

# Citrus Greening Management in Jamaica



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**Ministry of Agriculture and Fisheries, Jamaica**

**October 13, 2020**

# OVERVIEW

- ▶ Introduction
- ▶ HLB symptoms and signs
- ▶ FAO Project Overview- Jamaica
  - ▶ Technical Capacity
  - ▶ Infrastructure improvements
  - ▶ Areawide Integrated Pest Management
- ▶ Regional FAO Project
- ▶ Status of Ongoing Programmes - Jamaica
  - ▶ Plant Quarantine, JCPA
  - ▶ R&DD, Post Entry Quarantine
  - ▶ RADA
- ▶ Future Plans

# INTRODUCTION

- ▶ Jamaica has <9,000 hectares under citrus cultivation, with about 5,000 small farmers, 260 medium farmers and 11 large farmers comprising the industry.
- ▶ The varieties grown are sweet-orange, tangerine, grapefruit, ortanique and lime.



# CITRUS TYPES - ACREAGE

- ▶ **ORANGE**      **95.00%**
- ▶ **LIME**            **3.33%**
- ▶ **GRAPEFRUIT**    **1.47%**

*Source: ABIS (2019)*

# INTRODUCTION

- The vector: Citrus psyllid, *Diaphorina citri* (Kuwayama) was confirmed in Jamaica from 2002
- In October 2009, Citrus huanglongbing (HLB) / greening disease, caused by the pathogen *Liberibacter asiaticus*, was confirmed in commercial groves in St. Catherine and subsequently throughout the island.

# Foliar Symptoms



**Asymmetrical blotchy mottle**



**Corky Veins**



**Yellow dragons**

# Fruit Symptoms



**Colour inversion**



**Aborted seeds**



**Curved columella**

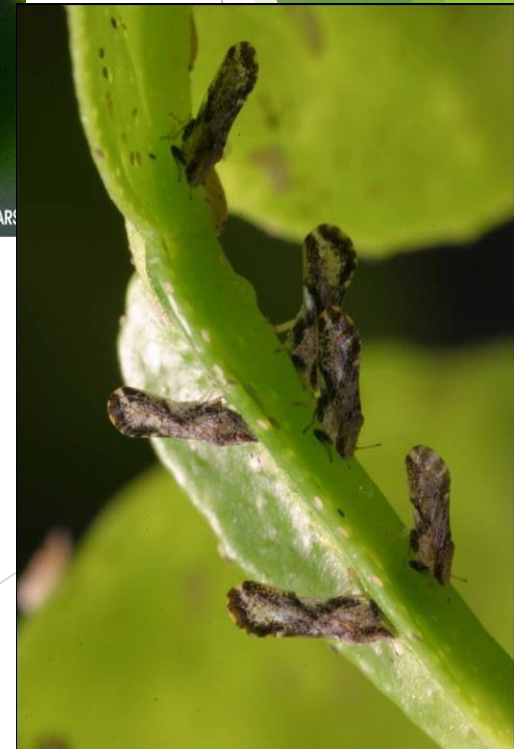
# The vector: Asian Citrus Psyllid



**Eggs**



**Nymph**



**Adult**



# Incidence of Citrus Greening survey in 2011

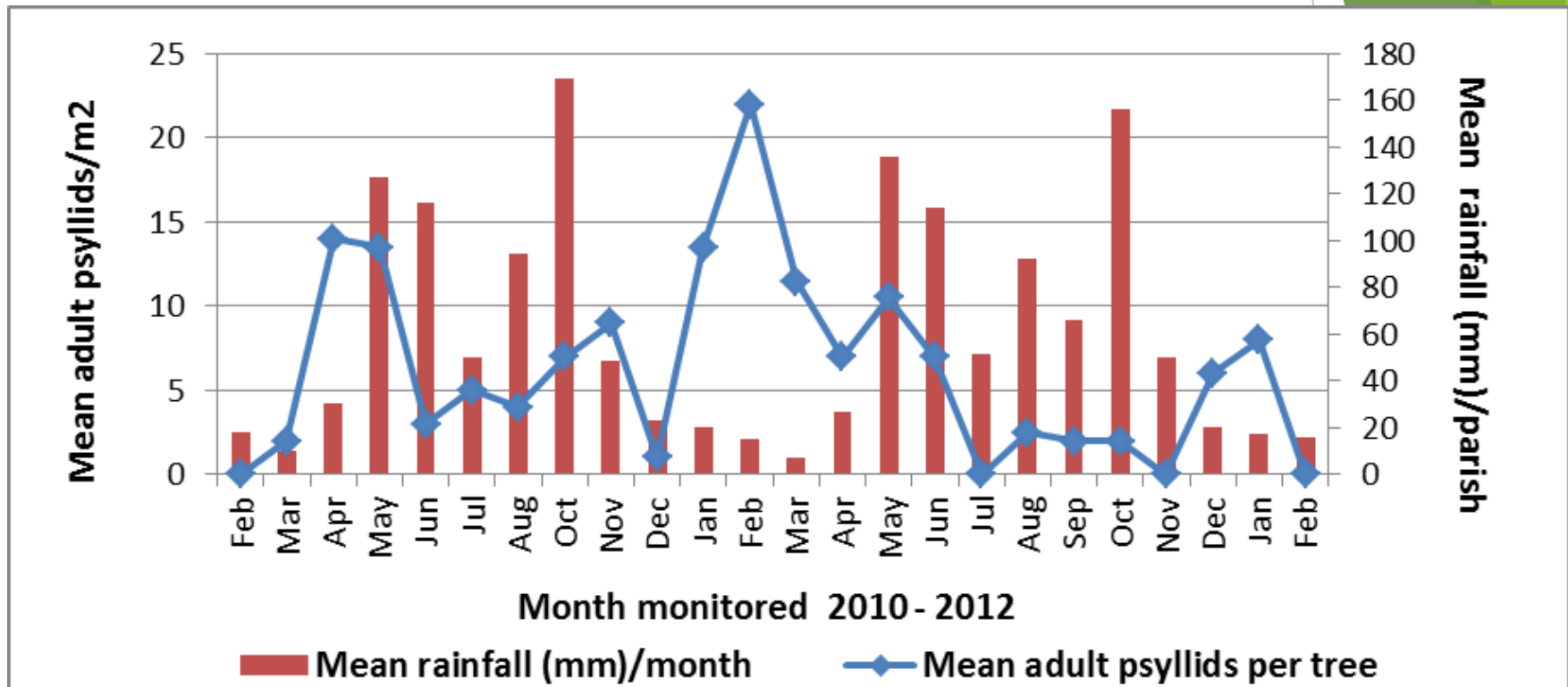
## ▶ **St. Catherine**

- ▶ Highest incidence 45.31% to 100%
- ▶ Least incidence 6.9% to 7.41 %

## ▶ **Clarendon**

- ▶ The highest was 93.33%
- ▶ The least 7.4% to 15 %

# Psyllid Population Dynamics Study, February 2010 to February 2012 by Plant Protection Unit, R&DD, MoAF : Mean adult psyllids/m<sup>2</sup> in St. Catherine



# FAO PROJECT'S GOAL

- ▶ To build technical capacity
- ▶ Increase the knowledge on how to sustainably manage HLB
  - ▶ Through coordinated protection, mitigation and resuscitation strategies
  - ▶ thus contributing to the control of the spread of HLB in 75% of small farms.

