

The Bugs of Summer

With the warm rays of summer comes a new crop of insect pests eager to take possession of a rose garden thriving with lush, succulent growth. The aphids step down and, like a changing of the guard, their posts are commandeered by the heat-lovers: whiteflies, thrips and spider mites. Between the three of them, they've got the whole rose bush covered, from the buds and growing tips where thrips feed, to the bottom-most leaves where spider mites begin their assault, and all the greenery in between, which is where whiteflies hang out.

Whiteflies

You're strolling through your summer rose garden and when you reach to sniff a bloom, whoosh! you unleash a swarm of what looks like microminiature white moths. Whiteflies! Although there are many whitefly varieties, Giant Whitefly (*Aleurodicus dugesii*) is the culprit which has overrun Southern California. Native to Mexico, giant whiteflies crossed the border in 1992 and have infiltrated not only Southern California, but Arizona, Florida, Hawaii, Louisiana and Texas as well. The pestilence continues to spread rapidly northward.



While it may be snappy to refer to whiteflies in the singular-"whitefly"-their occurrence in the singular would hardly be cause for leading off a rose care column. Giant Whitefly-like its brethren Greenhouse, Silverleaf, et al-seem to come by the colony. They damage plants by their feeding, thrusting their needlelike mouths into leaves to suck out the sap. If there are enough of them, they can weaken the plant. Like aphids, whiteflies excrete a sticky honeydew substance which promotes the culture of a black sooty mold. Although unsightly, the white clouds of pests rarely result in death of a plant, unless it is very young or unhealthy to begin with. Recently, though, whiteflies have been found to spread viruses. And that may be cause for alarm.

Whiteflies go through three developmental stages: egg, several nymph phases and adult. All of the development stages occur on the underside of the leaf. Eradicating one stage of the insect may leave another stage completely unharmed. The recommended control management strategy of whitefly is, predictably, a forceful stream of water aimed at the undersides of leaves every two or three days.

An exciting development in a new form of whitefly control may be coming to light. Studies conducted over a six-year period show that plants mulched with worm castings repel a variety of pests, including whiteflies. Apparently the worm castings raise the level of a particular enzyme in the plants-the enzyme chitinase-which whiteflies find distasteful enough to keep moving. The recommendation is to spread a one-inch layer of worm castings around the plant and periodically apply more. It takes some time for the enzyme to form.

In an article published in May 2000, Los Angeles Times reporter Julie Bawden Davis noticed a significant drop in whitefly populations one month after mulching a whitefly-infested hibiscus. After seven weeks, she said, there were absolutely no whiteflies on the plant. Wormgold, pure worm castings produced by California Vermiculture, is available at Otto and Sons in Fillmore, and at AgRx in Somis where it is priced at \$14.55 for a 20-quart bag.

While sprays containing pyrethrum, rotenone or neem provide some control, as do stronger substances such as malathion and diazinon, insecticides are forcefully not recommended. For one reason,

whiteflies readily develop resistance to synthetic insecticides. And secondly, these substances, even the botanical poisons, are just as likely to kill off whitefly predators-parasitic wasps, green lacewings and ladybugs. In California, whitefly parasites are being released by University of California and state scientists with the hope that they will permanently distribute themselves throughout infested areas. The UC integrated pest management web site, www.ipm.ucdavis.edu, adds that "release by home gardeners should not be necessary."

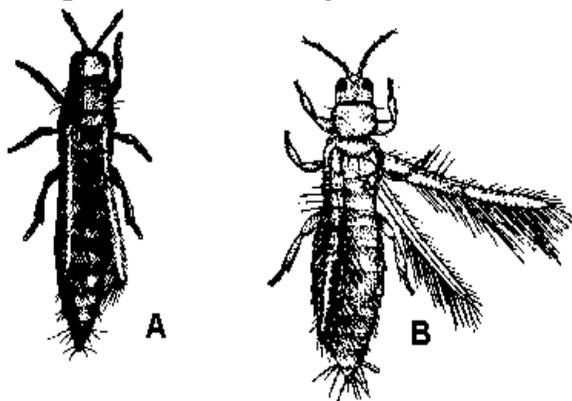
In addition to being an organic control of established powdery mildew, Eco-Erase-the "liquid wax" derived from the jojoba shrub-is labeled as a whitefly suppressant. A home remedy from Mark Bowen, president of the board of directors for Urban Harvest-a community garden organization-in Texas, was published on the Houston Chronicle web site (www.HoustonChronicle.com).

Place one cayenne pepper, one whole lemon (cut up), one bulb of garlic, three tablespoons of soybean oil and two tablespoons of seaweed extract (kelp) into a blender and mix. Strain the mixture through pantyhose. Pour the concentrate into a pump sprayer, dilute with water to make either a strong one-gallon or weaker two-gallon solution. Bowen recommends the weaker solution for drought-stressed plants.

