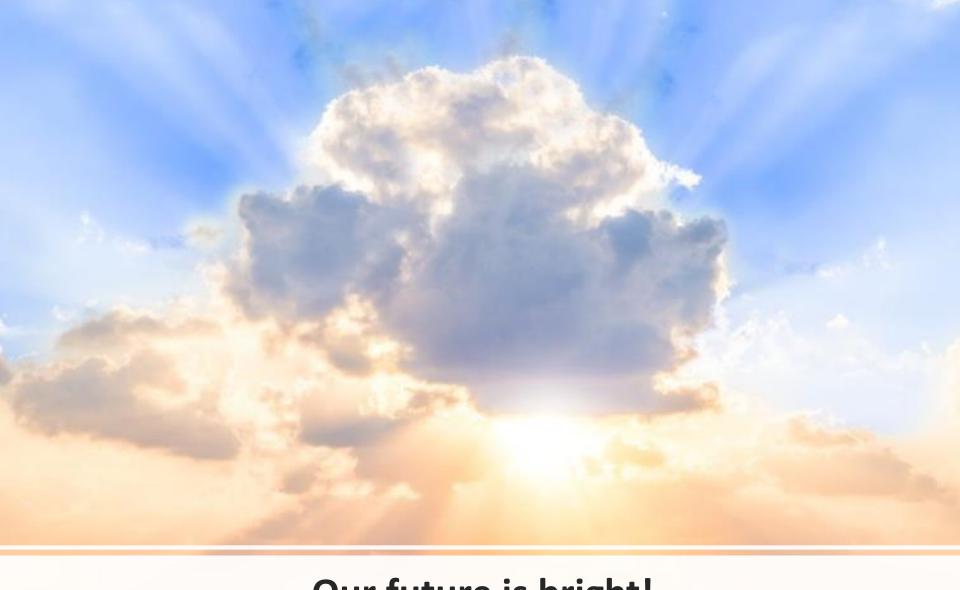






National Clonal Germplasm Repository for Citrus & Dates

MaryLou Polek, Research Leader Robert Krueger, Curator



Our future is bright!



NCGRCD Staff

University/Grant Funded USDA APHIS MAC

Amanda Rawstern, Laboratory
Technician

Student Workers

Ngoc Tran Gerardo Uribe Alexandra Kilzi Ysenia Charco Miguel Canchola

Permanent/Term Federal Staff

MaryLou Polek, Research Leader/Plant Pathologist Robert Krueger, Curator/Horticulturist Manjunath Keremane, Support Scientist Vicki Newman, Biological Science Technician Brittany Moreland, Biological Science Technician Patricia Moore, Secretary Lee Gross, Maintenance Technician (half time) Esteban Rodriguez, Biology Technician (Term)

Program Status:

Holdings - Overall

		ACCESSIONS	INVENTORY
Total		1881	6533
	Citrus & related taxa	1617	5582
	Phoenix spp	147	802
	Citrus pathogens	115	149
	Date Palm Phytoplasma Nucleic Acid Extracts	2	NA



Distributions in 2018

Budwood: 5,350

• Seeds: 1,956

• Pollen: 205 grams





Collections

- Field collection: shared with the University
- Greenhouses:
 - Quarantined accessions (awaiting therapy and testing
 - Field back up
- Screenhouse: sanitized, tested, protected
- Cryopreserved: National Laboratory for Genetic Resource Preservation in Fort Collins, CO
- Date Palm Field Collection: Thermal, CA

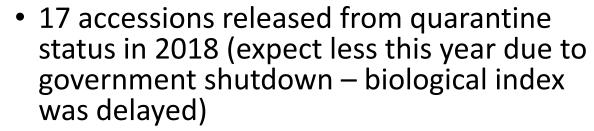








- Currently there are 570 sanitized and pathogen-tested citrus accessions at the National Clonal Germplasm Repository in Riverside, CA
- 406 have been successfully cryopreserved at the National Laboratory for Genetic Resources Preservation in Fort Collins, CO
- 97 are pending viability assessment







Program Status: Date Palm

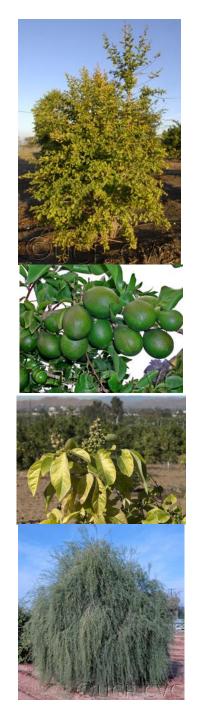
- Tissue cultures have been sent to the NLGRP to begin developing cryopreservation protocols
- Gayle Volk visited Feb. 2019, collected date palm pollen for cryopreservation
- Obtained positive controls to start pathogen testing of new accessions (acquired in tissue culture) received under PCIP
- Optimizing testing protocols for NCGRCD conditions
- Initiated collaborations & submitted research proposals





ACCOMPLISHMENTS 2018

- Successfully completed the requirement for two tests for Citrus greening pathogens in the protected screenhouse, 6 months apart and by external party
- Hold Order lifted
- Executed new Compliance
 Agreement in 2018



Research Activities: Sanitize Citrus Relatives

- Of Repository's 1617 accessions of Citrus and related taxa, 71 are citrus relatives
 - Includes CVC and quarantine accessions
- Many are not compatible to graft inoculate for standard biological indexing methods
- Evaluating current assays
- Investigating alternative methods



Research Activities: Polek

Ensuring Security and Integrity of Valuable Breeding, Research, and Germplasm Collections'. Mauk, Gottwald, Vidalakis, Kahn, Roose, Hartung, Ma, Rivera



- CRB-funded project FY 2018-2019
- Use HLB-sniffing canines to "survey" individual trees on Ag Ops and field perimeters at UC LREC
- Follow up with EDT's and qPCR assays on dogalerted trees (72 in 2017; 288 in 2019)
- Cage selected trees and continually test using qPCR
- All qPCR assays have been negative
- No canine alerts at LREC (Central Valley)





Research Activities - Krueger

- Develop pathogen testing protocols
 - Crop germplasm grant
 - Incorporate new testing technologies/protocols
 - Obtain additional positive controls
- Develop molecular markers to trace important cultivars
- Nutritional & horticultural studies





Our future is bright!

Future Plans

- Expansion of the screenhouse housing the protected citrus collection
- Addition of a modular office structure



