

The Mite Identification Workshop

August 27th – 31st 2012

St George's University, Grenada.

Background

The Mite Identification Workshop was held at the Windward Islands Research and Education Foundation (WINDREF) Building at the St George's University, Grenada from August 27th – 31st 2012. This workshop was a collaborative effort between The United States Department of Agriculture, Animal and Plant Health Inspection Services- International Services (USDA-APHIS – IS) and the Greater Caribbean Safeguarding Initiative (GCSI), the Ministry of Agriculture and Fisheries, Jamaica, The St. George's University, the Windward Islands Research and Education Foundation (WINDREF) and the Ministry of Agriculture in Grenada. Ten (10) participants attended from over seven (7) countries in the Caribbean (*see appendix 1 for the workshop contact sheet*).

USDA APHIS GCSI provided significant technical input to this workshop and contributed ninety five percent (95%) of the funding for this activity.

Objective:

The general objective: of the Mite Identification Workshop was to inform participants on the science and technical knowledge needed to correctly identify Mite Pests in the Caribbean Region of Quarantine Importance.

The specific objectives were:

1. Familiarize participants with characteristics of the major mite species present in the neotropics,

2. To enable participants to survey, collect, preserve and conduct preliminary identification if a species of economic importance is trapped
3. To convey to participants current survey protocols and suppression techniques and,
4. To train participants in the concepts of field identification

During the training, participants learnt the diagnostic characteristics of exotic Mites as well as those of economic importance, the structure and function of Acari. Trainees also learnt methods of collecting and slide making survey techniques.

Opening:

An informal opening ceremony lead by Mr. Paul Graham, Pest Management Officer, Ministry of Agriculture, Forestry and Fisheries, Grenada, was held on the morning of the first day of the workshop. Mr. Graham began the proceedings by thanking WINDREF for facilitating the workshop at their centre and welcoming the participants to Grenada. He thanked the USDA APHIS IS office for yet again recognizing and providing the most needed training to the Plant Quarantine and Plant Protection Officers. He welcomed Mrs. Juliet Goldsmith, regional mite expert and wished the workshop all the success.

To end the short opening, Mr. Lionel Wayne De Chi, Agricultural Scientist, USDA APHIS in his contribution indicated that this was the 5th in a series of identification workshops being conducted by the collaborators, to assist the Caribbean Region to effectively identify pest of economic importance. He encouraged participants to take the training very seriously , given the amount of financial and human resources that went into the planning of the workshop and also that they were ultimately responsible at the end of the workshop, for the completion of a short survey on a mite pest of economic importance.

He went on to introduce the workshop facilitator, Mrs. Juliet Goldsmith, Pest Risk Analyst, Plant Quarantine Branch, Ministry of Agriculture and Fisheries, Jamaica. Mrs. Goldsmith is now considered to be the region's experts on mites having benefited for the USDA FAS sponsored scientific exchange programme on 2011.

At the end of the opening ceremony the workshop was declared open and participants were asked to introduce themselves and give a brief description of the background and experience

The Workshop Proceedings:

The Workshop syllabus was divided into (3) three major contact points over the five (5) days, these included;

1. Lectures / Classroom Exercises
2. Lab Exercises
3. Field Exercises

DAY ONE (1)

Lecture / Classroom Exercise:

Mrs. Goldsmith began the 1st session by making a presentation on an “*Introduction to Acari*”. The aim of this presentation was to expose the participants to:

1. The classification of the mites
2. How Acari differs from insects
3. Difference amongst mites, spiders and insects
4. The Habitat of mites
5. What mites do
6. The morphology, biology and structure of mites



Mite ID Participants at WINDREF for Lecture Session



Mrs. Goldsmith leading the class through Mite Morphology

Lab Activity:

The rest of day one (1) was spent in the lab, where participants using prepared slides bought by Mrs. Goldsmith, began identifying the various structures of the mites under close magnification, guided by the lecture notes from the mornings session.



Barbados Participant using Lecture Notes to identify Mite structures

DAY TWO (2)

Lecture / Classroom Exercise:

On the second day Mrs. Goldsmith continued Part 2 of her lecture on Acari. This lecture focused on the main groups of Agricultural Mites (Plant Pest, Bio – control agents and others). She delved deeper into Plant Feeding Mites showing the host plants and the damage the mites do.

Her presentation focused on;

- Tetranychidae (Spider Mites)
- Tetranychoida (flat mites)
- Tarsonemidae
- And Predatory Mites such as phytoseiids, bdellidae, thydeidae, cheyletidae, xenocaligonellidae, and cunaxidae.

Lab Activity:

The second half of day two (2) was spent in the lab where participants worked individually or in groups at times to identify the superorders and orders of the Acari.



Participants in pairs working on Acari Identification

DAY THREE (3)**Field Exercise**

The third day began with a field trip to the CARDI Field Station, Wester Hall, St David Parish, Grenada for a collection exercise.

The necessary equipment for the collection exercise (zip loc bags, magnification lens etc) were handed out to the participants.

Lecture / Classroom Exercise:

The 1st half of the day was dedicated to field collection, however for the remaining of the day the group returned to the class for a presentation on Exotic Mite Pest and to view an online video on practical sample preparation – washing of plant material collected.



Participants at the CARDI Field Station for Field Collection



Participants collecting samples at the CARDI Field Station

Lab Activity:

Day 3 ended late with participants working in the lab to correctly and effectively wash all their collected plant material / samples and then laboriously extract the mites from the slurry. The collected mites were set aside for identification on Day 4.

DAY FOUR (4)

Lab Activity:

The majority of day four was spent in the lab where participants began the process of identifying the mites samples collected from the field exercise on Day 3, down to the family order.

Mrs. Goldsmith provided the class with a number of keys and illustrations (both electronic and physical copies) to assist the participants to properly “key out” the samples.

Lecture / Classroom Exercise:

Day four ended with a power point presentation by Mrs. Goldsmith on Integrated Mite Management.

DAY FIVE (5)

On the final day of identification workshop the participants welcomed a special presentation given by the Ministry of Agriculture, Après Division, Grenada on Verroa destructor (Grenada Perspective). This was followed by Mrs. Goldsmith final presentation, to complement the days' theme – on Exotic Mite Pest.

At the end of the presentations a brief workshop evaluation was done with the facilitator, participants and key organizer – USDA APHIS IS. It was concluded that the workshop was a success and that participants were eager to continue learning about mite pest and to able to identify these pest down to the genus and species level. As a result, the USDA AHPIS has committed to continuing the training in 2013 for the same group of participants.

A brief closing ceremony and the handing out of certificates to all participants brought the Mite Identification Workshop to a close.



Participant receiving certificate of Participation



Group Photo at the close of the Mite ID Workshop