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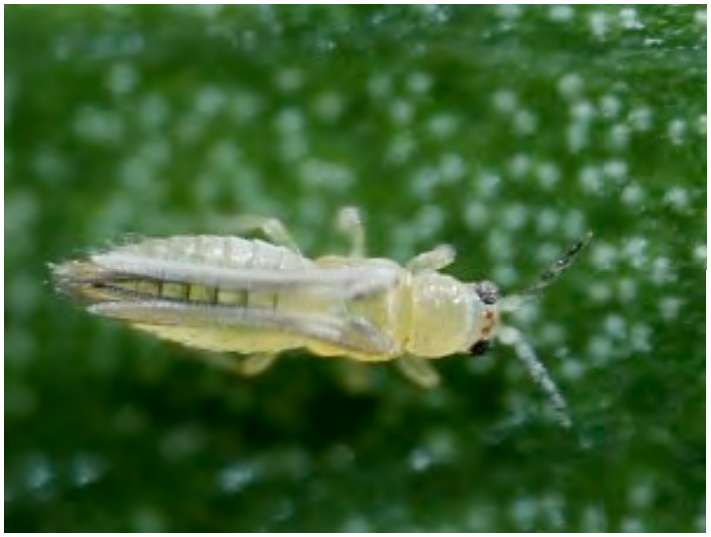
Professional Landscape Management Recommendations for Control of Chilli Thrips

Scott Ludwig, Lance Osborne, and Matt Ciomperlik

Origin and Distribution

Chilli thrips, *Scirtothrips dorsalis* (Hood), is an important pest of crops in tropical and subtropical regions. An established population of this pest was first detected in the United States on landscape plants in Florida in 2005. In November 2007, chilli thrips were identified in a residential landscape in Houston, TX. By the summer of 2008, chilli thrips had been identified throughout the Houston area.



Adult chilli thrips

*Extension Program Specialist - IPM, Texas AgriLife Extension Service, The Texas A&M University System; Professor of Entomology, University of Florida; and Entomologist, USDA-APHIS-PPQ, Center for Plant Health Science and Technology

Description

Chilli thrips are extremely small and difficult to distinguish from other thrips species without the aid of a good hand lens or compound microscope. Adults are pale with dark wings and less than 1 mm in length. Immature chilli thrips are also pale in color and resemble the immature stages of many other thrips species.

Chilli thrips damage on rose foliage

Description of Feeding Damage

Infestations by chilli thrips are usually first detected in the landscape by their distinctive feeding damage. Unlike flower thrips, which feed primarily on pollen, chilli thrips feed on various plant tissues. Feeding causes bronzing (tissues turning bronze in color) of leaves, buds, and fruit. Damaged leaves may curl upward and appear distorted. Infested plants become stunted or dwarfed and leaves may detach from the

stem at the petioles in some plant species. Feeding may also cause buds to become brittle and drop. Young leaves, buds and fruits are preferred, although all above-ground parts of host plants may be attacked.

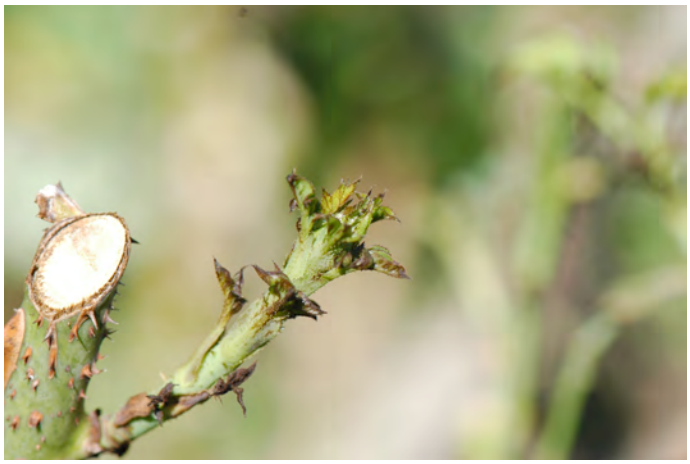
Host range

Chilli thrips have a very broad host range and may feed on many of the common plants found in Texas landscapes. All broadleafed plants should be considered potential hosts for this thrips (Table 1).

Chilli thrips damage on Indian hawthorn foliage

Plant Monitoring and Identification

Plants with the symptoms described above should be examined closely for the presence of thrips. Thrips collected from the leaves or buds of plants with suspected damage should be collected and properly identified. If you wish to participate in efforts to monitor the distribution of this pest in Texas, place samples of thrips or suspected thrips-infested plant parts into a Ziploc bag, add a dry piece of paper-towel or napkin to avoid excessive moisture, and seal the bag. Label the bag with collection information including locality (city or town and county), date, species of host plant, and your name and contact information. Send samples via express mail (next-day delivery) to assure good sample quality. Through the end of 2009 please send samples to: *Chilli Thrips Lab, Texas AgriLife Extension Service, P.O. Box 38, Overton, TX 75684*.



