



How to Combat Insect and Mite Pests

Dale Mott and Michael E. Merchant*

Lantana and verbena are perennial ornamental plants found in many Texas landscapes. These plants are known for their drought tolerance, cold hardiness and colorful flowers that generally bloom from March through October. Because of these attributes, lantana and verbena are very popular in residential and commercial landscapes and xeriscapes. They perform well in full sun and bloom in an assortment of colors.

At first these plants appear to be problem-free perennials that you can plant, water until established, and then leave alone. However, there are several insect and mite pests that attack lantana and verbena. In most situations, their damage is minimal and goes unnoticed. The problem is recognized when infestations become severe, and often the cause of the problem remains a mystery.

*Extension Agent—Integrated Pest Management and Professor and Extension Urban Entomologist, The Texas A&M University System

Although lantana and verbena can survive most pests, you may need to intervene if the plant is attacked heavily. Intervention can help manage the injury and stimulate the plant to continue blooming on its regular cycle.

Most of the insect and mite pests that affect lantana and verbena are similar. They usually suck sap from the plant tissue (phloem) using mouthparts that are adapted for piercing and sucking. As a result, the plant is injured, which reduces its vigor as well as the quality and number of blooms.

Some insects—including aphids, whiteflies and mealybugs—also excrete a sweet, sticky material called honeydew, which drips down on the plant. The honeydew accumulates on the leaves and stem of the plant and on whatever is nearby. Sooty mold, a black fungus, often grows on the honeydew, resulting in the sidewalk or the side of the house being stained black. This problem is especially noticeable on limestone (white rock) houses.

You can prevent most pest problems by adopting integrated pest management (IPM) practices. The first step in an IPM program is identification. Once you identify the pest, you can then implement control measures that are most effective, least expensive and least harmful to the environment.



Aphid

Aphids

Several species of aphids feed on lantana. Aphids are small, soft-bodied insects about $\frac{1}{25}$ to $\frac{1}{8}$ inch long with relatively short legs and antennae. You can

usually recognize aphids by their slow, deliberate movement and the presence of cornicles or “tail pipes” on the apex (tip or top) of the abdomen. They can be winged or wingless. Their color varies from black to green, yellow or pink, depending on the species and the host plant.

Although some aphids lay eggs, most give birth to live young that mature in as few as 7 days. Because they mature so quickly, aphids can quickly build up to high numbers in a relatively short period.

Aphids generally live in groups on buds, on the undersides of leaves or in the plants’ terminal (end) growing points. They suck sap from the plant and excrete honeydew, which you can see accumulating on leaves and stems of the lantana. Sooty mold often grows on the honeydew, making the plant unattractive and hampering its growth by reducing photosynthesis.

Plants heavily infested with aphids appear wilted. Some aphid species cause leaves to yellow or drop from the plant; other species stunt and curl young leaves (also see Extension publication B-6047, *Aphids in Texas Landscapes*).



Lacebugs

Lacebugs

Probably the most common insect pests found on lantana are lacebugs. Populations of this pest generally do not build up until temperatures climb to near 90 degrees F.

Lacebugs are broad, flattened, rectangular and small, about $\frac{1}{8}$ to $\frac{1}{4}$ inch long. Their bodies are usually brown to black. Their wings are partially transparent and gauze- or lace-like in appearance. An immature lacebug is blackish and wingless, with many small spines projecting from its body.

The adult lacebug deposits its eggs on the underside of a leaf along the midrib, then secretes a brownish substance over the eggs to secure them to the leaf. When the leaves become heavily infested, these dark, varnish- or molasses-like spots are very noticeable.

Damage on the top side of the leaf appears as white, brown or yellow specks caused by the insects feeding on the underside. Heavily infested leaves turn yellow and die from the tips toward the base and drop off prematurely.



Mealybugs

Mealybugs

Mealybugs are closely related to many of the scale insects that attack many different types of plants. The name mealybug is derived from the mealy or waxy secretions that cover the body of this insect.

Mealybugs are soft-bodied insects that grow to $\frac{1}{4}$ inch long. They are found at rest or crawling slowly on stems or along veins on the undersides of leaves. Their eggs are laid in clusters enclosed in white, waxy, cottony material.

Damage by mealybugs is similar to that caused by aphids. It is caused by sucking of plant sap, which stunts or kills the plant. Also, black sooty mold grows on the honeydew excreted by the mealybugs.

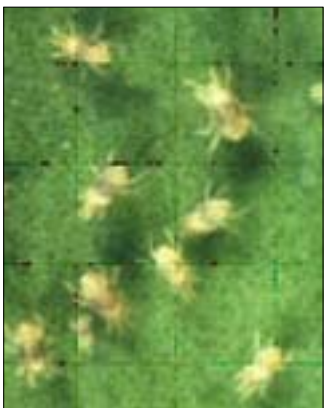


Whiteflies

Whitefly adult and nymphs Adult whiteflies are small, white, soft-bodied insects. They are only about 1/16 inch long and have four wings. Weak fliers, they resemble tiny snowflakes fluttering about a plant. The wings and body are covered with a fine, white, powdery wax.

