

# Citrus Greening in Belize-

## A new threat to the citrus industry



Francisco Gutierrez  
Technical Director, Plant Health Services  
Belize Agricultural Health Authority

# BELIZE

## MAP OF BELIZE

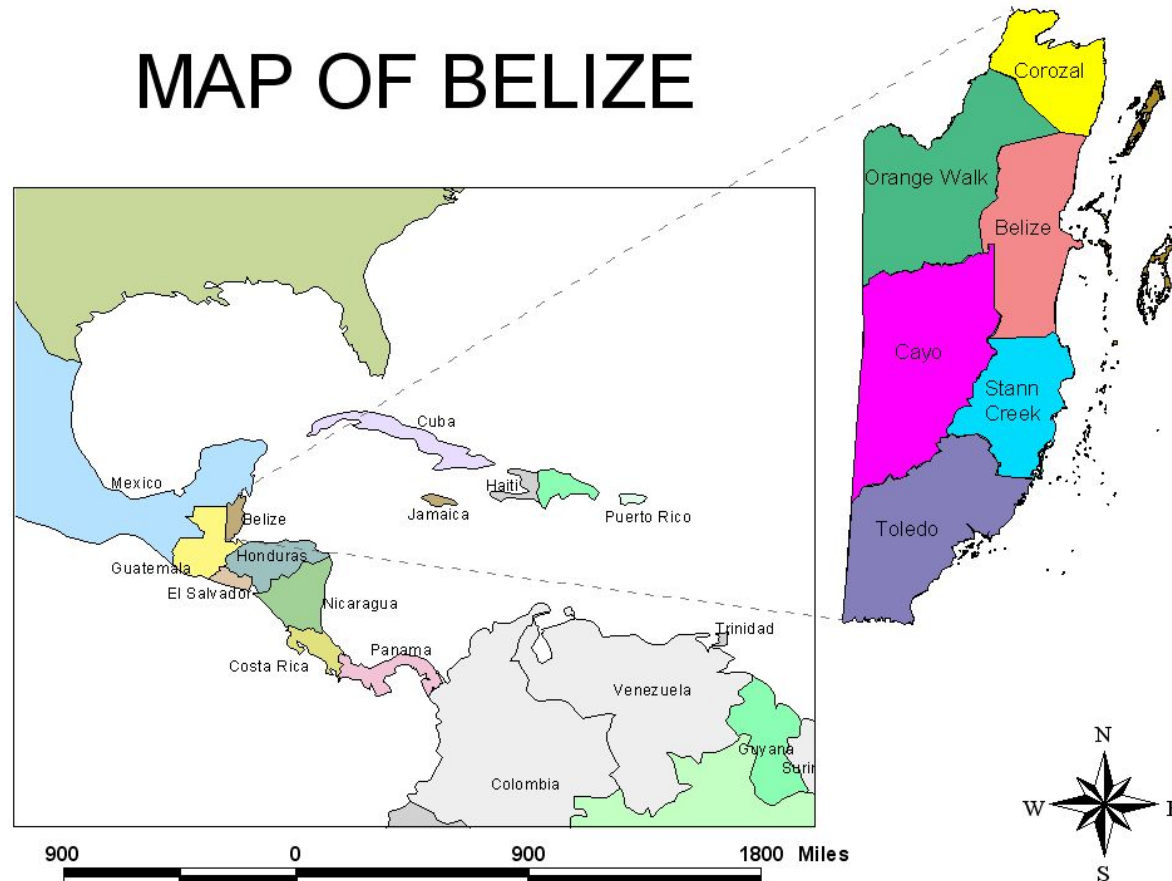
Area:  
8,867 Square Miles.

Population:  
310,000

Foreign Exchange  
Earnings (Agri)

BZ\$ 313.27 million

Exchange Rate:  
BZ \$2.00=US \$1.00



## Economic Importance:

Agriculture Products Foreign Exchange Earnings : 313.27 Million BZ \$.