# Summary of project objectives

## *Objective 1*

- ▶ To develop and implement a management programme for HLB through
  - ▶ The identification of economically feasible management options for the disease within the Jamaican context
  - ▶ Training by building the capacity of growers and other key stakeholders in Government and the industry to implement recommended management strategies for the disease



# Summary of project objectives



## *Objective 2*

- ▶ To strengthen infrastructural, technical and institutional capacities for effective control of the disease through
  - ▶ Upgrade of diagnostic laboratory facilities,
  - ▶ the construction of two screen houses, for the production of certified budwood material and a prototype nursery provision of training in molecular diagnostics, shoot tip grafting and nursery production

# Summary of project objectives

## *Objective 3*

- ▶ To produce information products that increase knowledge and sensitize stakeholders and the public re HLB and its management



# Oversight: National Project Steering Committee

- Chair: Chief Technical Director)
- FAO
- Dr Lisa Myers-Morgan (National Project Coordinator)
- National Consultant – Plant Protection
- Plant Protection,
- Plant Quarantine,
- Policy and Planning
- Jamaica Citrus Protection Agency
- Citrus Growers Association (CGA)
- RADA
- CARDI
- UWI

# Implementers: Technical Working Group (TWG)

- ▶ **Chair National Coordinator: Dr. Lisa Myers-Morgan**
- ▶ **Assistant Chair Mrs Michelle Sherwood, Plant Protection**
- ▶ **Jamaica Citrus Protection Agency: Mr Alfred Barrett**
- ▶ **Plant Protection: Ms Jeannette Williams**
- ▶ **PEQ: Dr Peta Gaye Chang**
- ▶ **Plant Quarantine: Ms Camille Marks/Mrs Juliet Goldsmith**
- ▶ **RADA: Mr Glenville Hall**
- ▶ **National Consultant: Dr. Florence Young**



# Area-wide Integrated Management Programme

- ▶ Crop Protection Consultants
- ▶ Dr. Phil Stansly, University of Florida
- ▶ Mr. Paul Mears DPI Florida, USA
- ▶ Three missions 2011 and 2012

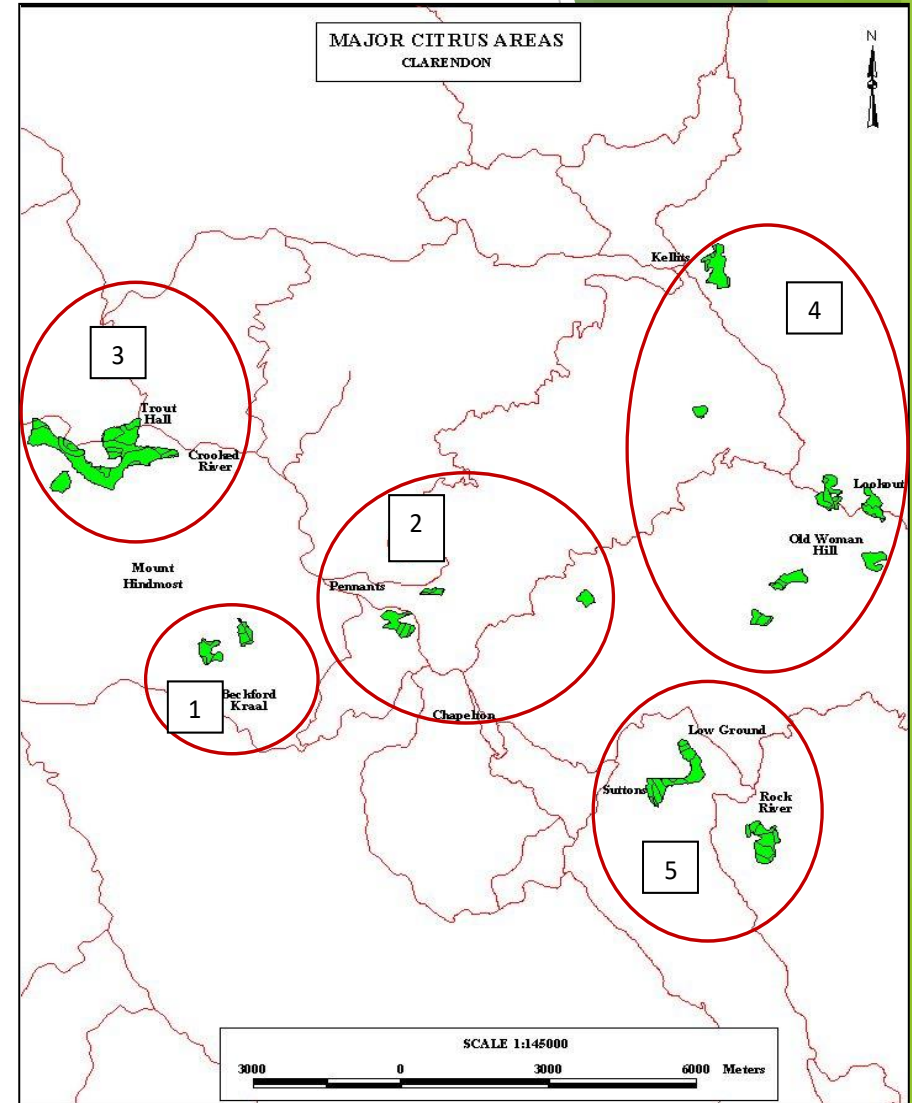
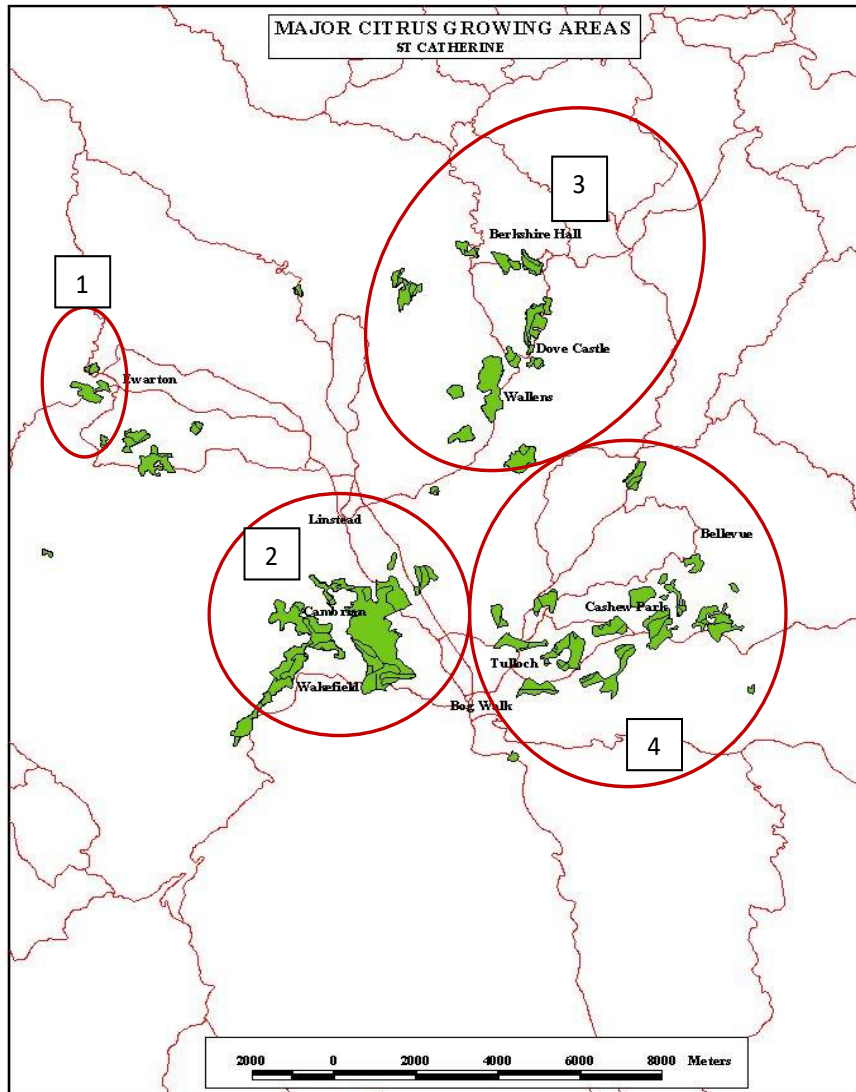


