

# St. Augustine Orchid Society

Established in 2006 for Growing Orchids in North Florida



TIP

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# **Orchid Pests and Diseases - Orchid Pests**

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Information assembled by Sue Bottom. JAR

Scale

**Insecticides and Miticides for Orchid Pests** 

(follow label instructions and wear protective equipment)



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Varieties: The white boisduval scale is the bane of the cattleya grower's existence. Mature males are cottony white masses while the mature females lay their eggs under whitish circular shields. The crawlers are the nymph state that emerge from under the shield until they find their new home.

Hard scale is another armored scale that ultimately forms a brown conical structure protecting the scale underneath it.





Soft brown scale is light yellowish to dark brown with oval to circular shells appearing on leaves, flowers, flower spikes, pseudobulbs and sometimes rhizomes and roots. Soft scale produces honeydew while hard scales do not. **Treatment:** If there are only a few scale, use a Q tip dipped in isopropyl alcohol or a pesticide like Malathion, Orthene, Summer Oil or Safer Soap (used per label instructions) to physically remove scale. For more severe infestations, apply the pesticide at the crawler stage and repeat the application 2 weeks later. Be sure to spray all plant surfaces, particularly the undersides of leaves and leaf axils. A drench with one of the Bayer products containing imidacloprid will also kill them. With the Bayer product containing 1.47% imidacloprid, add 1.5 tsp into a quart of water and pour it through the mix to thoroughly drench the potting mix. The

orchid will absorb the imadacloprid through the roots into the leaves and kill the scale from the inside out. Safari is an excellent broad spectrum pesticide. Distance is an expensive insect growth regulator that will prevent juvenile scale from maturing. Safari or something similar in combination with Distance will eliminate scale from your orchids.

**Prevention:** Remove old leaf and flower sheaths to eliminate scale hiding places and allow easy inspection. Check new plants carefully before adding to the growing area.

Read More: Boisduval Scale on Orchids, Scale Insects on Orchids and AOS scale article (Dr. Paul Johnson, South Dakota State University).



# Mealybugs

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**Symptoms:** Mealybugs are sucking insects that attack any part of the plant but tend to stay tucked away at the junction of the leaf and stem. Severe infestations cause chlorotic areas to appear on the leaves, which may darken, causing the leaf to yellow and drop prematurely.

**Treatment:** If there are only a few mealybugs, use a Q tip dipped in isopropyl alcohol or toothbrush dipped in a pesticide like Malathion, Orthene or Safer Soap (used per label instructions) to physically remove the mealybugs. For more severe infestations, apply the pesticide and repeat the application 2 weeks later. Be sure to spray all plant surfaces, particularly the undersides of leaves and leaf axils. A

drench with one of the Bayer products containing imidacloprid will also kill them. With the Bayer product containing 1.47% imidacloprid, add 1.5 tsp into a quart of water and pour it through the mix to thoroughly drench the potting mix. The orchid will absorb the imidacloprid through the roots into the leaves and kill the scale from the inside out.

**Prevention:** Remove old leaf and flower sheaths to eliminate hiding places and allow easy inspection. Check new plants carefully before adding to the growing area. Read More: Mealybugs on Orchids (Dr. Paul Johnson, South Dakota State University). Mealybugs (AOS)



#### **ORCHID PESTS**

Mealybug Images

Mites Images

Scale Images 

Thrips Images



#### ORCHID DISEASES

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Black Rot Images
Erwinia Images
Fusarium Images
Leaf Spotting Fungi Images
Pseudomonas Images
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**ORCHID VIRUSES** -----

Orchid Viruses

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#### Thrips View More Images





Symptoms: Thrips are very small sucking insects that feed on flowers and occasionally leaves and can transmit disease from plant to plant. Infested buds may not open and flowers may be deformed exhibiting water soaked spots. Leaves may appear pitted, stippled, silvery or bleached. Roots can be girdled from thrips feeding on the growing root tips.

