Central California Tristeza Eradication Agency

established 1963

operating as the

Citrus Pest Detection Program
GROWERS

CENTRAL VALLEY PEST CONTROL DISTRICT
5 DIRECTORS
(appointed by the Fresno County Board of Supervisors)

SOUTHERN TULARE COUNTY CITRUS PEST CONTROL DISTRICT
5 DIRECTORS
(appointed by the Tulare County Board of Supervisors)

KERN COUNTY CITRUS PEST CONTROL DISTRICT
5 DIRECTORS
(appointed by the Kern County Board of Supervisors)

CENTRAL CALIFORNIA TRISTEZA ERADICATION AGENCY
CENTRAL CALIFORNIA TRISTEZA ERADICATION AGENCY (CCTEA)
operating as the
CITRUS PEST DETECTION PROGRAM

BOARD OF COMMISSIONERS
7 Members
(appointed by District Boards:
2 Central Valley, 2 Southern Tulare County, 3 Kern County)

Program Manager

Staff
Quick Decline Symptom of *Citrus tristeza virus*

Sweet orange on sour rootstock
MISSION STATEMENT

• To identify and eradicate the citrus tristeza virus in a timely, orderly, and cost effective manner.

• In addition, we encourage and support appropriate research programs to assist in the elimination of the threat of the virus.
Quarantine Status of California

- Regulated
- Quarantine
- Suppressive
Elements of Disease Control

Citrus Tristeza Virus Interior Quarantine - 1943
Administered by CDFA, Enforced by County Ag Commissioners

CDFA Nursery Services Program - 1962
Administered by CDFA, Funded by CA Nursery Board and Nurserymen

Central California Tristeza Eradication Agency - 1963
Administered by Special Districts in Tri - Counties

California Citrus Clonal Protection Program - 1968
Administered by U. C. Riverside
Fund by Citrus Research Board and CA Citrus Nursery Board
The Evolution of the Agency
A Brief History

• Until 1992: Diagnosis via Biocharacterization

• 1992-1995: First complete systematic subsampling survey of the 5 SJV citrus pest control districts

• 1995-1998: Aggressive tree removal program

• 1998-2002: Maintenance program, 4-year cycle

• 2002-2007: Maintenance program, extended to 5-year cycle
Updated Mission

The current goal is to benefit the citrus industry by identifying and removing trees infected with economically damaging strains of CTV.
2009 - 2013

- Systematic Sub-sampling Survey on a 4-year cycle: 25% of all acreage in JPA Districts each year

- Singles Survey of groves with MCA13 suspect-positive results in the previous year; removal of trees confirmed as MCA13 positive

- Monitor virus titer in field “test” trees
The Plan Calls for:

Roughly:

59,000 Acres
Surveyed Annually

Yielding:

390,000 samples
collected annually
Approximately:

450,000 Samples Processed Annually

Requiring about:

850,000 ELISA tests annually

$2.2 Million budget

15 staff employed year-round     80 seasonal employees
Field and Laboratory Operations
Mapping
Systematic Subsampling Survey (Hierarchical Method*)

- 25% acreage per year (4-year cycle)
- Collect every 4th group of 4 trees
- 3 leaves per tree
- 4 trees per sample

*Gottwald & Hughes
Bundle of “HS” Samples
Composite or Singles Survey

- Conducted in groves with MCA13-suspect positive results in subsampling
- Every tree is sampled
- 2 trees per sample, 6 leaves per tree (composite sample)
- Two positive confirmations lead to removal
Bundles and Bags of Singles Samples
Processing Samples
The Chem Lab
ELISA
A Serological Assay

E  Enzyme
L  Linked
I  Immuno
S  Sorbent
A  Assay
Tests Types

- **Monoclonal**: one binding site - single kind of antibody - from hybridomas (cell line) – for diagnosis of MCA13-reactive strains of *Citrus tristeza virus*

- **Polyclonal**: many different binding sites – signals the presence of any strain of CTV
Greenhouse
Controls for ELISA
Houses California CTV Isolate Collection

Currently contains 421 isolates

- 282 isolates have been characterized
- 39 are in progress
Biocharacterization Experiments
Symptoms
Screenhouse
Remember, the Citrus Pest Detection Program is on your side!

Thank you!