# Area-wide Integrated Management Programme

- Centres around functional citrus management clusters
- Clusters Implement:
  - Commercial spray programme
    - ACP vector control programme thru Coordinated “dormant” spray programme during December to January
    - During the summer target nymphs using a biorational + oil (eg abamectin + oil, movento + oil)
    - Summer spray programme will be timed specifically based on data collected under the monitoring programme using tap sampling and sticky traps
  - Residential spray programme :
    - Targets residences in and around pilot commercial areas

# Area-wide Integrated Management Programme

## Citrus greening management areas



# Area-wide Integrated Management Programme

## Biological control

- Biological Control Agent: *Tamarixia radiata* which was a fortuitous introduction; Augmentation
- Commercial programme
  - Releases done in abandoned citrus groves
  - Best during the flushing period after the May and August rains
- Residential
  - Releases done in *Murraya* hedges of residential properties, on flushing hedges throughout the year
- Facilities at Bodles research station supplied and released 9000 wasps within the pilot areas



# Biological Control-

- ▶ The parasitism levels (2010 to 2011)
  - ▶ 8% - 38 % in St Mary,
  - ▶ 8 – 17 % in Trelawny and
  - ▶ 10 – 34 % in St. Catherine
- ▶ Survey conducted June 15 to September 20, 2011 parasitism levels on seven farms in six districts
  - ▶ Ranging from 0 – 100%.
  - ▶ No parasitism was detected at Rosemount and Redwood, while
  - ▶ high parasitism levels over 80% were recorded at Knollis, Rose Hall, Bog Walk and Wallens

# Area-wide Integrated Management Programme

## Crop Nutrition:

- Not a cure but helps to relieve tree stress and improve growth and yields in the presence of the disease
- Adequate fertilization (NPK soil applied and foliar micro nutrient applications e.g. Citrimix and Agphite),
- Foliar fertilizers very specific to citrus and is applied on leaves with insecticide application in commercial programme.
- The programme involves the application of foliar nutritional supplements for 3-4 times per year to citrus groves after major flushing cycles.
- Irrigation and weed control an important horticultural practice which helps also to relieve tree stress

# Area-wide Integrated Management Programme

## Coordinated spray programme:

- During the period, three missions were completed by the Consultants
- Area-Wide Integrated Management System (AIMS) developed and its implementation evaluated
- 30% of citrus area benefited from intervention approx. 10% are small farms
- Clusters are seeing improvement in the appearance of their trees
- *Psyllid vector population is  $<1$ /tree using the tap sampling method post intervention*



# Training of trainers conducted: AIMS

- Training conducted in three locations
- 98 persons trained
- Selected extension officers from all parishes trained; Cluster leaders and selected farmers from other parishes
- Trainers: Mr. Paul Mears (Consultant), R&DD and JCPA





# Production of clean planting material

## ► Shoot Tip Grafting (STG) Consultancy Phase 1,

- Dr. Olga Mas Camacho - Cuba
- Conducted a four weeks training in STG at Bodles with participants from R&D, UWI, SRC, Private company and JCPA
- Seven citrus varieties selected by the industry for STG. All successfully STGed. Over 100 STGed plants done
  - Tangerine
  - Sweet seeded grapefruit
  - Jamaican Tangelo
  - West Indian Lime
  - Ortanique
  - Local Valencia
  - Surprise Navel



# Production of clean planting material

- ▶ Shoot Tip Grafting (STG) Consultancy phase 2,
  - ▶ Dr. Romualdo Perez Castillo - Cuba
  - ▶ 3 wks training course on re-grafting of STG plants on vigorous rootstock
  - ▶ Propagation of Clemelin11-20 indicator buds
  - ▶ STG Plants re-grafted on
    - ▶ Carrizo citrange
    - ▶ Citrus macrophylla
    - ▶ Rough lemon
    - ▶ Citrus Volkameriana
  - ▶ STG plants to be released within 2-3 years following biological indexing and if deemed free of graft transmissible pathogens