**Treatment:** Thrips are the most difficult to control of all the orchid pests. 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.

Plants and flowers can be sprayed with a pesticide like Orthene, Malathion or Safer Soap and the stronger chemicals like Talstar, Avid or the Bayer imidacloprid product, rotating products and applying them in accordance with label instructions. Conserve is another alternative and it can be sprayed directly on the flower. Repeat applications will be required because thrips remain hidden on the plant or can be reintroduced to the plant from other flowers in the landscape. For severe infestations, apply chemicals twice a week for three weeks.

**Prevention:** Good sanitation will help prevent infestation as will keeping plant hosts (flowers, citrus, gardenias, eucalyptus, etc.) separate from your orchids. Remove weeds, old plant debris, and growing medium from within and around the growing area. 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. The thrips lay eggs that hatch in grassy areas so keep the grass mowed and weeds controlled.

Read More: Thrips Pest Management (IFAS, University of Florida) Thrips Management Program for Ornamental Horticulture (MREC, IFAS, University of Florida) Thrips on Ornamental Plants (IFAS, University of Florida) Thrips Cocktail (OHP Inc.) Sustainable Thrip Control (National Sustainable Agriculture Information Service) Scouting for Thrips (University of Hawaii) Thrips on Orchids (Sue Bottom) Orchid Blossom Midges (Susan Jones, AOS)



## Mites

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**Symptoms:** Mites are not insects, they are members of the arachnid family. Spider mites typically feed on the underside of the leaves and can be found under the leaves as small, red to brown pests. A hand lens may be needed to see them. Leaf undersides may have webbing and brown splotches from the mite excrement. The upper surface of a damaged leaf may have a silvery sheen that eventually becomes sunken and turns brown. Leaves may be streaked, stippled or spotted due to lack of chlorophyll. Thin or soft-leaved orchids are more susceptible to mite damage than those with thicker leaves, but no variety is immune.



**Varieties:** There are three groups of mites infesting cultivated orchids, spider mites, flat mites and broad mites. The two spotted mite, or red spider mite (*Tetranychidae*), causes a chlorotic spot or stipple at each feeding site as chloroplasts are sucked out along with the plant sap. Leaves eventually develop a mottled or stippled appearance with webbing under the leaf in severe infestations.

Flat or false spider mites are in the *Tenuipalpidae* family, and including the Phalaenopsis and *Brevipalpus* mites, often feed on the upper surfaces of leaves creating a pock-marked appearance from empty and collapsed leaf cells. Flat mite

feeding on thin leaves, especially the underside, is similar to the stippling caused by spider mites, but there is no webbing.

Broad mites (*Tarsonemidae*) are microscopic in size and the initial symptom is chlorotic discoloration.

**Treatment:** Try spraying upper and lower leaf surfaces with the home cure mixtures of 1 part rubbing alcohol, 1 part 409 or Murphy's Oil Soap and 2 parts water. Another choice is a 2% solution of oil (Johnsons baby oil or vegetable oil) in water with a squirt of some dish detergent (Ivory or Palmolive). This works out to be about 5 tablespoons oil in a gallon. You can alternate 2% sprays of oil and then 2% soap solutions. Plants can also be sprayed with a miticide like Avid following label instructions being particularly careful to contact all the undersides of the leaves. During warm weather, new generations mature every 6 days so repeat applications will be required, perhaps 3 applications at 4 day intervals. TetraSan is an insect growth regulator that can be used to keep the egg and nymph stages from maturing.

**Prevention:** Mites appear during warm, dry weather. Increasing humidity and leaf wetness and, if possible, decreasing temperature help prevent infestations.

Read More: Mites on Cultivated Orchids (Dr. Paul Johnson, South Dakota State University) Selected Miticides for Ornamental Plants (Stamps and Osborne, University of Florida) Phytophagous Mites and Their Management on Ornamental Plants (Juang-Horng Chong, Clemson) Mites (Susan Jones, American Orchid Society).