Sugar: BZ \$ 71.32

Citrus: BZ \$ 67.10

Banana: BZ \$ 22.13

Papaya: BZ \$ 21.20



# Citrus Industry

50. k Acres of Citrus

67.1 Million Dollar  
Industry.

Citrus Growers Association

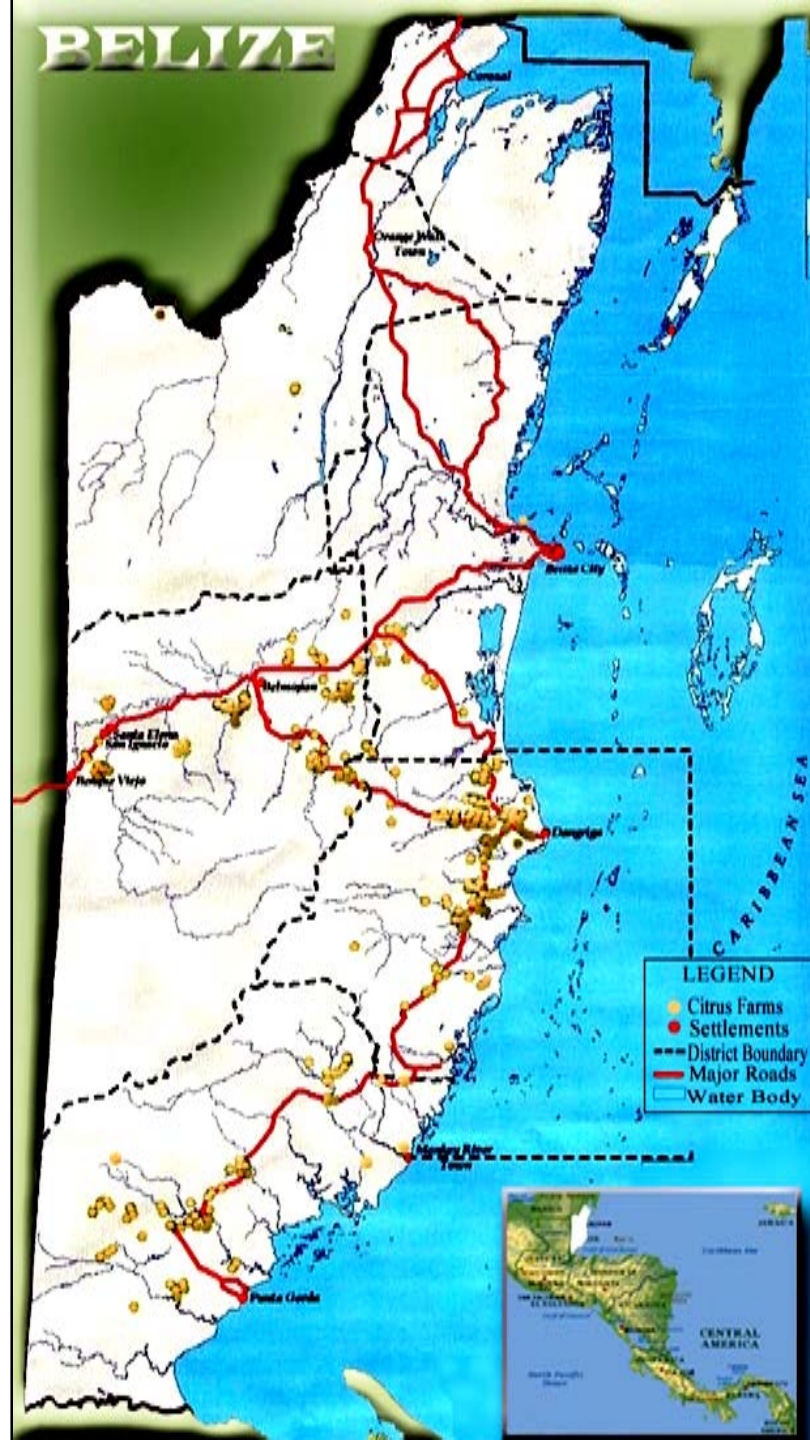
527 Total growers  
Delivered fruit.

2007-2008 Season.