**Credits Dr R. Castillo**

# Production of clean planting material

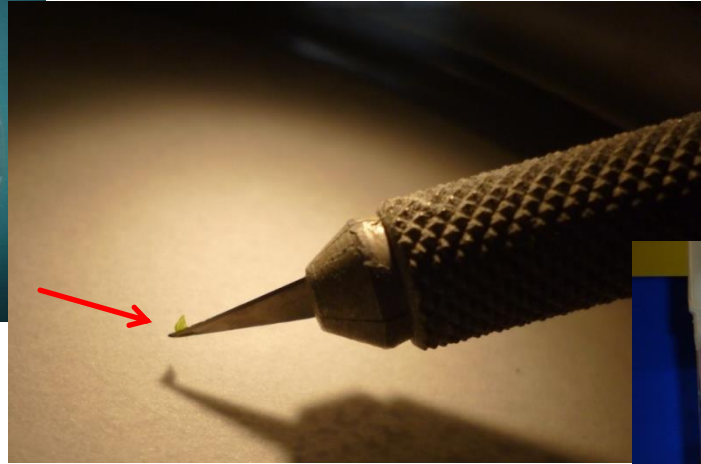
- ▶ Material from screened existing foundation citrus material which has tested negative for graft transmissible pathogens including that for HLB will be utilized initially as bud wood material for industry
- ▶ Material should be available by December 2013



# Shoot tip Grafting Participants



# Aspects of Shoot Tip grafting Procedure



# Building capacity of nursery production systems

- ▶ Nursery Consultant,
- ▶ Mr. Nate Jameson
  - ▶ One week nursery training focusing on pathogen exclusion and protection of certified planting material prior to sale to growers
  - ▶ 20 participants trained inclusive of nursery operators
  - ▶ Nursery training manual developed and to be shared with nursery operators



# Building capacity to detect and diagnose HLB

- Citrus Greening Diagnostic Training at UWI August 2011
- Consultant Dr Sherline Brown UWI Molecular Biology
- 10 participants from R&D, JCPA, Plant Quarantine, private company
- Citrus plants from STG have been screened for HLB pathogen using upgraded facilities and trained technicians



(Credits Dr. S. Brown, UWI)

# Improved infrastructure

- Molecular Lab upgraded
  - Molecular testing of citrus plants for HLB eg nurseries and STG plants
- Two screen house facilities constructed at Post Entry Quarantine Facility, Bodles and Grove Place Manchester
- Demo-Nursery at Grove Place, Manchester





# Improved infrastructure

- ▶ Screen house with capacity to house 900 mature plants and produce 120, 000 bud eyes for industry
- ▶ Demo Nursery at Grove Place to be maintained by WINDALCO can house up to 7000 plants
- ▶ However target is to produce 40,000 plants/year to meet industry needs hence other nurseries must be constructed using guidelines to fill gap.
- ▶ Maximum capacity taken off by industry in past is 120,000 plants total



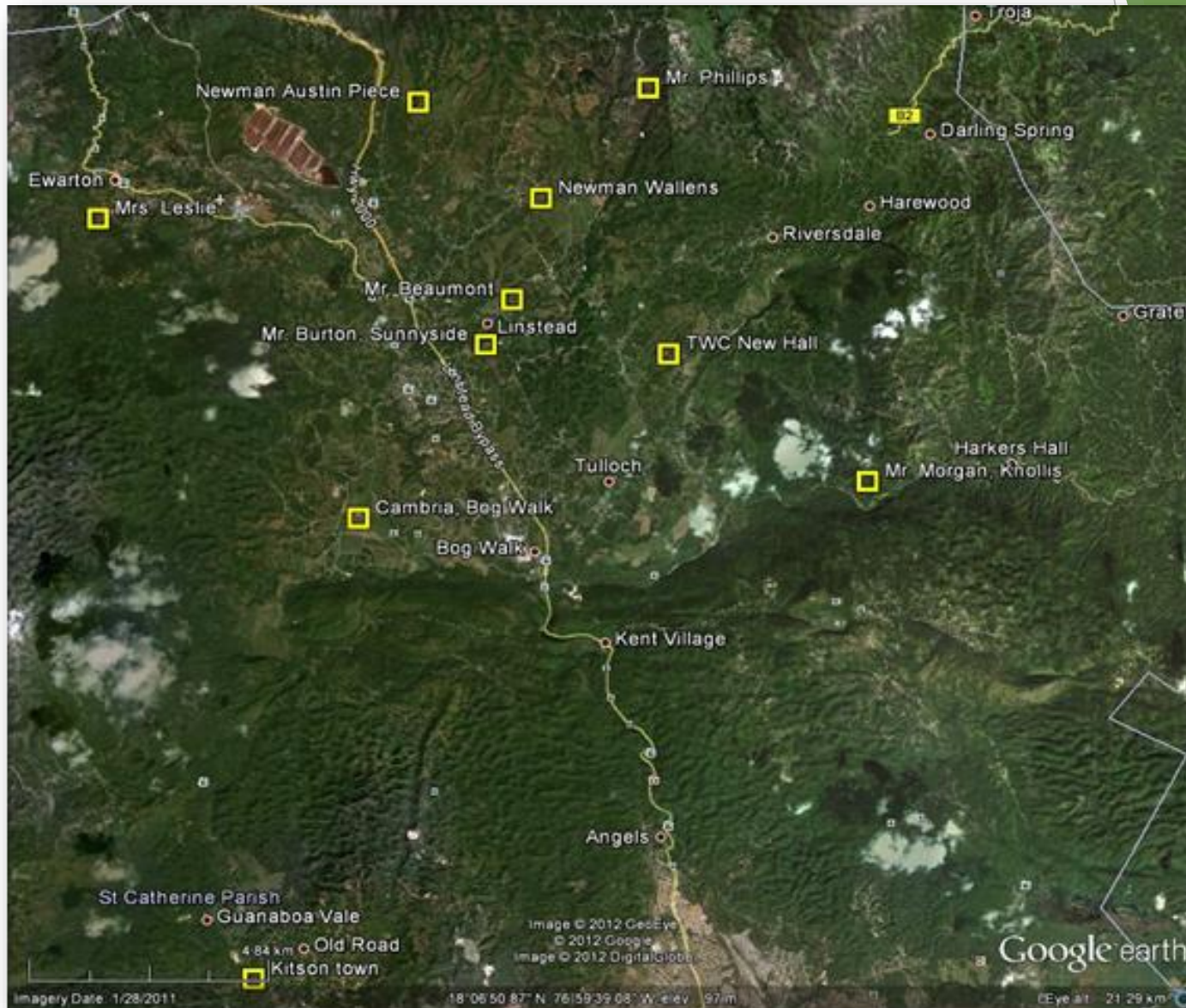
# Public Awareness

- Products distributed through RADA to farmers, input suppliers and extension areas
- Video is featured on RADA's YouTube and aired on public television
- Seven products available at MOAs website
- Link on MOAs website e-mailed to FAOs list serve in the region
- Agricultural shows and school functions
  - Features in print and electronic media
    - Articles
    - Interviews
    - Video on JIS (in the time allotted for Government broadcast)
    - Newsletters

