THE REGIONAL IDENTIFCATION WORKSHOP ON

THYSANOPTERAN PEST OF ECONOMIC IMPORTANCE

H. LAVITY STOUTT COMMUNITY COLLEGE,

BRITISH VIRGIN ISLANDS

OCT 1ST -5TH 2012

Background

The Regional Workshop on the identification of Thysanopteran Pest was held at the H. Lavity Stoutt Community College, Paraquita Bay, British Virgin Islands from October 1st – 5th 2012. This workshop was a collaborative effort between United States Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS IS), the Florida Association for Volunteer Action in the Caribbean and the Americas (FAVACA), and the Department of Agriculture, BVI. Over Twenty (20) participants were trained from over seventeen (17) 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 percent (90%) of the funding for this activity.

Objective:

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

The specific objectives were:

The objectives of this Workshop are to:

1. Familiarize participants with characters of the major thysanoptera genera (and 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

Opening Ceremony:

A brief opening ceremony was held on the first day of the workshop.

Attending and giving opening remarks, were Mr. Bevin Braithwaite, Chief Agricultural Officer, Mr. Ronald Smith Berkely, Permanent Secretary in the Ministry of Natural Resources and Labour and Mr. Lionel Wayne De Chi, Agricultural Scientist, United States Department of Agriculture Animal and Plant Health Services.

The Chief Agricultural Officer, Mr. Bevin Braithwaite in his remarks at the opening ceremony stated, that the production of fresh fruits and vegetables is very important to the agricultural sector of the Virgin Islands. Thrips (thysanopteran pest) play a pivotal role in the destruction of many crops including hot peppers, and other vegetable crops and it is seen throughout the Territory. He stresses that training seminars such as these will enhance the knowledge and skills of officers in crop protection and tanked the USDA APHIS for their commitment to this task.

Agricultural Scientist of the USDA, Trinidad and Tobago, Mr. Lionel Wayne De Chi also encouraged the participants to take advantage of this week's activities and training. He asked the participants to take what they will learn at the Workshop and pass it on to their colleagues upon their return, stating that this is not only technical and entomological but it has trade implications to the region.

Permanent Secretary of the Ministry of Natural Resources and Labour, Mr. Ronald Smith-Berkely, in his feature address highlighted that there are over 500 species and while some are considered destructive, feeding on developing flowers or vegetables causing discoloration and deformation some are beneficial as they feed on mites, other insects and spores. Thrips are among the fastest growing group of invasive species in the world the Ministry and the Department, are proud to promote this training towards safeguarding our borders. With this said the Permanent Secretary declared the workshop open.

The Workshop Proceedings:

The workshop was facilitated by Mr. Thomas Skarlinsky, Entomology Identifier, United States Department of Agriculture Animal and Plant Health Services (USDA APHIS) and Dr. Joseph Funderburk, Professor of Entomology, University of Florida. Both Mr. Skarlinsky and Dr. Funderburk were sourced and funded by GCSI.

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

On Day One, Mr. Skarlinsky guided the class through several Power Point Presentations to familiarize the participants on:

- What are Thrips – Classification
- Where are Thrips found -Habitat
- Important Reference materials
- Thysanoptrera collection

Day Two

The 1st half of day two (2) was dedicated to Slip Preparation, led by Mr. Skarlinsky, both via a Presentation and Practical Demonstration.

In the afternoon, the Participants were introduced and informed about “Thrips intercepted in the U.S Quarantine”.

Day Three

The morning of day three began with a presentation on Adult Thrips Morphology (Terebrantia and Phlaeothripdae).

The group continued to learn about Diagnostics tools, such as the Lucid keys. The participants were provided with electronic copies of over 10 different lucid keys and various illustrations for this exercise.

The last half of day three was spent out in the field, where participants, in groups of 3 – 4 went out into the field equip with vials, paint brushes and trays to collect thrip samples.

Day Four

Day four was spent in the lab, where participants embarked on the task of preparing their samples collected the previous day (slide preparation) for identification.

Using lecture notes, lucid keys and illustrations provided, participants began to key out their samples for identification.