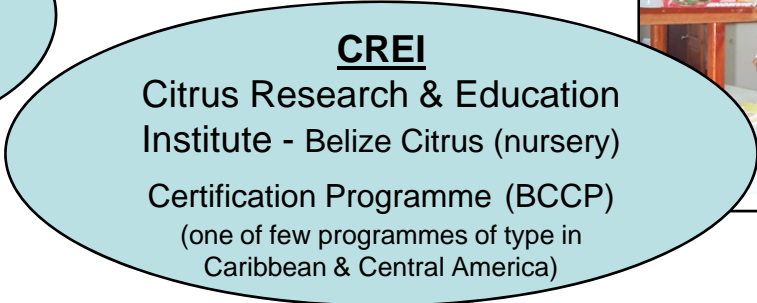
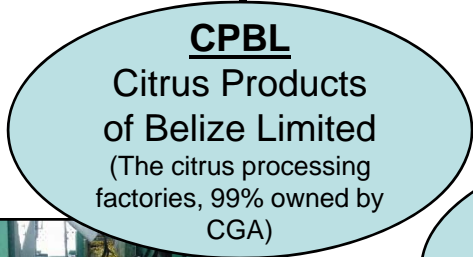
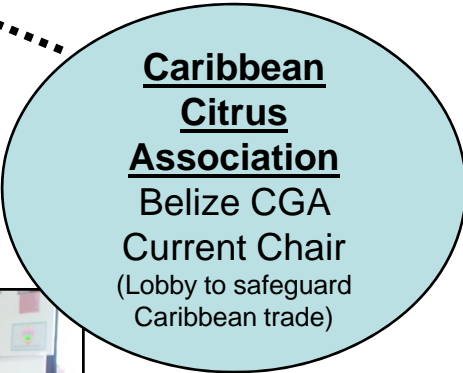
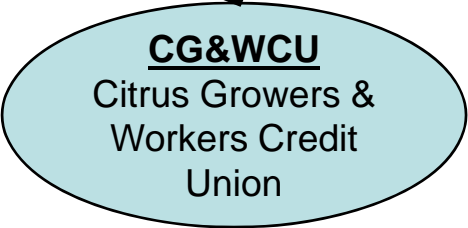
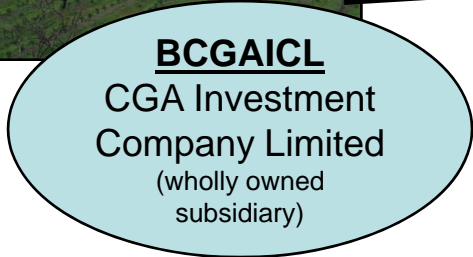
7,102,188 Million boxes.



*Citrus is grown throughout Belize!*



# Governance & Organizational Structure of CGA



# Citrus Research & Education Institute (CREI)

## MISSION

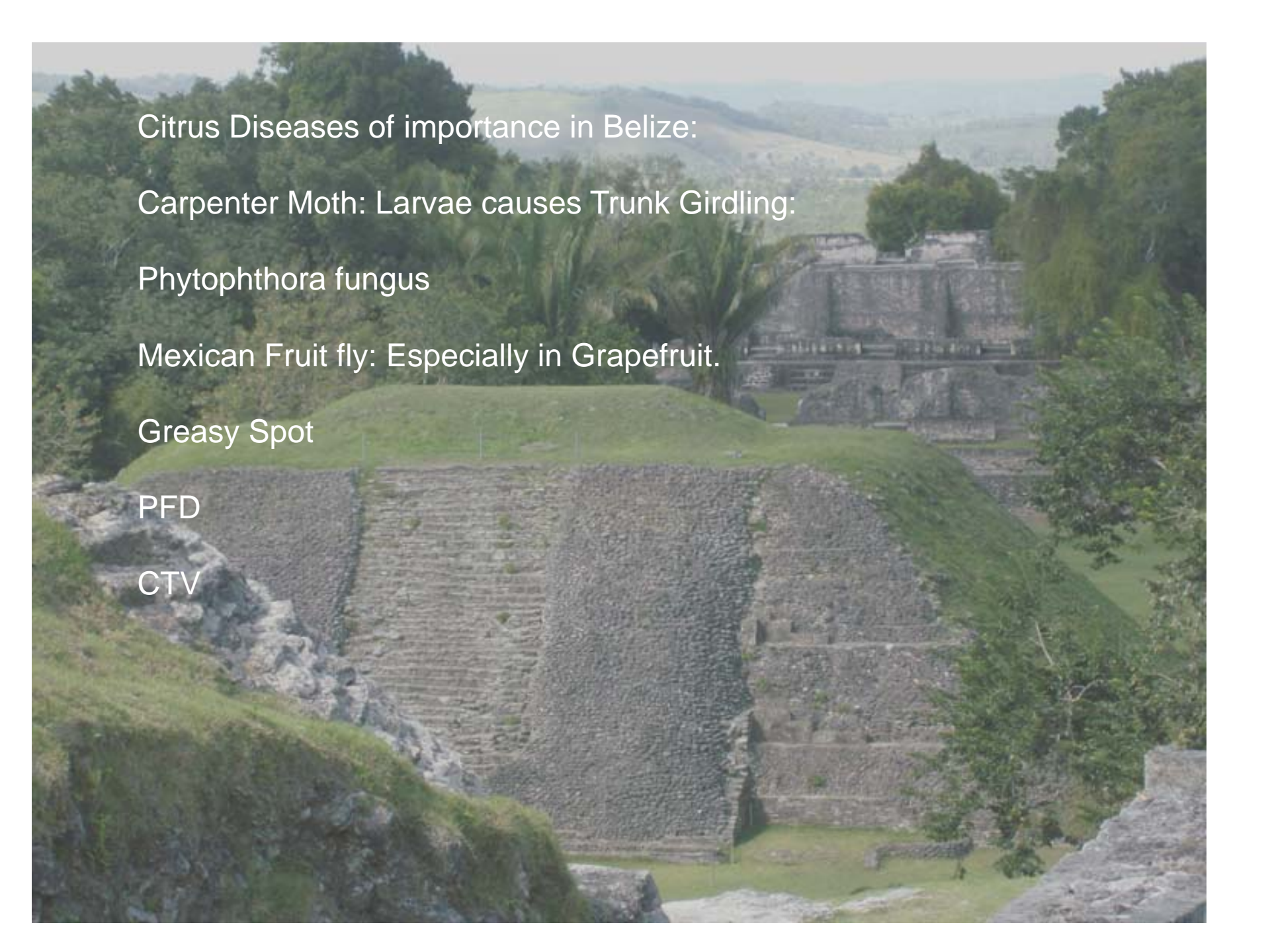
*To work with citrus growers and others*