# Post Implementation monitoring sites in Clarendon



# Post implementation monitoring sites in St Catherine



# Research

## Plot at Montpellier ARS (R&DD)

- ▶ Two existing citrus plots at Montpellier currently utilized as demonstration plot of the AIMS:
  - ▶ Hatracked rootstock scion combination trial plot
  - ▶ Frost Valencia trial plot
  - ▶ Nutritional treatment + psyllid management imposed
- ▶ Research data will be used to guide the management programme in the industry



# Nutritional Programme

- ▶ Last two years of data in Frost Valencia treated plots at Montpellier show steady increase in number of fruits. Number of fruits in untreated plots remain steady
- ▶ Size of fruits range between medium to small. Average weight has remained constant
- ▶ Similar observations made in hatracked treated vs untreated plots
- ▶ No significant differences between treatments.

# Status of Pilot Areas end of the Project

- ▶ St. Catherine cluster experienced significant fruit drop due to prolonged drought 2014
- ▶ Clarendon clusters not experiencing sig fruit drop. Clusters expanded from 36 to 45 members
- ▶ Large growers in St Catherine have pushed unproductive blocks of citrus
- ▶ Incidence of HLB >90% except in one location in Clarendon 0%



# Citrus Greening Management Support to the Region by Jamaica

- ▶ FAO Regional Project (2013)
  - ▶ Belize
  - ▶ St. Kitts and Nevis
  - ▶ Bahamas
  - ▶ Domionica
  - ▶ Barbados
- ▶ Regional Visit to Jamaica
  - ▶ Barbados



# **Update re Management of Citrus greening, Huanglongbing (HLB) or yellow dragon disease in Jamaica**

# Post Entry Quarantine - Clean Seed Programme for citrus

- ▶ Under the Citrus Plant Regulation 1999, PEQ o
  - ▶ Maintain/Preserve a repository for both local and imported citrus varieties (54).
  - ▶ Test and ensure that repository is free from economic diseases of Citrus
  - ▶ Propagation of desired citrus for Industry
  - ▶ Dissemination of desired citrus through JCPA
  - ▶ Improved methods for rapid testing and production

# Varieties - Germplasm Bank

- ▶ Sweet Orange
  - ▶ Marris Early
  - ▶ Hamlin
  - ▶ Valencia (Frost, Cutter, Olinda)
  - ▶ Joppa
  - ▶ Parson Brown
  - ▶ Pera Sweet
  - ▶ Salustina Gil
  - ▶ Madam vinous
  - ▶ Amber Sweet
  - ▶ Pineapple Sweet
- ▶ Gou Tou
- ▶ Cara cara
- ▶ Lime/Lemon
  - ▶ Bearss Lime
  - ▶ West Indian Lime
  - ▶ Australian Finger lime
  - ▶ Villafranca
  - ▶ C. volkameriana
  - ▶ Schuab Rough lemon
  - ▶ Yuzu

# Varieties - Germplasm Bank

- ▶ Mandarins
  - ▶ Clementine
  - ▶ Dancy  
Mandarin/Tangerine
  - ▶ Clemilin 11
  - ▶ Fortune
  - ▶ Parson special
  - ▶ Cleopatra
- ▶ Kumquat
  - ▶ Meiwa
- ▶ Pummelo & Grapefruit
  - ▶ Frost Marsh
  - ▶ Star Ruby
  - ▶ Rio Red
  - ▶ Oroblanco
- ▶ Navel
  - ▶ Newhall
  - ▶ Washington
  - ▶ Gillette

# Varieties - Germplasm Bank

- ▶ Tangors and Tangelo
  - ▶ Ortanique tangor
  - ▶ Ugli
  - ▶ Calamondin
  - ▶ Page (tangelo and mandarin cross)
- ▶ Arizona 861 Citron
- ▶ Carizzo citrange
- ▶ Swingle citrumelo
- ▶ Troyer citrange
- ▶ Rusk citrange
- ▶ C-32

# New Accessions - 2018-2019

- ▶ Tangelo
  - ▶ Orlando
- ▶ Lemon
  - ▶ Eureka
  - ▶ Lisbon
  - ▶ Improved Meyer
  - ▶ Bearris Sicily
  - ▶ Budda's Hand
  - ▶ Variagated pink
  - ▶ Pink lemon
- ▶ Mandarin
  - ▶ Page
  - ▶ Boreneo Rangpur
- ▶ Orange
  - ▶ Temple (Ja variety)
  - ▶ Midnight orange
  - ▶ Delta Valencia
  - ▶ Bream Tarocco (blood)
  - ▶ Seville (sour)

# New Accessions - 2018-2019

- ▶ Pommelo
  - ▶ Hawaiian pink
  - ▶ Giant pink pommelo
- ▶ Kumquat
  - ▶ Tavares limequat
  - ▶ Fukushu/Changshue
- ▶ Other
  - ▶ Limequat
  - ▶ Sour orange