## **Aphids**

**Symptoms:** Aphids are sucking insects that attack buds, flowers and new growths and transmit disease from plant to plant. Buds and flower may fail to open and leaves may have a sticky deposit.

**Treatment:** Wash aphids away from the plant with a jet of water. Plants can be sprayed with a pesticide like Malathion, Orthene or Safer Soap using the product in accordance with label instructions.



Additional Info: The honeydew excreted by aphids and other sucking insects is attractive to ants and is an ideal medium for sooty mold. When sooty mold is present, inspect the plants for aphids, mealybugs, scale and mites.

**Read More:** Aphids and Their Control on Orchids (Dr. Paul Johnson, South Dakota State

Aphids (Susan Jones, American Orchid Society).



## Whiteflies

University)

Symptoms: Whiteflies are small, moth-like insects that attack buds, flowers and new growth. The tell tale sign of whiteflies is a cloud of tiny white insects arising from an affected plant when it is moved or disturbed.



Treatment: Plants can be sprayed with Malathion, Orthene or Safer Soap following label instructions. Repeat applications at 4 day intervals until whiteflies are no longer present.

**Prevention:** Good sanitation and elimination of weeds will help prevent infestation as will keeping plant hosts separate from your orchids. **Read More:** Whiteflies (Susan Jones, American Orchid Society)



#### **Snails and Slugs**

**Symptoms:** These mollusks will leave holes and notches in the leaves, flowers roots and may chew off the growing tips. Chewed areas may also appear on buds. These nocturnal pests travel on a layer of slime and this slime trail is evidence of their presence.



Treatment: Chemical baits may be placed in the growing area. Ash and diatomaceous earth can be spread on horizontal surfaces to create a barrier though water will deactivate it. Beer in shallow tins can be spread in the growing area and the drowned pests removed the next day. Regular applications will have to be used because watering will disperse the controls.

Read More: Controlling Snails and Slugs (Dr. Martin Motes)



#### Caterpillars

Symptoms: Caterpillars are the immature stage of moths and butterflies. While not common, they are voracious feeders that can do a great deal of damage to flowers and leaves in a short period of time.

Treatment: Caterpillars can be physically picked off the plant and destroyed, check the underside of leaves for their presence. Bacillus thuringiensis or Bt is a naturally occurring bacteria of insects, it is a safe and natural product that can be sprayed in the growing area following label instructions.

**Prevention:** Keep the growing area clean of fallen leaves and debris in which insect pests and their eggs can hide. Keep the landscape free of caterpillars. Read More: Caterpillars (Susan Jones, American Orchid Society)



#### Ants

Symptoms: Ants cause little direct damage. Any damage present is more likely caused by a sucking pest that caused the plant to exude honeydew (basically plant sap) to which the ant is attracted.

**Treatment:** Pour a solution of Orthene or Liquid Sevin at 1 tsp/gallon through the pot. Do this outdoors because it should cause ants (and other hiding pests like roaches) to rapidly exit the pot. If you notice ants, check your plants for aphids, mealybugs, scale and mites and treat accordingly.

**Prevention:** Keep plants and the growing area free of sucking pests to minimize the honeydew attractant, although sometimes healthy vigorous orchids exude honeydew naturally.



#### **Cockroaches and Grasshoppers**

Symptoms: Cockroaches and grasshoppers cause damage by eating flowers, roots and new growths.

**Cockroach Deterrence:** Cockroach baits can be spread in the growing area or a paste of boric acid, sugar and flour mixed with water can be spread in every nook and crevice you can find. Don't get any of the stuff on the plants themselves. Another approach is to water and then flush a mix of liquid Sevin (1 tsp/gal) through the pot.



**Grasshopper Deterrence:** Crush the grasshoppers with a brick, shoe, etc. Partially bury jars filled with molasses and water and remove drowned victims the next day.

Read More: Roaches and Lubber Grasshoppers (Susan Jones, American Orchid Society).



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