Day four (4) ended with Dr. Funderburk, presenting to the class a simple reconnaissance survey protocol, developed by himself, Mr. Skarlinsky and Mr. De Chi, which participants will utilize upon their return home to conduct a survey for *Scirtothrips dorsalis*, *Frankliniella occidentalis* and *Thrips palmi. (See Attachement 2)*

Day Five

On the last day participants received their final lecture for Dr. Funderburk, on Quarantine Procedures for Thrips. At the end of the presentations a brief workshop evaluation was done with the facilitator, participants and key organizer – USDA APHIS IS.

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

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ATTACHMENT 1

Contact Sheet for the Thysanopteran Regional Identification Training

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ATTACHMENT 2:

Reconnaissance Survey

Scirtothrips dorsalis, *Frankliniella occidentalis*, *Thrips palmi*

Introduction

Common names: *F. occidentalis* (western flower thrips, California thrips); *S. dorsalis* (chili thrips and numerous others); *T. palmi* (melon thrips, palm thrips)

Hosts: All are polyphagous and feed and reproduce on many different crops and wild hosts; however, each has distinct plant species preferences. *Capsicum* species are good hosts for all three species.

General Information: *Frankliniella occidentalis* and *Scirtothrips dorsalis* damage numerous fruit, vegetable, agronomic, and ornamental crops. *F. occidentalis* is now nearly cosmopolitan. It typically aggregates in the flowers where they feed and lay eggs on flowers and small fruits. The larva may continue to feed on developing fruits. Feeding injury includes flecking on fruits and oviposition results in dimpling of fruits. Injury to leaves usually is less severe. *F. occidentalis* is a key vector of Tomato spotted wilt virus and other tospoviruses. These cause serious systemic disease to a wide array of plant hosts that display a range of symptoms. *S. dorsalis* is more aggregated in the new growth where they feed and lay eggs causing a silvery injury to leaves, leaf deformity, and defoliation. *T. palmi* aggregates in flowers and the undersides of leaves.

For information on sampling, slide preparation, and identification:

http://keys.lucidcentral.org/keys/v3/thrips_of_california/Thrips_of_California.html

For information on injury, sampling, and management in fruiting vegetables refer to:

http://edis.ifas.ufl.edu/in401

http://edis.ifas.ufl.edu/in895

Survey Methods:

Target Crops: *Capsicum (i.e. pepper)* for all thrips species and beans and melons can be sampled for *F. occidentalis* and *T. palmi*

Target Areas: Vegetable farms

Apparatus: White beat trays, ziplock bags, small paint brushes, alcohol, petri dishes, forcips, medicine droppers, slides and cover slips, mounting media

Procedures

1) **Sample sites:** 4 production fields (include commercial and small farms field and greenhouse)
2) **Sample locations:** 4 random locations within each field
3) **Methods:**
    a. Examination for injury– flowers, fruits, buds, leaves
    b. At each location within each field place buds (new growth) from one plant in ziplock bags in alcohol and place 10 flowers in a vial of alcohol
    c. Label each sample and return to the laboratory; extract and count the thrips under a stereoscope using a petri dish
    d. Place representatives of each species on microscope slides when possible
    e. Preserve a quantity of each species in small vials for voucher material
    f. Provide proper voucher collecting information (coordinates, elevation, plant, other).

Results:

Identification: compare field specimen with reference notes from the workshop and other reliable sources (internet, local experts, and regional colleagues).

Identify the thrips if you have proper equipment. Send voucher specimens to taxonomist for positive identification (USDA/APHIS, Tom Skarlinsky (Thomas.L.Skarlinsky@aphis.usda.gov) (Courrier Address, DHL, FEDEX, UPS: 6302 NW 36th Street, Maimi, FL 33122 USAphone 305.492.1856); University of Florida, Joe Funderburk (jef@ufl.edu) (University of Florida, 155 Research Road, Quincy, FL 32351 USA; phone 850.875.7146)

Prepare Report

A written report should be submitted to Wayne De Chi and should include:

1. A brief background of Pest
2. A brief description of the commodity, including the economic importance to the country
3. Methodology
    a. Field
    b. Collection
    c. Lab
4. Collector's Name
5. Date collected
6. Location collected (include GPS units)