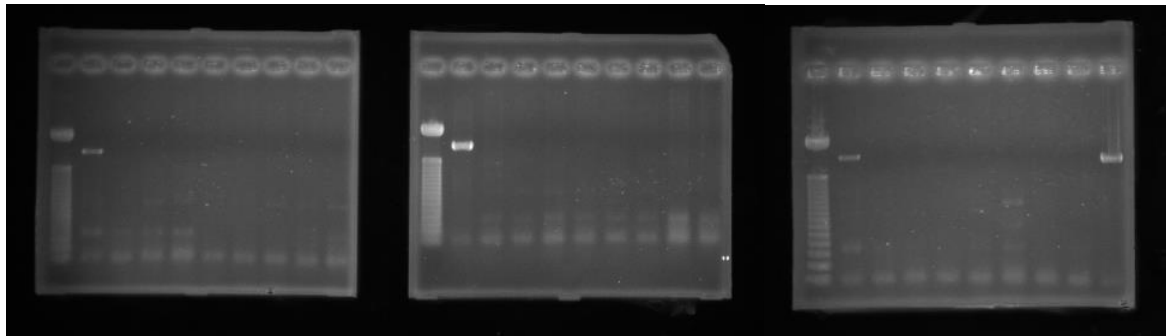


# Testing

Disease/Pathogen	Type of Test		
	Bio-indexing	Serology	PCR
<i>Citrus tristeza virus</i>	X	X	
Citrus greening			X
Cachexia	X		
Exocortis	X		
Concave gum	X		
<i>Dweet mottle virus</i>	X		
Infectious variegation	X		
Psorosis	X		
Tatterleaf	X		

# Testing

- ▶ 2015
  - ▶ Valencias, ortaniques, tangelos, tangerines, grapefruit
    - **Negative for Cachexia**
  - ▶ Ortaniques, tangelos negative for Exocortis
  - ▶ Calamondin, Navels, Salustiana, Marrs Early, C. volk, Rio red, Joppa sweet, grapefruit, Tangelos, WI Lime, Pera sweet, Valencias - **Negative for HLB**



# Testing

## ▶ 2016

- ▶ Valencias, Parson brown, Ortanique, Pineapple sweet, Star ruby, Bearrs Lime, Tangerine, Navels, Clementine - **Negative for Psorosis, Infectious variegation, CTV, Tatterleaf.**

## ▶ 2017

- ▶ Valencias, Parson brown, Ortanique, Pineapple sweet, Star ruby, Bearrs Lime, Tangerine, Navels, Clementine, Oroblonco and STG plants - **Negative for Concave Gum, Infectious Variegation, and Psorosis**

# Testing

- ▶ 2017 cont'd
  - ▶ Bearrs lime, West Indian lime, Tangelos, Villa Franca, Navels, Valencias, Cara cara, Parson Brown, Ortanique **Negative for HLB**
- ▶ 2018 - 2019
  - ▶ No bio-indexing done as no certified seed available
  - ▶ Power outage resulted in kits and DNA reagents stored under cool conditions rendered unusable.

# Shoot-Tip Grafting (STG)

- ▶ 7 Varieties underwent STG.
- ▶ None showed signs or symptoms of HLB
- ▶ 1 Mexican lime showed CTV symptoms, while others tested positive for other GTD.
- ▶ After testing, 2 were determined free of GTD:
  - ▶ Jamaican Tangelo
  - ▶ Sweet seeded grapefruit
- ▶ Future plans
  - ▶ Shoot tip grafting of 2 varieties.
    - ▶ Sweet lime
    - ▶ Oneca

# Testing - Plan Expansion for 2020

Disease/Pathogen	Type of Test		
	Bio-indexing	Serology	PCR
<i>Citrus tristeza virus</i>	X	X	X
Citrus greening			X
Cachexia	X		X
Exocortis	X		
Concave gum	X		
<i>Dweet mottle virus</i>	X		
Infectious variegation	X		X
Psorosis	X		X
Tatterleaf	X		X
Citrus canker			X
<i>Citrus leprosis virus</i>			X

# Budwood Production

Year	No. of trees	Age of trees (years)	# budeyes sold*
2014	637 (19)	1.4	7,885
2015	796 (20)	2.5	35,742
2016	800 (22)	3.5	26,253
2017	850 (23)	4.6	22,859
2018	850 (23)	5.5	27,075
2019			

\*Budeyes sold does not reflect total budeyes harvested each year

# Improvements to Infrastructure

- ▶ Repair to the Germplasm collection house
- ▶ Construction of a new bud wood facility (screen house) at the Bodles Research Station, MoAF
- ▶ Both houses targeting up to 60,000 budeyes/year







Citrus Budwood  
(FAO Project): 3000 sq.  
ft. capacity for 900  
plants

New Citrus Budwood  
Facility built under the  
Rehabilitation of research  
Centre Project (2020):  
2000 sq. ft Capacity for  
500-600 plants



# Government support for operations of the Jamaica Citrus Protection Agency (JCPA)

- ▶ New cultivars were imported to Jamaica
- ▶ Currently 54 cultivars are available for the industry needs at the Post Entry Quarantine Facility, Bodles.
- ▶ Clean seed programme - monitoring and certification of citrus nurseries



# JCPA SUPPORT TO CITRUS INDUSTRY

- ▶ **Lead: Jamaica Citrus Protection Agency (JCPA):**
  - ▶ Under the Citrus Plant Regulation 1999,
  - ▶ Two (2) staff members of the JCPA are currently operating within the Plant Quarantine Produce Inspection (PQPI), MoAF, and carry out legislative functions.
  - ▶ Certification and Monitoring of citrus nurseries - A total of five (5) certified nurseries, with capacity of 96,000 seedlings (sufficient for planting 484 acres/annum).

# AIMS in Citrus Fields

- ▶ Farmers who adapted vector management strategies remain in production. Prices are attractive and farmers encouraged to manage pest complex.
- ▶ One large commercial farm still in production of fresh fruits
- ▶ Some citrus fields on marginal lands were removed
- ▶ Ongoing AIMS programme implemented

# RADA's Support for the Citrus Industry

- ▶ Surveillance: Provided on the ground by RADA as part of their ongoing programmes
- ▶ Extension Support from RADA:
  - Farmer registration (Agricultural Business Information System [www.abisjamaica.gov.jm](http://www.abisjamaica.gov.jm)). *8,957 farmers with citrus are registered with ABIS*
  - *Pest surveillance (including citrus pests)*
  - *Plant Doctor Services through Plant Wise*
  - *Technical information support*
- ▶ Jamaica Citrus Council - (Technical and coordinating role) with *representation from the GOJ (Research, Plant Quarantine, Extension), Growers, Input Supplier, Commercial Farm*

