

Chilli Thrips

A New Pest in the Home Landscape

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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 roses in Florida in 2005. In November 2007, chilli thrips were identified on landscape roses in Houston. Chilli thrips have also been detected on a number of ornamental and vegetable plants in retail stores in Northeast and South Texas.

Host Plants. Chilli thrips have a very broad host range and may feed on more than 150 plant species in 40 plant families. Additional plant species may be added to the list as this pest continues to expand its geographical range. The list includes many commonly grown landscape plant species (Table 1) and many important food and fiber crops.

In Florida some of the most common plants attacked in the landscape are roses (Figure 1, 4-5), schefflera, Indian hawthorn (Figure 6), and pittosporum.

Life Cycle. The life cycle of chilli thrips is similar to that of other common thrips species, such as the western flower thrips. Egg to adult development is completed within 12 to 22 days, depending on temperature and host plant species. Females insert their eggs inside plant tissue on or near leaf veins, terminal plant parts and floral structures.



Figure 1. Chilli thrips damage on rose foliage. (Photo by S. Ludwig)

Eggs hatch in 6–8 days under optimal conditions, but may take longer at lower temperatures. Immature thrips pass through two larval stages (1st and 2nd instars). The first instar lasts for 2-4 days and the second instar is completed in 3-6 days. During this time larvae actively feed on tender young plant growth, consuming enough food to complete development to the adult stage.

Fully-grown larvae molt into a non-feeding, prepupal stage, which may last up to 24 hours, and then pupate on protected plant parts, leaf litter or in the soil near the base of the plant. The pupal stage lasts 2–3 days. In all, chilli thrips may complete their life cycle in 12 to 22 days and females generally deposit 60 to 200 eggs in their lifetime.

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Table 1. Some common landscape plants that are hosts for chilli thrips.

Asparagus	Dahlia	Japanese pieris	Rose
Azalea	Duranta	Ligustrum	Snapdragon
Banana	Edible fig	Lisianthus	Strawberry
Begonia	Euonymus	Maple	Sweet basil
Camellia	Firethorn	Mealy cup sage	Tabasco pepper
Castor bean	Geranium	Mexican heather	Tomato
Celosia	Gerbera daisy	Pentas	Verbena
Chrysanthemum	Grape	Petunia	Viburnum
Citrus	Impatiens	Pittosporum	Viola
Coleus	Indian hawthorn	Podocarpus	Zinnia
Coreopsis	Japanese holly	Porcelain berry	
Crape myrtle	Japanese photinia	Purple amaranth	

Description. Chilli thrips are extremely small and difficult to distinguish from other thrips species without the aid of a compound microscope. Adults are pale with dark wings and less than 2 mm in length (Figure 1). Immature chilli thrips are also pale in color and resemble the immatures of many other thrips species (Figure 2).



Figure 1. Adult chilli thrips (photo: L. Osborne, University of Florida).

Description of Feeding Damage

Infestations by chilli thrips are usually first detected in the landscape by the distinctive damage caused to the host plants (Figures 1, 3-5). Unlike flower thrips, that feed primarily on pollen, chilli thrips feed on various plant tissues. Feeding causes leaf,

bud, and fruit bronzing (tissues turn bronze in color). 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 their host plants may be attacked.



Figure 2. Second instar chilli thrips (photo: L. Osborne, University of Florida).

Plant Monitoring and Identification.

Plants with the symptoms described above should be examined closely for the presence of thrips. Samples of thrips from leaves or buds of symptomatic plants may need be collected and sent to a laboratory for species

determination. Place the sample into a Ziploc bag to prevent thrips escape, 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. Samples should be sent via express mail (next-day delivery) to assure good sample quality. If necessary, contact your county Extension agent for assistance in submitting your sample.



Figure 4. Chilli thrips damage on rose foliage. (Photo: Scott Ludwig)



Figure 5. Damage to a rose bud caused by chilli thrips feeding. (Photo: Scott Ludwig)



Figure 6. Chilli thrips damage on Indian hawthorn foliage. (Photo by S. Ludwig)

Management. Due to the recent introduction of chilli thrips into the U.S., pest management programs are still being developed. Preliminary tests suggest that foliar sprays with insecticides containing acephate, imidacloprid, or spinosad are effective for pest control on ornamental landscape plants (Table 2). The use of insecticides containing pyrethroids (such as bifenthrin, cyfluthrin and permethrin) is not recommended because they are not very effective against chilli thrips, and are more damaging to beneficial insects.

For the latest information on chilli thrips, including a complete list of known host plants, a current range map, and contact information for local specialists, go to <http://chillithrips.tamu.edu>.

Table 2. Suggested insecticides for control of chilli thrips on landscape plants.

Active Ingredient	Product Name	Company	Toxicity to Beneficial Insects
Acephate	Acephate-Systemic Turf, Tree & Ornamental Spray	Hi-Yield	High
	Ortho® Orthenex® Insect & Disease Control Concentrate	Ortho	High
	Ortho® Systemic Insect Killer Concentrate	Ortho	High
Imidacloprid	3-in-1 Insect, Disease, & Mite Control	Bayer Advanced	High*
	Rose & Flower Insect Killer	Bayer Advanced	High*
Spinosad	Borer, Bagworm, Leafminer & Tent Caterpillar Killer	Ferti-Lome	Low
	Bull's-eye™ Bioinsecticide	Gardens Alive	Low
	Lawn & Garden Spray Spinosad® Concentrate	Green Light	Low

*These Bayer Advanced insecticides also contain other insecticides (pyrethroids) that may be harmful to beneficial insects.

Note: Pesticides labeled for landscape plants should not generally be used on vegetables, unless specifically noted on the label. Failing to follow pesticide labels carefully is illegal and can result in unsafe applications. Under certain temperature, humidity, water and shade conditions, pesticides may cause injury to certain plants (phytotoxicity). Generally, apply pesticides during early morning to avoid dew or late afternoon to avoid the hottest part of the day. Water plants 1-2 days before applying a pesticide. 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 Cooperative Extension 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.**

For more information on Texas insects and Entomology, see <http://insects.tamu.edu>