

# Insect, Mite and Disease Control on Geraniums

## INSECT AND MITE CONTROL

Geraniums may be attacked by a number of insect and mite pests that can cause leaf feeding injury, yellowing, or general disfigurement. See *Cornell Recommendations for Commercial Floriculture Crops, Part II* for descriptions of insect pests. The following pesticides are those which research and/or experience have indicated to be the most effective. As with all pesticides, read labels carefully and follow all instructions completely.

Aphids:	+aldicarb (Temik)*, +endosulfan (Thiodan), +dichlorvos (Vapona)
Mealybugs:	+aldicarb (Temik)*, malathion repeated applications are essential)
Plume moth:	+dichlorvos
Spider mites:	Pentac, hexakis (Vendex) +aldicarb (Temik)*
Whiteflies:	resmethrin (SBP-1382), +dichlorvos (Vapona)

\*This is a special New York State registration. A supplemental label must be in the user's possession for this use to be legal.  
+Restricted-use pesticide.



## DISEASE CONTROL

Prevent diseases by maintaining clean growing conditions. Steam sterilize at 180°F (82.5°C) for 30 minutes all clay pots, benches, soils, tools and other items used in production. Drench potting area with sodium hypochlorite (Clorox; 1 part Clorox, 9 parts water). Disinfect old plastic pots with 10 minute soak in Clorox (1:9).

**Virus Problems.** Viruses have been a problem for geranium production for many years. Currently some commercial propagators are beginning to meristem tip culture geraniums and index for viruses. Preliminary results indicate that there is a significant increase in vegetative vigor, flower production and in rootability. Commercial propagators who are using these virus indexing procedures also use culture indexing procedures. Geraniums supplied from these sources can be expected to be free of disease than geraniums from other sources.

Virus diseases such as mosaic, crinkles and chlorotic leaf spot are common and usually show up during cold weather. Discard severely infested plants. Virus diseases can occur on both seedlings and vegetatively propagated plants. Purchase cuttings from commercial propagators that provide virus-indexed plant material.

Seedling geraniums are not immune to viruses that infect geraniums. In fact, tobacco ringspot and tomato ringspot viruses which are the most prevalent viruses found in geraniums may be transmitted through seed.

**Botrytis** develops under conditions of high humidity

and poor air circulation. It is especially prevalent on plant debris so pick up all fallen leaves and petals. Removal of flowers helps reduce the incidence of **Botrytis**. Provide good air circulation by use of fans and tube ventilation systems. Thermodusting with Termil applied weekly helps control **Botrytis**.

**Pythium.** This stem disease producing a shiny black lesion (black leg) may also attack roots of the plant. Apply Lesan 35% WP as soil drench at ½ lb per 100 gal of water every 3 weeks after potting. Apply Lesan immediately upon mixing as exposure to light causes rapid deterioration of the material.

**Thielaviopsis** root rot. Attacks roots causing black discolored areas. Apply benomyl 50% WP (Benlate) as a soil drench 10 oz/100 gal water 10 days after potting as a preventive measure. **Thielaviopsis** is not a disease of major significance on geraniums except in the rooting of cuttings.

**Rhizoctonia** stem rot. Not a large problem with geraniums, the same benomyl drench as used for **Thielaviopsis** controls **Rhizoctonia**.

Bacterial blight caused by **Xanthomonas pelargonii** causes leaf spot, stem rot and dieback, as well as basal cutting rot. The bacteria are spread by splashing water and touch of humans working with plants. There is no production control other than using disease-free propagation material. Plants suspected of having bacterial blight should be burned.

**Oedema** is a physiological problem. It appears as tiny, water-soaked blisters on the underside of leaves. The blisters burst and then turn brown and corky. It usually occurs during dark, cloudy weather. Avoid over-watering as means of primary control. Good ventilation and air circulation are also helpful.

**Geranium Rust.** Can easily become a very serious, widespread disease. This is one disease that growers will not want to introduce into the greenhouse. The rust parasite can attack leaves, petioles, stipules and stems. On badly infected leaves the spots enlarge, coalesce, and then the entire leaf turns yellow, dries and drops prematurely. The earliest symptoms are small, chlorotic flecks on the upper leaf surface or small, whitish, blister-like spots on the lower leaf surface. The reddish-brown spores which are produced on the underside of leaves are spread most effectively by splashed water, but also can be transferred by air currents.

If you do not have the problem, you should plan to exclude the disease from your greenhouse. All incoming plants should be examined carefully and the entire shipment rejected if the true rust is found. If a single plant in a shipment is definitely infected, the chances are great that other plants have infections that are not yet visible.

If the disease is established in a greenhouse, diseased plants should be destroyed and the remainder spaced and sprayed at weekly intervals with Polyram, zineb or maneb. The fungicide, with sufficient wetting agent to insure complete wetting should be applied to both lower and upper leaf surfaces and to stems to protect against new infections. On stock plants, Plant Vax (75% WP) can be used at a rate of 16-24 oz/100 gal every two weeks. The systemic fungicidal action of Plant Vax is of benefit in controlling outbreaks of geranium rust, but it may cause some burning of geranium leaves and thus is best used on stock plants only.

*Cornell Geranium Guidelines*