# PLANTWISE PLANT DOCTOR

## CABI Support for Recognition of Huanglongbing (HLB) – Citrus Greening

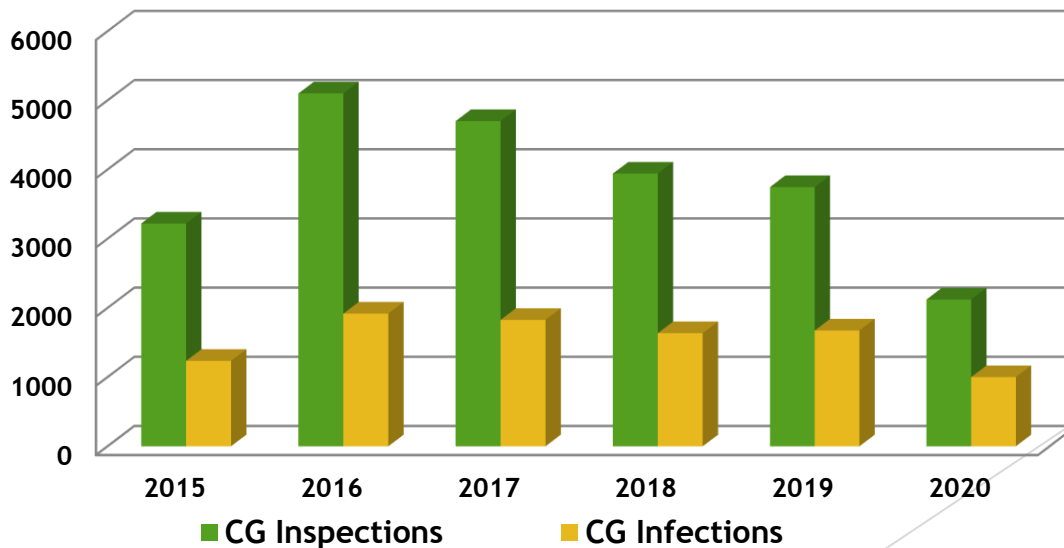
- ▶ A pair of eyeglasses with lenses coated with a special filter is the newest invention to detect the symptoms of huanglongbing (HLB),
- ▶ Invention developed by EMBRAPA Instrumentation and the Federal University of São Carlos (UFSCar), Brazil
- ▶ The novelty allows the user to see the main trace of the disease, known as leaf mottling or yellowing, as it intensifies the contrast between the green and yellow colors, characteristics of the pest



# Pest Surveillance - Citrus Greening 2015-2020

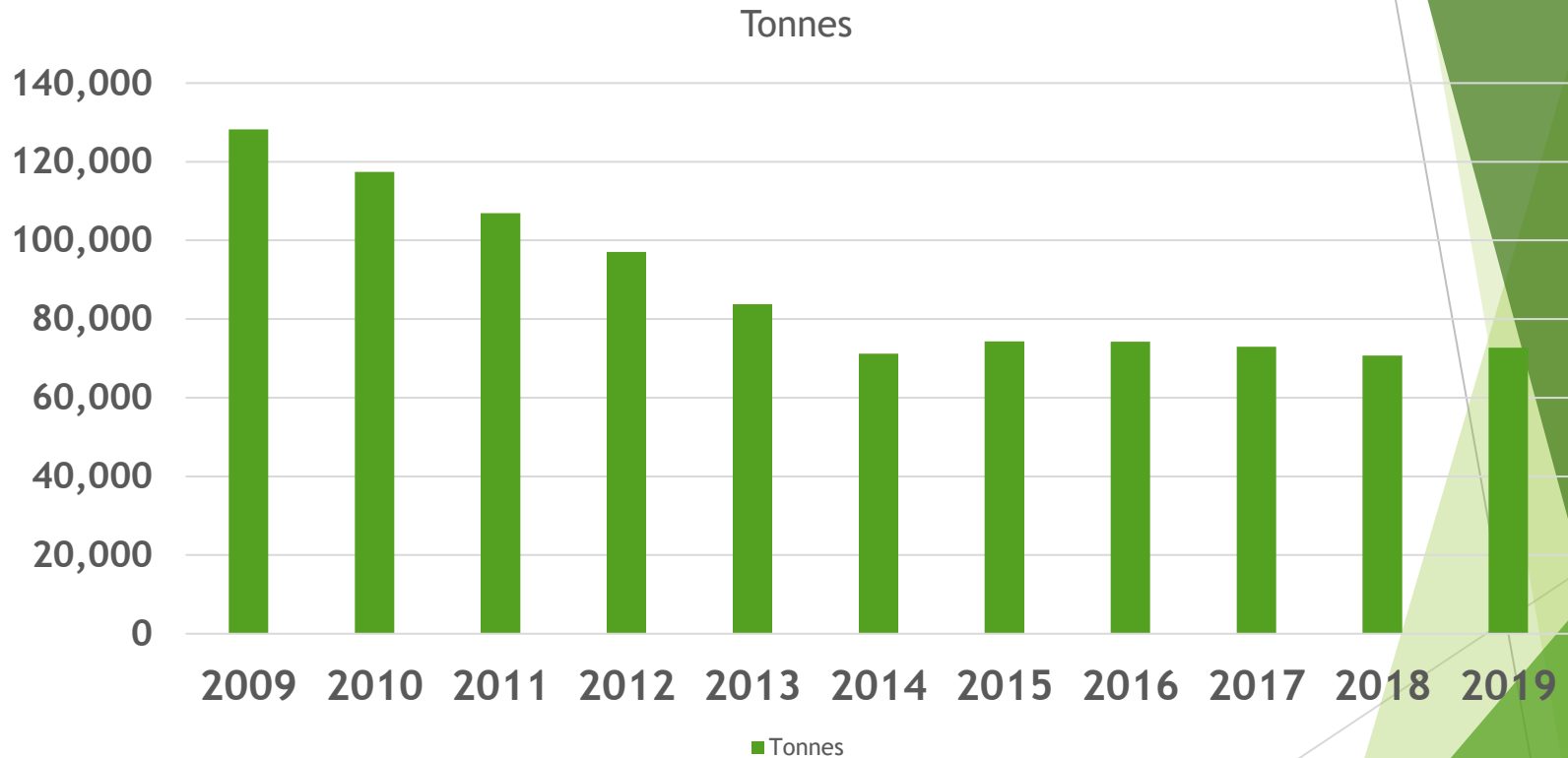
Year	CG Inspections	CG Infections	Infection Percentage
2015	3220	1235	38
2016	5101	1918	38
2017	4701	1827	39
2018	3942	1635	41
2019	3747	1674	45
2020	2121	1000	47
<b>Total</b>	<b>22832</b>	<b>9289</b>	<b>41</b>

