



St. Augustine Orchid Society

www.staugorchidsociety.org

Thrips on Orchids

by Sue Bottom, sbottom15@hotmail.com

I used to laugh when people talked about thrips, saying I don't get thrips. Well, ignorance is bliss. I simply couldn't see the thrips and didn't recognize the thrip damage. Thrips are tiny, slender, winged insects that are usually dark brown or black but can be yellowish white.



This badly damaged cattleya flower has at least eight thrips crawling on it causing the ugly stippling and browned edges on the flower.

Detection. If you suspect thrips, you can gently shake a flower over a piece of white paper. The thrip will be a very narrow dark speck about 1/8 inch long moving around on the paper. Some growers hang yellow sticky cards to monitor for flying insects, though I stopped using them after finding dead anoles trapped on the strips. Whether or not you can see the thrip, you can easily recognize the trail of carnage they leave behind.

Thrip Damage. Thrips are very small sucking insects that feed on the most tender parts of your orchids: flowers, flower buds, new leaves on thin leaved orchids, root tips, etc.



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Thrips destroyed the tip of the emerging inflorescence on this encyclia.

Thrip Damage on Flower Buds. Thrips feed on emerging flower buds and the infested buds may or may not open. Their piercing mouth parts sucked the juices from the flower so it was ruined long before it even opened.



This cynoches developed one normal inflorescence to the left, but the second one to the right was ruined by thrips

Bud Blast on Emerging Inflorescences. Thrips cause the buds developing on an inflorescence to blast when they break through the cell walls and suck the juices causing the flowers to abort.



Thrips feasted on these developing cattleya blooms ruining the flower long before it had a chance to open.



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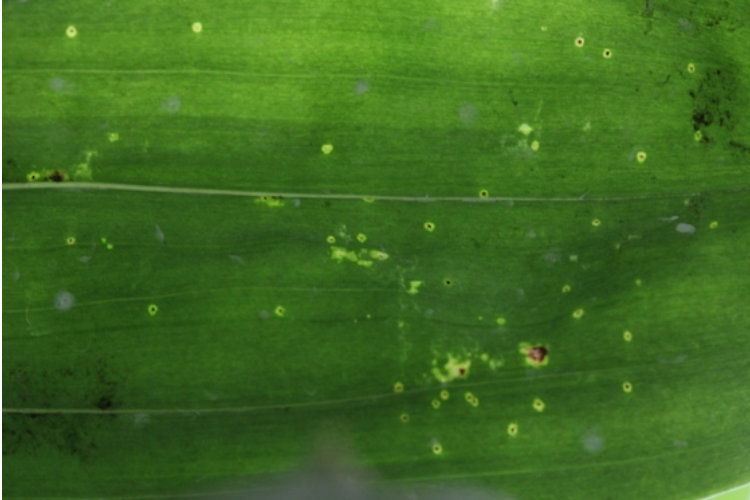
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Flowers may be deformed exhibiting stippling, browned edges and water soaked spots. Flowers may appear to have virus caused color break that is really caused by thrip damage.

Flower Damage. Flowers may be deformed exhibiting stippling, browned edges and water soaked spots. Flowers may appear to have virus caused color break that is really caused by thrip damage.



Leaf Damage. Some thrips feed on the undersides of leaves, particularly on thin leaved orchids like this catasetum. Leaves may appear pitted, stippled, silvery or bleached. The initial damage appears as a small chlorotic spot, but with time a bull's eye will appear inside the chlorotic spot indicating the location where thrip sucked the juices from the plant. Small brownish specks of excrement may be visible on the undersides of leaves.

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Root Damage. Thrips love tender new roots like these exposed vanda roots. Roots can be girdled from thrips feeding on the growing root tips.





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Control. Thrips are the most difficult to control of all the orchid pests. Both the larvae and adults are very active and feed on leaves and flowers. The mature larvae drop onto the bench, underbench or growing medium to pupate. The thrip life cycle (egg to adult) is primarily dependent on temperature. In warm greenhouses thrips may develop from egg to adult in 3 to 4 days in summer and 10 to 14 days in winter, and they can be active throughout the year.

Managing thrips is difficult because they are very small and easy to overlook; they are mobile, spend part of their life cycle in the soil; prefer to feed on flower parts, where systemic insecticides do not reach them; like to hide in flowers, flower buds, and leaf buds making them hard to spot and reach with pesticides; live on a wide variety of host plants; reproduce rapidly in warm greenhouses; may be present in multiple life cycles from egg to adult; hide in plant materials and are resistant to a number of insecticides. Most adult thrips are females that lay eggs into plant tissue, particularly flowers and leaves.

Commercial orchid growers have offered these suggestions:

- ★ *Identify Sources.* Identify the source of thrips in your landscape and spray the source plants to prevent the spread of thrips. Thrips are particularly attracted to gardenias, citrus, roses, vegetables and flowering plants.
- ★ *Spray Buds and Flowers.* Spray the emerging buds and flowers every three days using a hand pump sprayer and an insecticide that won't mar the flower (like Orthene (acephate), Conserve (spinosad) or Avid (abamectin)).
- ★ *Apply Lime Underbenches.* Spreading lime under benches to raise soil pH may make the soil environment inhospitable to thrips that are pupating in the ground.
- ★ *Rotate Insecticides.* Apply insecticides with different modes of action. Some rotate Avid (abamectin), Decathlon (Cyfluthrin) and Overture (pyridalyl), others spray with Conserve to kill thrips in the flowers and then an Imidacloprid product for more residual action. The [OHP Thrips Cocktail](#) contains more insecticide rotation guidelines.