*To develop and share technology*

*That leads to sustainable citrus farming systems*



## Nursery Certification & Disease Prevention



Citrus Diseases of importance in Belize:

Carpenter Moth: Larvae causes Trunk Girdling:

Phytophthora fungus

Mexican Fruit fly: Especially in Grapefruit.

Greasy Spot

PFD

CTV

# Nursery Program

Belize Citrus nursery Certification Program: Established in 1994

For the purpose of producing disease free planting material to growers.

Laws of Belize. Stipulated by BAHA.

Belize citrus certification committee:  
Technical aspects in plant health  
and Certification issues.

# History of Exotic Disease Surveillance in Belize



**Survey 2005**



**Survey 2007**

## Disease Surveillance:

February 2008: country wide surveillance for

Citrus Canker :————→ Negative

Citrus Leprosis: —————→ Negative

*Diasporina citri*: —————→ Negative for HLB bacteria,  
Tested in University of California, Riverside.

Samples collected from 66 sites:      low to medium populations

Parasitic wasp: probably *Tamarixia radiata*  
Entomopathogenic fungus.

February 2009 Surveillance:

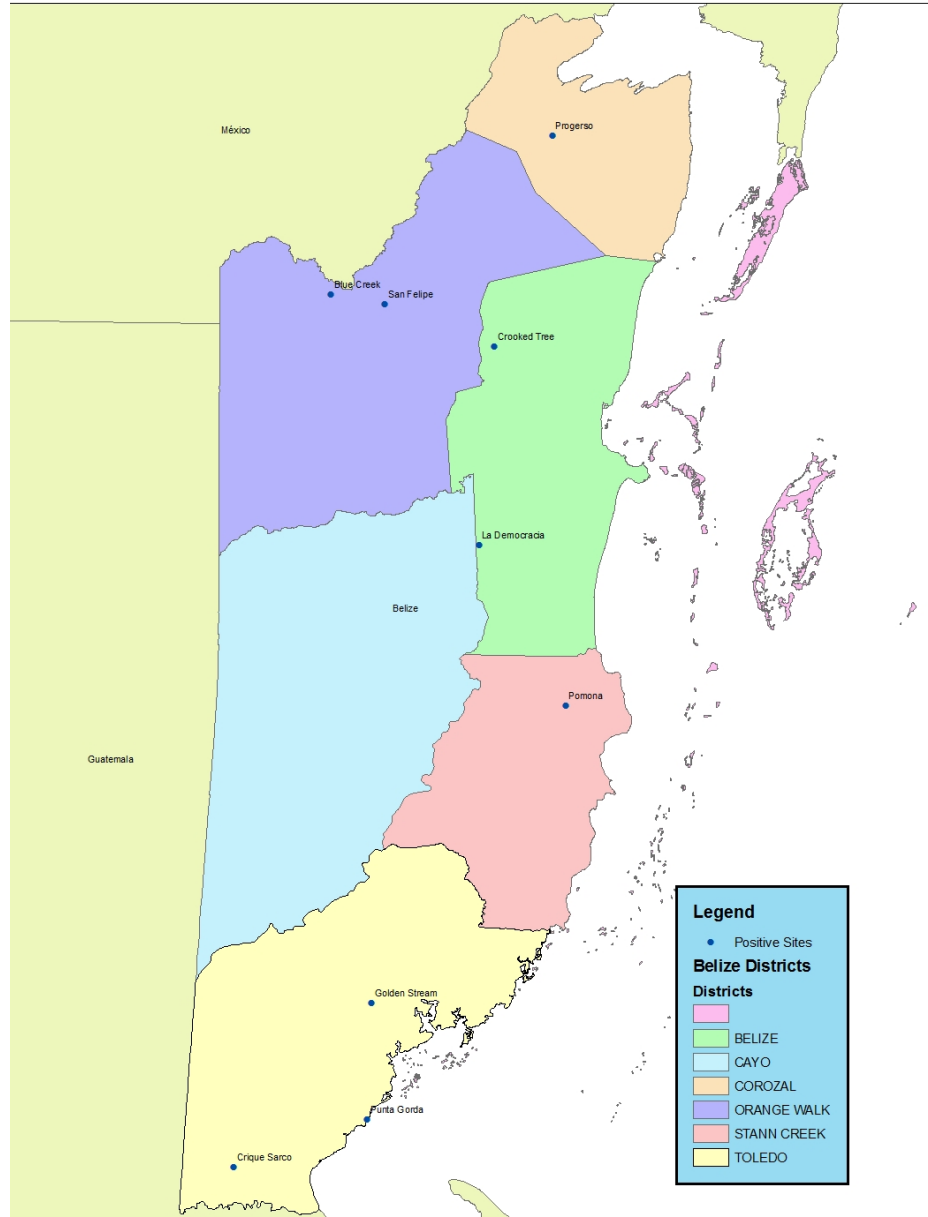
71 Samples of ACP collected and sent to Riverside.