Citrus Greening Surveillance Data 2015-2020



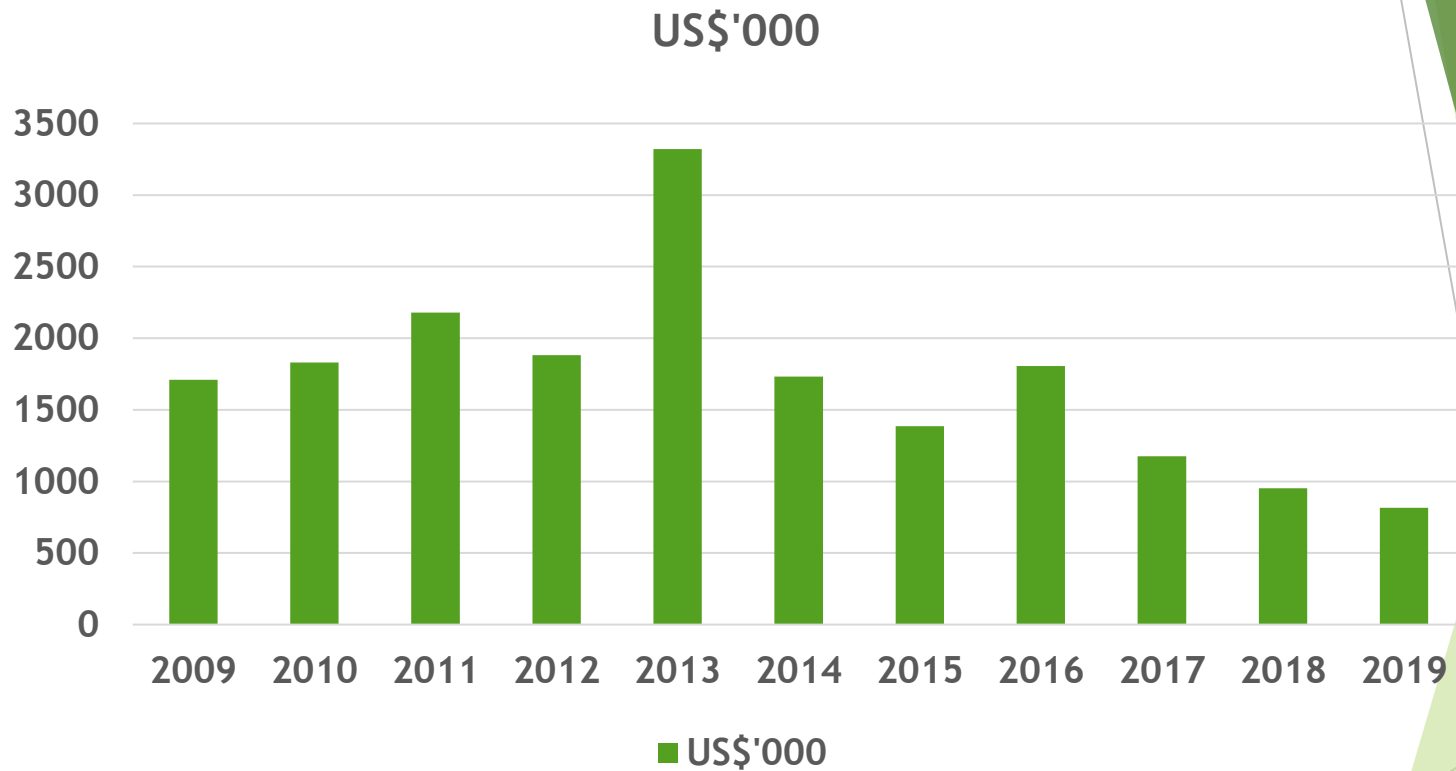
Source: RADA EASMS

# Production 2009 - 2019 (tonnes)





# Value of Export 2009 to 2019



# Assistance for the Expansion of Acreages for Lime & Lemon

- ▶ Prevention of citrus fruit Importation and responding to the needs of hotel/ restaurant sector:
- ▶ 2020/2021 Production Initiative Programme - JMD 6M (USD 42,000.00) for planting 9.0 Ha
- ▶ Focus on management of citrus greening & establishments of demonstration plot for best practices



# Lemon/Lime Project (RADA/PQ/R&DD)

- ▶ Plants budded since new BWF in operation (Aug 2020)
  - ▶ 241 plants currently in house and includes:
    - ▶ 44 limes (3 var. - Bearrs, Villafranca and West Indian)
    - ▶ 29 lemons accessions (3 var. - Lisbon, Eureka, Improved Myers)
- ▶ Procuring production and PCR testing inputs
- ▶ Importing rootstock seeds for sowing

# Infrastructure Improvement (greenhouses)

- **CIRAD Project Collaboration-**
  - Several citrus polyploid and tetraploid cultivars are currently collected for conducting a research work on citrus greening disease under local conditions.
  - A total of three rootstock is to be assessed. The Ortanique will be used for assessments as susceptible to greening disease cultivar, while Valencia and Parson Brown will be used as tolerant varieties.

# TECHNICAL PUBLICATIONS

- ▶ **Field Identification Guide for Citrus Greening:**

[http://micaf.gov.jm/sites/default/files/pdfs/Field%20Guide-manual\\_Citrus%20Greening.pdf](http://micaf.gov.jm/sites/default/files/pdfs/Field%20Guide-manual_Citrus%20Greening.pdf)

- ▶ **Training Manual for Citrus Greening:**

[http://micaf.gov.jm/sites/default/files/pdfs/Training%20Manual\\_Citrus%20Greening.pdf](http://micaf.gov.jm/sites/default/files/pdfs/Training%20Manual_Citrus%20Greening.pdf)

- ▶ **Pest & Diseases Management:**

<http://micaf.gov.jm/sites/default/files/pdfs/citrus%20greening.pdf>

- ▶ **Educational video on Citrus Greening Disease**

<https://www.youtube.com/watch?v=PeA2mh2GzUw>

- ▶ **Citrus Nursery Tree Production and Disease Exclusion**

# Future Plans

- ▶ **Biological Control**
  - ▶ Resuscitate the Biological Control Programme to include other pathogens
  - ▶ New biological control facility built under the Rehabilitation of Research Centres Project
- ▶ Expanding testing capabilities at PEQ
- ▶ Industry Expansion of lime/lemons

# ACKNOWLEDGEMENTS

- ▶ **FAO team and consultants**
- ▶ **Technical Directorate of the Ministry of Agriculture Jamaica (Production incentive programme)**
- ▶ **Research and Development Division (PRD, PEQ, Montpellier)**
- ▶ **Plant Quarantine and Produce Inspection (PQ/PI)**
- ▶ **Rural Agriculture and Development Authority (RADA)**
- ▶ **CABI**
- ▶ **Citrus Farmers**

**Thank you**

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the frame, creating a modern, layered effect against the white background.