

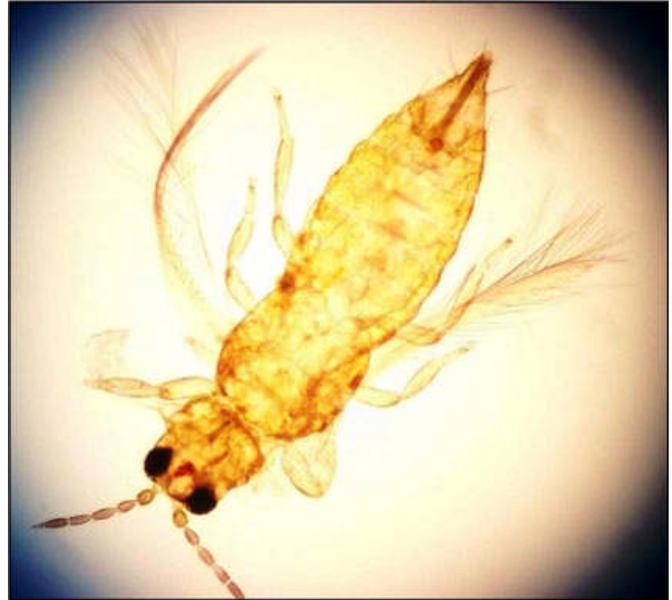
Chilli Thrips Heating Up Central Florida Roses

By Jim Small, ARS Consulting Rosarian

The Florida Department of Agriculture and Consumer Services lists October 7, 2005 as the official date of the discovery of chilli thrips (*Scirtothrips dorsalis* Hood) in Florida. Actually, damage was seen in West Palm Beach rose gardens prior to that time and I first reported it from Central Florida in my October, 2005, newsletter column. As the level of damage was so much greater than usually seen from known causes, an investigation was initiated by the proprietor of a West Palm Beach rose garden care service and small nursery operation. After some initial misidentifications, the pest causing this problem was finally identified by several prominent entomologists. Although many Orlando rosarians experienced chilli thrips infestations last fall, the real epidemic began this summer. Indeed, my own rose garden was recently devastated along with the gardens of many others. It seems like every few days I get calls or e-mails about this very serious pest. Since I now have a lot more experience with these critters, it seemed like a good time to write an article on what I now know about their biology and control.

Chilli thrips are natives of Southeast Asia but have been introduced into the Caribbean over the past few years. We don't know how they ultimately got to Florida but many individuals have suggested that they were introduced by all those hurricanes we have recently experienced. My own guess is that they arrived on imported plant products. Whatever the source, we have them with us abundantly. Chilli thrips are rather small (adults less than 0.05 inches long [0.5-1.2 mm]), cream colored insects that seem to prefer the new canes, leaves, and small buds over the flowers. Females lay 2-4 eggs per day (60-200 in lifetime), inserting them into the plant tissue. Eggs normally hatch in six to eight days and the insects then go through two larval stages lasting six to seven days. The pupal period lasts about two days and the adults live up to 20 days (average 11 days). You will see both the adults and larval forms on your roses. I took the photos included with this article of a chilli thrips adult and larval stage from a rose bud in my garden. I had recently sprayed with insecticide and found no thrips on the vegetation but they were still present in most stages within the buds.

I found the damage that these pests can do to be impressive. One of the first things I noticed was the leaves curling upward on new canes. Examining the canes themselves, I was amazed to find them badly mottled from, I assume, rasping by the insect's mouth parts. The buds themselves turned brown and failed to open. Pulling down one of the sepals, I found the chilli thrips pictured above. As the infestation progressed, I noticed the young tender vegetation arising



Adult stage, Chilli Thrips



Larval stage, Chilli Thrips



Chilli Thrips damage first appeared as leaves curling upwards on new canes

from the leaf axils to be particularly affected, turning bronze to black in color and shriveling up. Older leaves had dark streaking from the thrips damage. New leaves were stunted or dwarfed. On some canes leaves were shed. Two recently grafted roses had their new buds completed destroyed. Ultimately both rose bushes died. On mature plants, no new growth was unaffected. The rapidity that the damage spread throughout the garden was equally amazing. I remember remarking how good my roses looked this summer and, within a week, my garden was devastated. It is all pretty depressing.

Unfortunately, chilli thrips have a wide variety of hosts to attack. In addition to our roses, including the robust "knockout" roses, chilli thrips attack strawberries, citrus, peppers (hence the common name), asparagus, and many



New foliage is stunted and dwarfed



On mature plants, new growth is damaged by Chilli Thrips as they rapidly spread through the garden



Brown streaking on undersides of leaves are sure sign of Chilli Thrips (above)

Buds turn brown and fail to open (below)



other important agricultural and ornamental plants. Potentially, this pest will be damaging to a lot of Florida agriculture as well as the plants in our yards. Even if we control them on our roses, we will have to watch out for the introduction of new thrips populations from other landscape plants.

I must admit to you that I have not completely gotten my chilli thrips problem under control but believe I am making progress. My approach is to rotate several insecticides and spray at twice a week intervals until things improve. I am also removing all the damaged buds and canes from the

roses. Just doing that will remove many thrips and their eggs. Be sure to put them in a sealed plastic bag and have your refuse people haul them away. The prime pesticides that I recommend and find effective are spinosyn (Conserve SC) and imidacloprid (Merit and several other insecticides) but others will kill these critters as well. The University of Florida IFAS Extension service also lists insecticides containing Novaluron (Pedestal SC), Abamectin (Avid 0.15 EC), Cyfluthrin (Tempo), and Azadirachtin (Azatin) as effective. The main thing to remember is to spray frequently. Although I don't like to do so, I plan to include pesticide in my regular fungicidal spray at least as long as it is hot and dry and the thrips are doing their damage. As the pupa stage of the life cycle takes place in the soil, one might expect that a granular turf type pesticide would kill them there. Although nothing is listed for thrips among granular turf products, most will probably kill thrips in the soil. Since that stage is relatively brief, most of your control effort should be spent spraying the foliage. We still have a lot to learn about controlling this pest so time will tell how we modify our control methods.

Chilli thrips are tropical creatures so our climate regime suits them well. They particularly like hot dry weather. Chilli thrips are now well established in our area so we are going to have to find a way to live with them. The further north you go, the less well suited the climate will be to their survival. I would therefore expect them to survive in Florida, along the gulf coast, and into Texas but I imagine cold winters will prevent them from establishing populations much beyond southern Georgia. Cold weather can sometimes be a good thing. Maybe it is time for us to hope for a "good," hard freeze!

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Note: To view the above article in full color, visit the "Rose Information" section at www.CentralFloridaRoseSociety.com

All photos Jim Small and Elaine Pawlikowski