

INSECT AND RELATED PESTS OF AFRICAN VIOLETS

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The African violet is a popular flowering house plant, admired for its beautiful symmetry and abundant colorful blooms. Culturing and grooming African violets have developed into a fine art, and growers take great pride in the beauty and perfectness of prized specimens.

One of the most persistent problems that growers face is infestations of insect and mite pests; many different pests attack African violets. Some feed on the roots, some on the foliage and still others on the blooms.

Even the slightest pest damage will render show plants useless; therefore, prevention of damage is very important to growers. Pest control on African violets is complicated because some of the most damaging pests are minute and often go undetected until damage has occurred. When growers are familiar with violet pests and their damage, frequent plant inspection can reveal problems before serious damage occurs.

Nature of Damage

Pests attacking African violets may be divided into three groups according to the damage they cause. These groups are chewing pest, sucking pests and nuisance pests.

Damage from chewing pests usually occurs rapidly and is evident immediately. These pests should be eliminated as soon as they are detected. Symptoms of chewing pests include:

1. Wilting of plant (root or crown damage)
2. Severed leaves or flower buds
3. Holes in leaves or flower petals
4. Discolored areas on the surface or margins of leaves or flower petals.

Sucking pests insert their mouthparts into plant tissue and suck out the juices. Some inject toxic compounds into the plant and some are capable of transmitting certain plant diseases. The symptoms of sucking pests often go unnoticed for a period of time. This allows the pests to become established and increase in numbers, resulting in considerable plant damage. The symptoms of sucking pests are:

1. Wilted appearance
2. Presence of honeydew
3. Curling or stunting of leaves
4. Discoloration (yellowing) of leaves
5. Necrotic (dead tissue) spots in leaves.

Nuisance pests cause no damage. They are considered pests simply because their presence is not desirable. Such insects flying or hopping about detract from a beautiful centerpiece or a specimen plant on exhibition. Some nuisance pests multiply rapidly and often are found in overwhelming numbers. Such infestations are easily eliminated with careful management and properly selected insecticides.

Chewing Pests

American Cockroach. The American cockroach is the most commonly reported chewing pest of African violets. Both immature and adult cockroaches damage violets. They usually eat on flower buds and blossoms, but they also feed on leaves and leaf petioles. Roaches occasionally cause extensive damage to rooting leaves and seedlings.

Thrips. Several species of thrips attack African violets. Thrips are minute insects that feed on pollen and tender plant tissue. Although the most common species of thrips found on violets are yellow, others may be tan or black. Violets become infested when thrips enter the home or greenhouse through ventilation systems, window or door screens, on clothing or in infested plants and cut flowers. Virtually every wild and cultivated blossom blooming in the home landscape is infested with thrips.

Damage to violets occurs when thrips feed on the pollen and flower petals. Heavy infestations result in deformed, undersized or discolored blossoms and brown edges on flower petals.

Foliage Feeding Larvae. Many species of foliage feeding larvae have been observed on African violets. The most common include the salt marsh caterpillar, various loopers and armyworms. In most instances these are accidental pests that have found their way into homes or greenhouses. They attack violets because a more suitable host plant is lacking. These larvae are voracious feeders and only a few can cause severe damage. Control often can be achieved by picking the larvae from the plants and destroying them.

Foliage Feeding Beetles. Beetles are not common pests of African violets; however, several species feed on the plant. These include the twelve-spotted cucumber beetle, banded cucumber beetle, green june beetle and several species of flea beetles. Beetles are more mobile than foliage feeding larvae and they may cause severe damage in a violet culture if not detected and eliminated quickly.

Snails and Slugs. Snails and slugs are predominantly greenhouse pests. They prefer to feed on very tender tissue and occasionally damage rooting leaves and small seedlings. These pests generally feed at night and hide beneath pots, flats and other objects during the day. Both snails and slugs leave a slime trail behind them as they travel about. Treatment for snails and slugs should be applied when their presence is detected. Bait formulations are very effective in controlling these pests.

Symphylids. Symphylids are about 1/4-inch long. They are milk-white in color, elongate and have 12 legs. They have long antennae and no eyes. These pests are subterranean in habit and are seldom seen on the soil surface. They prefer moist soil that is high in organic matter. Heaviest populations of symphylids occur in the fall and winter. They are very active, but are hard to find unless present in large numbers. Symphylids seldom cause damage to plants and are usually just a nuisance, but a few species will feed on tender roots of seedlings.

Sucking Pests

Cyclamen Mite. The cyclamen mite is one of the most damaging pests of African violets. The mite is about 1/100-inch long and cannot be detected without magnification. Adults are oval shaped, amber to tan and glisten as if wet or oily. Adults live for about 1 month with females laying about 100 eggs each. If conditions are favorable, populations can increase rapidly. Damage from cyclamen mites is generally detected before the mites themselves. Early symptoms include leaf curling and a fuzzy appearance to the center of the plant. Damaged plants may have blooms that are undersized, off-color or streaked. Buds may not open and/or shed. Heavy infestations kill blossoms, buds and the small leaves in the center of the plant. Inspect plants frequently and apply a miticide when mites or damage are detected.

