

# Research Summary Updates for Chilli Thrips, *Scirtothrips dorsalis* Hood



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# Overview of Research Topics

- Spatial Distribution
- Sampling for Population Density
- Pesticide Trials



# Spatial Distribution Experiment



D. R. Seal



# Damaged calyx due to *S. dorsalis*



# **SPATIAL DISTRIBUTION OF *S. dorsalis* IN PEPPER FIELDS**

- **Distribution of larvae and adults on terminal leaves and fruits were aggregated (patchy distribution).**
- **The patchy distribution of this thrips may allow for spot treatments of pesticides to be considered.**

# How Many Samples are Needed to Estimate Chilli Thrips Population Density?

- Biweekly scouting in high-risk risk areas can provide useful information about population density.
- In a 16 x 16 ft area
  - If the mean number of adults and larvae is ca. 0.5 per sample, then collect 6 samples.
  - If the mean number of adults and larvae is ca. 1 per sample, then collect 2 samples.



# CONTROL OF *S. dorsalis*

First Study, St. Vincent, Oct. 18 – 28, 2004

- Treatments were applied using a backpack sprayer delivering 100 gpa at 30 psi



Treatments  
Spinosad  
Imidacloprid  
Chlorfenapyr  
Novaluron  
Avermectin  
Azadirachtin  
Control

# Pesticide Trials

<b>Treatments</b>	<b>Rate [oz.]/acre</b>
<b>Spinosad</b>	7.00
<b>Imidacloprid</b>	3.75
<b>Chlorfenapyr*</b>	10.00
<b>Novaluron</b>	10.00
<b>Avermectin</b>	10.00
<b>Azadirachtin</b>	7.00

All Pesticides indicated a reduced number of thrips compared to the control 24 hours post-treatment.

\*Note: Only labeled for greenhouse use in Florida.



# Pesticide Trials

## Treatments

Imidacloprid	Most Effective
Chlorfenapyr	Most Effective
Spinosad	Effective
Avermectin*	Effective after 2 <sup>nd</sup> Application
Novaluron*	Effective after 2 <sup>nd</sup> Application
Azadirachtin*	Effective after 2 <sup>nd</sup> Application

\*Note: Results from Second Experiment for Efficacy of Agrimek, Novaluron, and Neemix differed after 24 hours in second experiment.

# Pesticide Use

- Minimum of 2 applications with a 7-day interval are needed for effective control.
- Biweekly scouting post-treatment may be needed to avoid population buildup.

# Chilli Thrips Larval Mortality Laboratory Bioassay

<b>Insecticides</b>	<b>Rate/100gal (oz)</b>	<b>% mortality</b>
<b>Oxamyl</b>	<b>32.00</b>	<b>93</b>
<b>Indoxacarb</b>	<b>3.47</b>	<b>13</b>
<b>Acephate</b>	<b>12.00</b>	<b>87</b>
<b>Fenpropathrin</b>	<b>10.75</b>	<b>20</b>
<b>Control</b>	<b>0</b>	<b>13</b>



# Effective and Ineffective Insecticides for chilli thrips control

<b>EFFECTIVE</b>	<b>INEFFECTIVE</b>
<b>Oxamyl</b>	<b>Spiromesifen</b>
<b>Acephate</b>	<b>Cyfluthrin</b>
<b>Chlorfenapyr</b>	<b>Fenpropathrin</b>
<b>Spinosad</b>	<b>Indoxacarb</b>
<b>Imidacloprid</b>	<b>Neemix</b>
<b>Avermectin</b>	<b>Novaluron (weak)</b>

# Future Research

- Additional biological studies.
- Evaluation of biological agents.
- Additional pesticide trials.
- Improved trapping technology for surveillance.

# Disclaimer

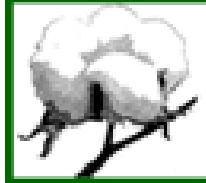
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