Chilli thrips damage on hybrid tea roses

Prevention

To prevent the introduction of chilli thrips into new landscapes it is important make sure that material is not infested prior to planting. New plants being planted could be infesting in a number of ways. The most common method would be to purchase infested plants. However, another overlooked method would be for infested plants removed from the landscape and brought back to a holding area to infest clean plants. When moving plants between properties make sure that they do not have chilli thrips. Infested plants can spread an infestation to holding areas and new landscapes into which they are planted.

Chilli thrips damage on cleyera

Chemical Control

There are a number of insecticides available to manage this pest (Table 2). It is important to remember that chilli thrips attack developing terminals and buds. The best time to treat a plant is while it is actively growing. Thrips generally leave damaged plants with stunted or severely slowed growth.

Treating the soil of infested plants has not been effective in most studies conducted to date. Systemic insecticides, therefore, should be applied as a foliar spray.

Pyrethroid insecticides, such as permethrin, cyfluthrin, esfenvalerate and bifenthrin, are not effective against chilli thrips and should not be used, since they are toxic to natural enemies.

Soft products, such as insecticidal soaps, appear to suppress chilli thrips populations. In order for theses products to be effective, they need to be applied on a regular basis. Thrip population have been shown to increase dramatically once applications have stopped.

To prevent insecticide resistance from developing, it is important to rotate insecticides between chemical classes with different modes of action. For example, a product containing spinosad (IRAC MOA Number 5) should be used the first time and then a product containing acephate (IRAC MOA Number 1B) should be used when a second application is made. All the products with an IRAC MOA Number 4A are related and applications should be alternated with either products containing acephate, abamectin or spinosad.

Biological Control

Predators such as the minute pirate bugs, predatory mites and even predatory thrips have shown potential to control chilli thrips in greenhouse studies. We are still evaluating these organisms to understand their use in the landscape.

Immature (top) and adult (bottom) *Franklinothrips vespiformis*, a predatory thrips know to feed of chilli thrips in Florida.

Acknowledgements

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Table 1. Plants in Florida on which chilli thrips has been found to reproduce.	
Arachis hypogaea	Peanut or Groundnut (greenhouse)
Begonia sp.	Begonia,
Capsicum annum	Pepper
Celosia argentea	Celosia
Coreopsis sp.	Tickseed
Cucumis sativus	Cucumber
Cuphea sp.	Waxweed, Tarweed
Duranta erecta	Golden Dewdrop
Eustoma grandiflorum	Florida Blue Lisianthus
Ficus elastica 'Burgundy'	Burgundy Rubber Tree
Fragaria x ananassa	Strawberry
Gerbera jamesonii	Gerber Daisy
Glandularia x hybrida	Verbena
Gossypium hirsutum	Cotton (greenhouse)
Hedera helix	English ivy
Impatiens walleriana	Impatiens
Lagerstroemia indica	Crape Myrtle
Ligustrum sp.	Ligustrum
Ocimum basilicum	Sweet Basil
Pelargonium x hortorum	Geranium
Pentas lanceolata	Pentas
Petunia x *hybrida*	Petunia
Pittosporum tobira	Variegated Pittosporum
Plectranthus scutellarioides	Coleus
Plumbago auriculata	Plumbago
Ricinus communis	Castor Bean
Rhaphiolepis umbellate	Yeddo Hawthorn
Richardia brasiliensis	Brazil Pusley (greenhouse)
Salvia farinacea	Victoria blue
Shefflera arbicola	Umbrella Tree
Tagetes patula	Marigold
Tradescatia zebrina	Wandering Jew
Vaccinium corymbosum	Highbush Blueberry
Viburnum odoratissimum var. *awabuki*	Sweet Viburnum
Viburnum suspensum	Viburnum
Viola x wittrockiana	Wittrock's violet
Vitis vinifera	Grapevine
Zinnia elegans	Zinnia

Table 2. Suggested insecticides for control of chilli thrips in the landscape.[1]			
IRAC[2] Mode of Action Class	Active Ingredient	Products	Application Method
1B	acephate	Orthene	Foliar
4A	acetamiprid	Tristar	Foliar
4A	clothianidin	Aloft[3]	Foliar
4A	dinotefuran	Safari	Foliar
4A	imidacloprid	Merit	Foliar
4A	thiamethoxam	Flagship	Foliar
5	spinosad	Conserve	Foliar
6	abamectin	Avid	Foliar

[1]Biorational products such as insect growth regulators, soaps and oils are currently being evaluated. Check the label for specific site uses.
[2] International Resistance Action Committee publishes updated mode of action classification charts. For the latest information, see http://www.irac-online.org/ .
[3]Pyrethroids such as cyfluthrin are toxic to natural enemies.

Note: Insecticides labeled for landscape plants should not generally be used on vegetables, unless specifically noted on the label. Failing to follow insecticides labels carefully is illegal and can result in unsafe applications. Always check the product label for the list of plants that may be injured by the pesticide.

Mention of commercial products is for educational purposes only and does not represent endorsement by Texas AgriLife Extension Service or The Texas A&M University System. Insecticide label registrations are subject to change, and changes may have occurred since this publication was written. The pesticide user is always responsible for applying products in accordance with label directions. **Always read and carefully follow the instructions on the container label.**

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