Broad Mites. Broad mites resemble cyclamen mites but are only occasional pests of violets. Unlike cyclamen mites, they do not attack the center of the plant, but prefer the older, bottom leaves. They feed on both the upper and lower surface of the leaves; damaged leaves turn yellowish and the edges may curl under.

Spider Mites. Spider mites, often called "red spiders", are small and red. They barely can be seen with the unaided eye. Seldom do these mites attack violets, but when they do, damage is severe. Damage appears as bleached out or

yellowish spots on the leaves. Spider mites most often move to violets from other ornamentals such as marigolds, ivy or mums.

Aphids. Aphids are small, soft bodied insects. Some may have wings. They may be yellow, green or black. They damage plants by sucking juice from leaves and stems. Aphids secrete honeydew and heavy infestations may result in the sticky substance covering the plant. Aphids reproduce rapidly so infestations should not be neglected. Apply an insecticide as soon as aphids are found.

Scale Insects. Scale insects are very small, soft bodied pests that attach themselves to plant leaves and petioles. They secrete a covering or "scale" over their body. Once attached, they never move. Several species of scale insects have been found on African violets. Scale, like aphids, secrete honeydew which collects on the plant. Inspect plants having honeydew or a wilted appearance for the presence of scale. Control often may be achieved simply by removing the attached scale insects from the plant. Treat heavy infestations with an effective insecticide.

Foliar Mealybugs. Several species of foliar mealybugs attack African violets. These include the citrus mealybug and the Comstock mealybug. Mealybugs are about 1/4-inch long, soft bodied and covered with a white waxy material. These pests may be found on the crown of the plant, the leaf and petioles and the flowers. They secrete honeydew and heavily infested plants become very sticky. Control light infestations by removing them with a small swab saturated in alcohol. Heavy infestations may be difficult to control, requiring 2 to 3 insecticide applications.

Soil Mealybugs. At least 2, and possibly 4, species of soil mealybugs infest African violets. The most common species is the Pritchard mealybug, which is about 1/40-inch long and milk-white in color. The white color comes from a powdery, waxy material secreted by the mealybug which covers its body. These pests resemble tiny bits of perlite in the plant root-ball. Infestations of soil mealybugs may go unnoticed for long periods of time. If infested plants are put under stress from lack of water, fertilizer or temperature, symptoms develop rapidly. Mealybugs destroy the root hairs and symptoms of infestation include yellowing plant leaves, wilted appearance, stunting and bloom reduction. Treat soil mealybugs as soon as an infestation is detected. A drench will give better results than a foliar or soil surface application.

Nuisance Pests

Pillbugs. Full grown pillbugs are about 3/8-inch long and gray in color. Although they are capable of damaging seedlings, they are most often considered a nuisance pest. They feed on decaying organic matter and are found in moist soil and debris on the soil surface. Pillbugs often enter potted plants through drain holes and push soil out the hole, leaving a mess to be cleaned up.

Earwigs. Earwigs are dark brown to black insects. They are elongate and have pincer-like structures on the end of their abdomen. Full grown earwigs are about 3/4-inch long. These insects feed on decaying organic matter, but some occasionally feed on living plant tissue. Earwigs frequent dark, moist areas and thrive in potted plants. They are frequently found on benches or shelves beneath pots.

Springtails. Springtails are minute, wingless insects about 1/10-inch long and vary in color from black to gray to white. They are found in dark, damp areas and in soils high in organic matter. Some species occasionally feed on living plant tissue such as sprouting seed, roots and tender shoots. Large concentrations of springtails often are found floating in water reservoirs or on the soil surface. They are very mobile and can be found crawling on plants, pots and tables. Literally thousands may be found in sand, gravel or other materials in propagation beds or plant trays. Control springtails by treating benches, shelves or the soil beneath greenhouse benches. Insecticide may need to be applied to the outside of pots and saucers and to the soil surface of potted plants when heavy infestations occur.

INSV - Inpatiens necrotic spot virus

While INSV is viral infection and not a pest, it is transmitted by the western flower thrip. It is incurable and any plant suspected must be disposed of quickly. It starts out mildly, and can mimic other AV problems, and can be present without showing symptoms. Ring spotting is one of the first symptoms. It can also present as a classic cyclamen mite infestation. As a matter of fact the common belief is that most cyclamen mite diagnoses is in fact INSV. You can test for this virus using the INSV ELISA kit which can be purchased over the internet. However, you must test several different areas of the plant because the infection does not present throughout the entire plant but only in certain areas. So you can test multiple areas before one comes up positive. The other option is to contact our local extinction office and have them test.

Duval County Extension Service

Website: duval.ifas.ufl.edu

Phone: (904) 255-7450

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Pesticide Use and Safety

When used as directed on the label, pesticides are safe and effective. However, all pesticides are poisonous and, if misused, may be hazardous to man and animals and also may contribute to environmental pollution.