Thrips

Brown-speckled blooms? Burnt bloom edges? Disfigured petals and distorted buds that, perhaps, don't open at all? Western flower thrips (*Frankliniella occidentalis*) may be your culprits. Thrips prefer white and pastel-shaded blossoms, especially if they're fragrant. In my garden, 'Margaret Merrill,' 'French

Fig. 165: Flower Thrips



Lace,' 'Secret,' 'Pearl' and 'Elina' are regularly among thrips' roses du jour. The hyperactive, tiny black or yellow insects get into rosebuds and growing tips, and where they sink their rasping little mouthparts, they leave ugly little brown flecks. Some varieties of adult thrips also feed on spider mites and pollen.

Thrips breed on weeds and grasses, so keeping the garden weeded is a big step toward controlling their defacement of roses and other ornamentals. The advice for rose growers seeking perfection in light-colored blossoms used to be to mist buds and opening blooms every couple of days with Orthene. Not any more.

Orthene was pulled from the market by the EPA earlier this year. According to Ortho Consumer Response Representative, Lauren Ashley, "It may still be on the shelves in some retailers, but it is no longer in our product line. The Isotox has been re-formulated and is now called Ortho Systemic Insect Killer Concentrate. It is still indicated for the control of thrips. Just follow the label directions." Isotox is also a labeled killer of whiteflies, spider mites and other undesirable insects. Orthenex-Ortho's combination fungicide/insecticide-is still on the market.

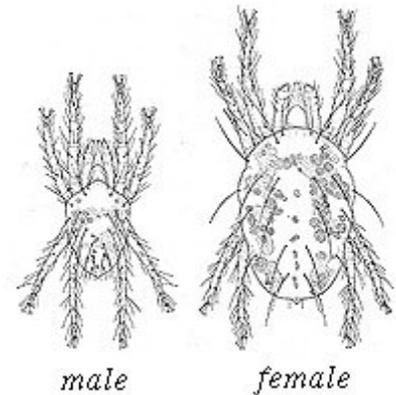
Conserve is a relatively new insecticide derived from a soil dwelling bacteria. It is proving to be an effective tool in managing thrips; AgRx horticulturist Andy Smith says it does a good job on whiteflies, too. A one-quart bottle runs about \$86.

Spider mites

Killing off all the thrips has the significant disadvantage of eradicating one of the natural predators of spider mites (*Tetranychus* spp). Spider mites attack from the bottom of the rose bush up. They are honest-to-God spiders-eight legs and all. They suck the life out of rose leaves. Stippled or desiccated leaves and fine webbing are their calling cards. Unchecked, spider mites can completely defoliate a plant.

The first line of attack on spider mites is the direction of a strong spray of water upwards from the bottom of the plant, cleaning the leaves on both sides every two or three days. Reducing dust and removing the lowermost four to six inches of leaves from the rose bush are steps toward minimizing mite infestations.

More serious infestations may call for the application of a miticide. These products should be used judiciously since mites-like all of the other rose garden pestilences-are capable of building up immunity to chemical controls. Just as in the use of any spray material, wear the proper clothing and follow the manufacturer's instructions in the application of miticides.



Hexygon (1/4 teaspoon per gallon of water, 14 days) and Floramite (1/8 to teaspoon per gallon of water, 21 days) are classified as selective miticides that provide quick knock-down with long-lasting protection. A six-ounce bottle of Hexygon runs around \$170 from Rosemania. The same company prices Floramite at \$199.95 for one pound. Both compounds are ovicides as well as larvicides-they kill spider mite eggs as well as the mites themselves and both are said to be easy on beneficial insects and mites.

Avid is considered by many rosarians to be the most effective eradicator of spider mites, especially when boosted with the pheromone Stirrup M, a sexual attractant. Avid is also labeled for control of thrips. It used to be that Avid was available to home gardeners only in the one-quart size, which at \$299 was both too much and too much. Pressure on the manufacturer has resulted in availability of an eight-ounce bottle, which Rosemania prices at \$99.95. Stirrup M runs about \$30 for an eight-ounce bottle.

Cultural controls

A common denominator in minimizing these summer insect pests, as well as most insect and disease problems, is good garden hygiene.

- Don't bring the pests in on new plants. Inspect both the upper and undersides of potential garden acquisitions. Quarantine and treat "must-have" additions to the garden before exposing them to your established plants.
- Keep garden beds weeded, and clean up fallen blossoms and other debris that may provide breeding and feeding grounds for the varmints.
- Keep roses well watered. Healthy plants are more resistant to insect damage. Roses should always be watered before applying any spray material or fertilizer-organic, botanic or chemical.
- Give rose leaves a thorough shower at least once a week-preferably more often-with a hose or water wand.