveness of the U.S. citrus industry.

In Beltsville, Maryland, the Exotic Pathogens of Citrus program deals with non-cultured pathogens.

In Texas, the Citrus Clean Plant Certification Program is managed by Texas A&M University-Kingsville Citrus Center in Weslaco, TX. Texas Germplasm Introduction Program is the sole source for providing pathogen-tested true-to-type certified citrus germplasm to the Texas citrus industry.

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