The University of Florida, IFAS Extension has some good recommendations (Thrips Management Program for Ornamental Horticulture):

Sanitation. Remove weeds, old plant debris, and growing medium from within and around the greenhouse. Eliminate old stock plants as these are a source of thrips and viruses. Removing old flowers may reduce the number of adults and eggs. Place flowers into a sealed bag or container.



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Exclusion. Screen greenhouse openings such as vents and sidewalls with the appropriate screen size (<0.88 mm) to exclude adult thrips from entering the greenhouse. Airflow may be obstructed with the use of screening containing small pore sizes and as a result the screened surface area must be increased to compensate for this.

Chemical Control. No insecticide will provide complete control of thrips. It is important to detect and start management strategies before thrip populations have a chance to increase to moderate or high levels. During warm weather and when populations are high, application intervals of 3 to 5 days may be needed. Rotate chemical classes of insecticides with different modes of activity to reduce the chances of thrips developing resistance. Insecticides should be applied in rotations using one chemical for 2 or 3 applications (pyrethroids only once) and then switching to another class of insecticide with a different mode of activity. The frequency of application may depend on the season and degree of infestation. During winter and early spring, the life cycle is extended compared to spring and summer. This can influence the number of applications needed on a weekly basis.

The University of Florida IFAS Extension lists these homeowner chemical controls:

Table 1 Insecticides Labeled for Noncommercial (Homeowner) Use Against Thrips in Florida		
Active Ingredient	Trade Name	Chemical Class
Acephate	Orthene OrtheneX Garden Insect & Disease Control Ortho Systemic Insect Killer	Organophosphate
Bifenthrin	Ortho Bug-B-Gon Max Lawn & Garden Insect Killer	Pyrethroid
Carbaryl	Sevin	Carbamate
Cyfluthrin	Bayer Advanced Lawn Complete	Pyrethroid
Imidacloprid	Bayer Advanced Rose & Flower Insect Killer Bayer Advanced Tree & Shrub Control	Neonicotinoid
Lambda-cyhalothrin	Spectracide Triazicide Once & Done Insect Killer	Pyrethroid
Malathion	Green Light Malathion Ortho Malathion Plus Insect Spray	Organophosphate
Permethrin	Bionide Eight Liquid Hi-Yield Indoor/Outdoor Broad Use Insecticide Ortho Bug-B-Gone Max Garden Insect Dust	Pyrethroid
Potassium Salts of Fatty Acids	Safer Insecticidal Soap	Biorational
Pyrethrins	Bonide Yard & Garden Insect Killer Spectracide Bug Stop Insect Killer Spectracide Rose & Flower Insect Spray	Botanical
Spinosad	Bulls-Eye Bioinsecticide	Microbial
Source: Thrips on Ornamental Plants (ENY-333) Eileen A. Buss, UF, IFAS Extension		



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The MidFlorida Research and Education Center of the University of Florida IFAS Extension has put together a Thrips Management Program for Ornamental Horticulture identifying the efficacy of foliar applied insecticides:

Table 2 Potential Insecticides for Use Against Thrips			
Foliar Applied Insecticide (active ingredient)	IRAC Class	Knock Down	Residual Control (days)
Acephate 97 UP and generics (acephate)	1B	fast	7
Aria (flonicamid)	9c	medium	7 – 14
Avid EC (abamectin)	6	fast	contact
Azatin XL, Ornazin, etc. (azadirachtin)	18B	slow	7
BotaniGard (Beauveria bassiana)	M	medium	3
Conserve SC (spinosad)	5	fast	5
Flagship 25 WG (thiamethoxam)	4A	fast	?
Hachi-Hachi EC (tolfenpyrad)	21A	fast	7 – 14
Mesurool 75 WP (methiocarb)	1A	fast	contact
M-Pede (potassium salts of fatty acids)	M	fast	contact
Overture 25 WP (pyridalyl)	Unknown	medium	7 – 14
Pedestal (novaluron)	15	slow	7 – 14
Preclude-TR (fenoxycarb)	7B	slow	7
Pylon 2SC (chlorfenapyr)	13	medium	7
Sarari 20 SG (dinotefuran)	4A	medium	7
Scimitar GC (lamda-cyhalothrin)	3	fast	7
Talstar and generics (bifenthrin)	3	fast	?
Tristar (acetamiprid)	4A	fast	?
Ultra Pure Oil, SuffOil-X, etc. (paraffinic oil)	M	fast	contact
Knock Down: fast (<1 day), medium (1-7 days) and slow (>7 days)			
Source: Extracted from Thrips Management Program for Ornamental Horticulture, University of Florida, IFAS Extension, MidFlorida Research and Education Center			