The immature stage is found on the underside of leaves. It is flat, oval in outline and slightly smaller than a pinhead. Immature lacebugs are light green to whitish and are somewhat translucent.

Both immature and adult forms feed on lantana and verbena, leaving yellow spots on the leaves. Heavy infestations can cause defoliation. Much like aphids and mealybugs, whiteflies secrete honeydew, causing plants to be covered with the sticky substance (see also Extension publication L-1299, *Whiteflies*).



Spider mites

Spider mites

One of the most common pests attacking ornamental plants is the spider mite, commonly referred to as a group as "mites." They are not insects, but are more closely related to spiders and ticks. Adult mites, spiders and ticks have eight legs. Mature mites are usually less than 1/50 inch long and generally are found on the undersides of leaves.

Mite infestations often go undetected until the plants are damaged severely. Mite populations tend to peak during the hottest, driest time of the year, generally between July and mid-September. Mites can easily be seen by shaking the foliage over a white sheet of paper and observing any mites present.

The undersides of infested leaves usually have fine, silken webbing spun across them. Among the live mites, there may be cast skins, which leave a grayish residue on the leaf's underside.

Damage from light infestations appears as yellow or gray stippled patterns on the leaves. Heavy infes-

tations cause the leaves to turn yellow, gray or brownish and eventually drop off (see also Extension publication L-1244, *Destructive Mites in the Home Garden*).

Pest management

Most populations of insect and mite pests are regulated by naturally occurring beneficial insects, also known as beneficials. Some of these beneficials include immature and adult lady beetles, lacewing nymphs, spiders and various tiny parasitic wasps. However, these beneficials may take longer to control pests naturally than you'd like. In the meantime, the plants are damaged and become stressed.

To manage the pest population more quickly, you may employ a mechanical control method such as a "water wand" sprayer or chemical control methods such as an insecticide. Many products are available to control pests in residential and commercial landscapes; examples are provided in Table 1. You may also use other products with labels that cover lantana in general categories such as "ornamental plants" or "flowering plants."

It is important to become familiar with a pesticide before using it. Always read and follow the pesticide label instructions. Be sure to use proper equipment and the rates of the product that are specified on the label.

Other protective measures include proper cultural practices such as watering and adding compost and mulch. These practices will help keep the plants healthy and more tolerant of pests. In addition, proper soil fertility is also important to keep lantana and verbena actively blooming throughout the season. But over-applying nitrogen can actually contribute to plants being more attractive to the piercing-sucking insects previously mentioned.

Before adding more plants, make sure that the soil is good, well-drained and in an area that receives at least 8 hours of full sun per day. South and west exposures are perfect. Incorporating up to 4 inches of organic matter, such as compost and a 2- to 4-inch layer of mulch, should be a standard practice when adding new plants to a landscape.

Also, to encourage constant blooming and a neater appearance, be sure to lightly trim the tips of the plant occasionally.

Insecticides and Miticides for Pests of Lantana and Verbena

Table 1. Examples of insecticides and miticides registered for use on insect and mite pests of lantana and/or verbena, 2005.*

Generic or Active Ingredient	Trade Name(s)	Pest(s) Labeled for Use Against:				
		Aphid	Lacebug	Mealybug	Whitefly	Spider Mite
abamectin**	Avid 0.15 EC					✓
acephate	Orthene Turf, Tree & Ornamental Spray, WSP	✓	✓			
azadirachtin	Safer Brand BioNEEM Multipurpose Concentrate Insecticide & Repellant	✓	✓	✓	✓	
Beauveria bassiana	Naturalis-O	✓	✓	✓	✓	✓
carbaryl	Chipco Sevin Brand 80WSP, Sevin SL	✓	✓	✓		
	Sevin Brand Insecticide Liquid (21.3%)	✓	✓	✓		
cyfluthrin	Bayer Advanced Multi-Insect Killer		✓	✓	✓	
disulfoton	Hi-Yield Di-Syston Granules (2%)	✓	✓	✓	✓	✓
horticultural oil	SunSpray Ultrafine Year Round Pesticidal Oil	✓	✓	✓	✓	✓
imidacloprid + cyfluthrin	Bayer Advance Garden Rose & Flower Insect Killer	✓	✓	✓	✓	
insecticidal soap	Concern Insect Killing Soap Concentrate	✓		✓	✓	✓
malathion	50% Malathion	✓	✓	✓	✓	✓
permethrin	Ford's InterCept Insect Control Vegetable, Lawn & Garden Spray Concentrate	✓		✓	✓	✓
pyrethrins plus piperonyl butoxide	Concern Multi-purpose Insect Concentrate	✓			✓	

* Note: Some of the products listed are Restricted Use or for commercial use only and cannot be purchased without pesticide applicator license. For any insecticide, always refer to the product's label for instructions, registered use sites (outdoor, greenhouse, interior scape), species controlled and plant species or types on which the material can be safely applied.

** This product is used primarily by professional landscape maintenance personnel.