Before using any pesticide, read the label in its entirety. Note any special precautions, such as the necessity of wearing special protective clothing while making applications. Follow all safety precautions given in the label. The following suggestions will aid in developing safe pesticide use practices:

1. Become familiar with a pesticide *before using it*. Know its registered uses, toxicity and the necessary precautions for its safe use.
2. Keep all safety equipment, such as face masks, respirators and protective clothing on hand and in *good working order*.
3. Mix pesticides outdoors or in well ventilated area. Avoid skin contact and do not breathe vapors.
4. Do not save used pesticide containers. Dispose of the containers as instructed by label directions.
5. Store all pesticides in a secure place, away from pets and children. Never store pesticides in unmarked containers.
6. Apply correct dosage of pesticide. Using less than the correct amount may result in poor pest control. Using more than the recommended amount may result in excessive residue or plant damage.
7. Obey specified time intervals between treatments. Failure to observe these restrictions may result in excessive residue or plant damage.
8. Certain chemicals are phytotoxic to some plants. Refer to the label for susceptible plants.

Control

Early pest detection and control are essential to prevent damage. Inspect plants frequently and treat insect infestations as soon as they are detected. Thoroughly examine newly acquired plants and isolate them for a period of time before they are introduced into a culture.

Before using a pesticide, read the label thoroughly and apply the pesticide only as directed on the label.

Table interpretation from January February AVM article by Ronn Nadeau, PhD

Pesticide	Kills	Recommended Application	Type	Amount needed per Gallon of water
Avid Abamectin	Mites, aphids, thrips, And whiteflies	Use within 24 hours 3 times, 7 days apart	Miticide And insecticide	1 ½ teaspoon 3 drops per 11 oz. of water
Conserve	Thrip and other insects	5 times, 5 days apart	insecticide	1 ¾ teaspoon
Akari 55C	Mites, suppresses mealy bugs	3 times, 5-7 days apart	Miticide	3 ½ teaspoon
Dominion (liquid form of Marathon) imidacloprid	Thrips, aphids, fungus gnats, Mealy bugs	Preventative – Begin foliar application in the spring and reapply as needed	Systemic insecticide	1 ½ teaspoon
Marathon imidacloprid	Thrips aphids, fungus gnats, Mealy Bugs	Preventative – 1/8 tea for 3” pot, ¼ tea for 4” pot	Systemic insecticide	

*Before purchasing and using a pesticide, check the product label. Solvents, carriers, concentrations and other factors may differ with products even though the active ingredient is the same. Be sure a product is registered for use on African violets and for the specific pest you wish to control before you use it.

Natural solutions from the internet

Rhubarb Leaf Mix

1 cup rhubarb leaves

6.5 cups water

1/4 cup liquid dish detergent or soap flakes

- Cover rhubarb leaves with water and bring to a boil. Boil for 20 minutes then remove from heat and cool. Strain then add 1/4 cup liquid dish detergent. Apply. Good for aphids, june beetles, spider mites, thrips.
- Rhubarb leaves are poisonous, take care when preparing and handling. Do not use on food bearing plants.

Garlic Tea

- Make your own garlic spray by boiling a pint of water, throw in roughly chopped garlic cloves and steep until the water cools. Remove garlic bits then apply.

Garlic, Peppers & Onion Insecticide

2 hot peppers

1 large onion

1 whole bulb of garlic

1/4 cup water

- Toss in the food processor and add water, blend until a mash is made. Cover mash with 1 gallon hot (not boiling) water and let stand 24 hours. Strain. Spray on roses, azaleas, vegetables to kill bug infestations. Bury mash in ground where bugs are heaviest. Good for thrips, aphids, grasshoppers, chewing and sucking insects.

Tomato Leaves Mix

- Crush leaves from a tomato plant and soak in water for a couple days. Strain then spray. Good for grasshopper and white fly control.
- Tomato leaves are poisonous, take care when preparing and handling. Do not use on food bearing plants.

Basil Tea

4 cups water

1 cup fresh basil (or 2 TBS dried)

1 tsp liquid dish detergent

- Bring water to a boil then add basil. Remove from heat, cover and steep until cool. Strain. Mix in the liquid detergent then apply. Good for aphids.

As most insect are microscopic these magnifiers help to identify if you have an insect issue.

Magnifiers:

Zoomy Handheld Digital that can be used with your computer

http://www.walmart.com/ip/Learning-Resources-Zoomy-Handheld-Digital-Microscope/16609535?action=product_interest&action_type=title&placement_id=irs_middle&strategy=PWVUB&visitor_id=63082095531&category=0%3A4171%3A56125%3A1076064&client_guid=65cb2797-5247-4ee6-9328-ad8db23e699a&config_id=2&parent_item_id=16609535&guid=20e18202-a731-42f4-8acc-2fa481b88972&bucket_id=irsbucketdefault&findingMethod=p13n

We sell a Jeweler's Loupe with 10x magnification that works very well