Samples were analysed until the end of April.

9 Positive Cases.

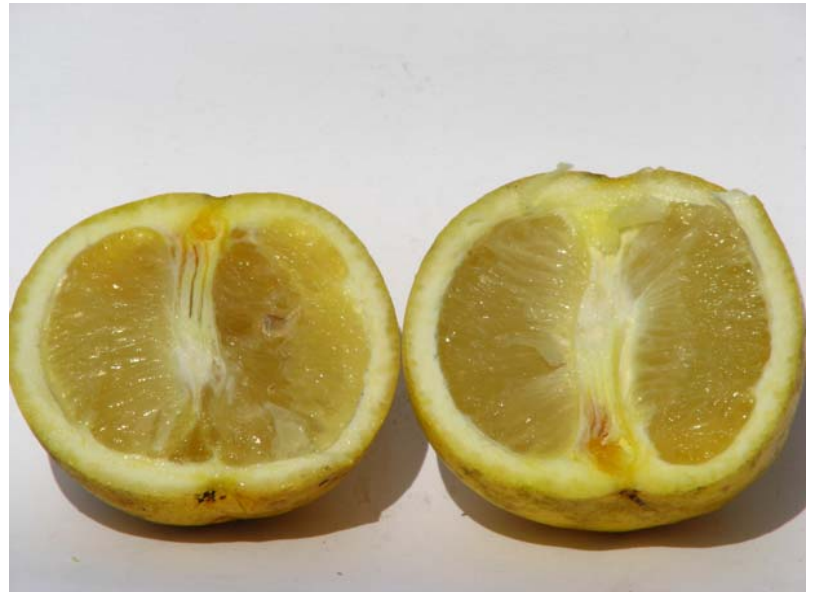


# Citrus Greening In Belize



# Symptoms seen in Belize





# Emergency Response

Delimiting Survey: prioritizing the 'hot spots'

OIRSA: Declaration of Regional Emergency

Release of emergency funds

Formation: Citrus Greening Emergency Response Committee.

OIRSA, BAHA, INDUSTRY, MAF, USDA, CREI

ACTION : Consultant Mike Irey

OIRSA: Gisela Tapia.

Visit from Ing. Hector Sanchez, SENSICA

Awareness campaign: growers and other stakeholders

Training: Surveillance Procedures

Diagnostic Procedures for PCR Testing.

# Way Forward

- Delimiting Survey on the whole industry
- Improvement in Lab Capacity- PCR capacity
- Legal Instrument
- Resource Mobilization – OIRSA
- Grower Education Campaign
- Secure Budwood and Seed Source Trees
- Screened nurseries
- Technical Collaboration

Thank you