



Chili pepper thrips (left) are small, about 0.5 to 1.2 mm long. Photo by J.P. Soshikbudoukaki Images. Healthy plumbago (middle (D.Caldwell photo). Chili thrips damage to plumbago (right) causes distorted, curled leaves and defoliation (H. Reynolds photo).

New Thrips Found on Plumbago: Could Mean Serious Losses for Ornamentals and Veggie-Fruit Industries: *Scirtothrips dorsalis*, AKA, chili, castor, berry, assam, strawberry and yellow tea thrips.

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Damage to ornamental shrubs by this pest was first brought to my attention by the alert staff at Work-A-Holics Landscaping Management in early March, 2006. They were concerned about some small insects that were “smoking” plumbago and Indian hawthorn and possibly some others. In my infinite entomological experience, I had never heard of such insects (not in the books) and kind of pooh-poohed the diagnosis. The only insects that feed on plumbago, that I was aware of, are aphids and a little slug-like caterpillar, the larva of the Cassius blue, which do little feeding and go unnoticed. A feature that sometimes confuses even the experts trying to diagnose declining plumbago hedges, is the whitish undersides of the leaves. This white material resembles a powdery mildew disease or a chemical spray deposit, it is neither. This white deposit is the natural exudate from “chalk” glands that are found on the plumbago species.



The underside of this plumbago leaf is splotched with residue from naturally occurring chalk glands (above). The Cassius blue butterfly larva (right) blends well in the tips of the plumbago stem. The give-away clue that it is there, are the dark frass droppings above it. Photos, D. Caldwell.

Anyway, I received more calls about declining plumbago and wrote it off as a common ailment, too much water, for this species that prefers to keep its toes on the dry side. One of the first plants to go into decline when there is too much watering, is the plumbago. Beware water splurgers! One of our Master Gardeners, Helga Reynolds, was puzzling over several opinions about the “burnt- looking” plumbagos and brought in fresh samples. Lo and behold there were thrips! But, which thrips? They all look alike to me! [Insect grammar lesson, thrips is one of those funny words, it is always looks plural, even if it is one thrips, the ‘s’ stays!] Specimens were over-nighted to DPI for the experts to look at. They were confirmed to be the dreaded chili thrips! One thing I’m learning about diagnosing plant problems in Florida is that one shouldn’t rule out any pest possibility with the constant arrival of new pests. Remember when we used to consider sagos (cycads) as low maintenance plants?! Not anymore, due to the white sago scale that has eliminated about 80% of our king and queen sagos!

Since chili thrips was first reported in Palm Beach County in the Fall of 2005, this new pest has been found in 16 counties from Gainesville (Alachua County) to Key West (Monroe County). It has been found in 62 retail nurseries and 1 wholesale nursery. Of the positive detections, 54 were from *Rosa* sp. (rose), 10 from *Capsicum* sp. (pepper) and 1 from *Illicium* sp. (anise).

Chili thrips is widespread throughout much of Asia and is present to a lesser extent in Africa, Eastern Europe, Japan, Oceania and the Hawaiian Islands. It is a pest on strawberries in Queensland, Australia; a pest on tea in Taiwan; a major pest of citrus in Japan and Taiwan, cotton in the Ivory Coast, soybeans in Indonesia and a serious pest of chilies and castor bean in India. It is a major pest of peanuts in several states in India. Severe infestations can result in total defoliation and potentially heavy crop loss. Damage to the following hosts has been reported in various world-wide literature sources: cashew, tea, chilies, cotton, tomato, mango, castor bean, tamarind, and grape.

Chili thrips has a wide-ranging appetite, with more than 100 recorded hosts from about 40 different families including the following: *Acacia* spp. (acacia); *Acer* sp. (maple); *Capsicum frutescens* (tabasco pepper); *Chrysanthemum x morifolium* (chrysanthemum); *Citrus aurantifolia*, *C. maxima*, *C. unshiu*, *Citrus* spp. (citrus); *Cuphea hyssopifolia* (Mexican heather); *Ficus carica* (edible fig); *Fragaria x ananassa* (strawberry); *Jasminum multiflorum* (star jasmine); *Lycopersicon esculentum* (tomato); *Mangifera indica* (mango); *Musa* sp. (banana); *Phaseolus vulgaris* (bean); *Pittosporum tobira* (pittosporum); *Podocarpus macrophyllus* (podocarpus); *Ricinus communis* (castor bean); *Rosa* sp. (rose); *Solanum melongena* (eggplant); *Tamarindus indica* (tamarind); *Viburnum odoratissimum* var. *Awabuki* (awabuki viburnum).

Recent additions include: ‘Easy Wave’ red petunia; coleus; ‘Graffiti’ white penta; geranium (*Pelargonium x hortorum*); Super Elfin white impatiens; the common weed, Brazil pusley (*Richardia brasiliensis*). Dr. Lance Osborne has reported death of Japanese privet (*Ligustrum japonicum*) hedges in the Opopka area due to this thrips.

What to look for: Deformed young leaves that give the impression of herbicide injury, leaves curl and shed, new growth has a thickened, plastic look, plant is stunted, buds become brittle and drop. Symptoms vary, Indian hawthorn leaves have a bronzy, scarred appearance (as does Brazil pusley). Feeding stains or scars occur on fruit. Malformed fruit and foliage should be closely examined for thrips. Look carefully before diagnosing, I encountered one variegated pittosporum hedge with severely stunted new growth. I only found one thrips, but many long-tailed mealybugs, so you have to always second-guess yourself in this business.

For pictures of damage, see:

<http://mrec.ifas.ufl.edu/Iso/images/Thrips/Chilli-Damage/Chilli%20Thrips.html> .

To determine if thrips are present, use the advanced technique referred to as the “tap test”. This involves tapping a suspect branch sharply with a pencil or similar object over a piece of paper and looking closely at what lands on the paper. Many thrips look alike, so, to be certain, specimens are best dealt with by taking them to your local horticulture extension agent or do what they, er, I did, and send them to DPI, the Department of Plant Industry, (see, <http://www.doacs.state.fl.us/pi/enpp/ento/chillithrips.html>) in a sealed baggie with the plant material preserved with rubbing alcohol to minimize spreading the thrips.

Adult chili thrips are very small, even in the small, small world of thrips, they are pale gray-white and only 0.5 – 1.2 mm long. It is difficult to recognize this thrips with the naked eye. They can go through a generation in a short period, about 14 – 20 days and there are possibly 18 generations in a year in south Florida. They tend to be more abundant during drier spells. The chili thrips female produces 60 to 200 eggs in her lifetime at the rate of 2-4 eggs per day. Males may not be necessary for this process! To make it even worse, this thrips has the potential to vector several plant virus diseases (inject viral pathogens with its rasping-sucking mouth parts).

What to do: Because there aren't naturally occurring predators or pathogens and this thrips has an intense reproduction effort, a systemic insecticide will provide the best protection. A foliar or soil application (per the label) of a product containing imidacloprid should provide the best results. For recommendation updates, see: <http://mrec.ifas.ufl.edu/LSO/thripslinks.htm> .

It looks like what was once a low maintenance plant species in our landscapes has now become high maintenance due to a new pest and because of it we will see fewer blue flowers in the our landscapes in the future.

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