

Control of Orchid Mites

false spider mites and spider mites must be distinguished for proper control purposes

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Two kinds of mites feed on orchid plants—the spider mites or red spiders, and the false spider mites.

Orchid growers must recognize which kind of mite infests their plants before selecting a chemical for control.

False Spider Mites

False spider mites feed predominantly on the upper surface of the leaves, puncturing the epidermal cells. Injured areas are silvery first, but become rusty brown.

Three species of false spider mites are known to occur on orchids, and they are now distributed wherever orchids are grown throughout the world. All three species are tiny, flat and yellowish or reddish in color. Their movement is very slow, and they are rather sedentary in habits. They do not spin silk as the spider mites do. The eggs are elliptical, bright red, and often are easier to see with a hand lens than the mites themselves.

The phalaenopsis mite—*Tenuipalpus pacificus* Baker—is distinguished by the broad front portion and the narrow hind portion of its body. It is particularly fond of *Phalaenopsis*, the only host on which it has been found in California. In other

parts of the world it has been found feeding on *Cattleya*, *Cypripedium*, *Dendrobium*, *Oncidium*, *Grammatophyllum*, *Saccolabium*, and *Aerides*.

Adults of the oncidium mite—*Brevipalpus oncidii* Baker—are ovate and feed only on orchids, *Odontoglossum* and *Oncidium* being favorite hosts.

The omnivorous mite—*Brevipalpus australis* (Tucker)—closely resembles the oncidium mite. It has a wide host range and has been found on citrus, rubber plants, tea and on other tropical plants. On orchids it feeds on *Odontoglossum*, *Dendrobium*, *Lycaste*, *Stanhopea*, *Trichophila*, *Peristeria*, *Epidendrum*, *Gongor*, *Brassia*, *Catasetum*, *Houlletia*, *Acineta*, *Anguloa*, and *Bletia*.

Experimental work indicates that all three species are similar in their reaction to chemical treatment, so that the grower need not differentiate them for control purposes. It is important to recognize them as false spider mites, however, because they are not affected by materials such as parathion and TEPP which are effective for control of spider mites.

The most satisfactory material that has been used on orchids for control of false spider mites is di(parachlorophenyl) methyl carbinol—commonly referred to as DMC. The 25% emulsion is diluted at a rate of one pint per 100 gallons of water—one teaspoon per gallon of water. Following experimental work in 1948, growers in the San Francisco Bay area used DMC extensively, and report excellent control with no apparent plant reaction.

Spider Mites

The two-spotted spider mite—currently known in North America as *Tetranychus bimaculatus* Harvey—is a well-known pest of cymbidiums. It is larger than a false spider mite, globular in shape, and is much more active. The mites sometimes build up in such numbers that masses accumulate on the plants, and the silk webbing envelops the blooms. The eggs are spherical and nearly transparent.

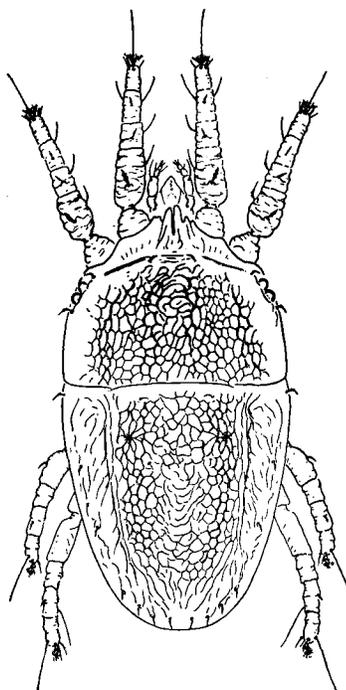
Good control of the two-spotted spider mite usually is obtained by commercial growers using parathion or TEPP. These materials are very poisonous to humans and must be used with extreme care.

A new material, 88-R or Aramite, is now available. It gives excellent control of the two-spotted spider mite and is considerably less toxic to humans than are the organic phosphates. The 15% wettable powder form of Aramite is used at a rate of one pound per 100 gallons of water—4.5 grams per gallon.

Aramite has not been used extensively on orchids, but has a good record of plant safety on such tender crops as roses and gardenias. A few cymbidiums have been tested experimentally, and these showed no injury to either the sprayed buds or open blooms. Considerable spotting of cymbidium flowers resulted when spikes of buds were sprayed with twice the recommended dosage.

Because Aramite has not been thoroughly tested on orchids, the grower should treat only a few plants first to satisfy himself that no injury will occur. The material should be weighed carefully, and the spray mix agitated to make sure the powder does not settle.

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Left: The omnivorous mite, adult female. Right: The phalaenopsis mite, adult female. Living specimens of these mites are scarcely visible to the naked eye.

