

## Greenhouse Pest Monitoring Guidelines

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KEY PEST	MONITORING GUIDELINES	WHERE TO LOOK/COMMENTS
Melon Aphid ( <i>Aphis gossypii</i> )	Rely on plant inspection, not sticky cards. Scout weekly, beginning early in the cropping cycle. Aphids are 1/16 inch long with dark cornicles. Melon aphids are less likely to form winged adults than green peach aphids.	Inspect incoming plant material, on underside of leaves and stems. Most likely found along the plant stem then on the growing tip.
Green Peach Aphid ( <i>Myzus persicae</i> )	Monitor weekly. Rely on plant inspection, not sticky cards. Winged adults are found on cards when aphid colonies on weeds and crops become overcrowded.	Look on tips of new growth for 1/14 inch long green to pinkish aphids. Look for signs of aphid activity: shed white skins, honeydew, and presence of ants. Inspect and remove weeds.
Western Flower Thrips ( <i>Frankliniella occidentalis</i> )	Rely on sticky cards for population trends and to evaluate treatments. Use cards at floor level to detect overwintering thrips in Feb. Place cards at bench level, just above crop canopy in March before damage is observed.	Inspect incoming plant material for adults and larvae by tapping tender new growth and flowers over a white sheet of paper. Keep plants isolated for 4-5 days to detect thrips emerging from eggs and pupae. Inspect and control weeds, particularly white clover flowers outside greenhouses.
Whiteflies ( <i>Bemisia tabaci</i> , <i>Trialeurodes vaporariorum</i> )	Rely on plant inspection to detect immature stages, esp. on cuttings and young plants. Use indicator plants to assess treatment effectiveness esp. if using insect growth regulators. Use sticky cards to monitor adults.	Older (3rd and 4th) instar immatures are found on lowermost leaves, egg laying adults on the uppermost leaves. Inspect and remove weeds and "pet plants".
Fungus Gnats ( <i>Bradysia</i> sp.)  Shore flies ( <i>Scatella stagnalis</i> )	Use yellow sticky cards to monitor for adults. Place some cards flat on rim of pot and others, horizontally just above soil surface to capture adults. Use potato chunks (peeled side inserted in soil) to monitor larvae. Examine daily.	Favorable habitats include areas with standing pools of water, mud floors and weeds. Potting mixes high in organic matter tend to attract fungus gnat activity. Adult shore flies spread pathogens and thrive in the same wet conditions that are attractive to fungus gnats.
Two spotted mites ( <i>Tetranychus bimaculatas</i> )	Rely on plant inspection. Look for light stippling, discolored foliage, and webbing if high populations have developed.	Inspect incoming plants for mites, esp. on undersides of leaves by tapping leaves over a white sheet of paper. Monitor closely near hot, dry areas in greenhouse (ie. near steam pipes)

<p>Pythium root and stem rots (Pythium sp.)</p>	<p>Visually examine roots for cortex that “sloughs off” leaving central core. Healthy roots are generally white and firm; decayed roots may be water-soaked and/or darkened in appearance. Stem cankers are brown to black.</p>	<p>Monitor incoming plants and plants that may have been stressed by high salt levels, wounding, and transplant shock especially if fungus gnats or shore flies are present.</p>
<p>Rhizoctonia root rot, stem canker and web blight (Rhizoctonia solani)</p>	<p>Monitor seed flats of slow growing plants for post emergence damping off. Look for cobwebby growth encouraged by high humidity and wet foliage.</p>	<p>Unlike pythium, drier soil is more favorable for disease development and therefore it is found in the upper portion of the soil.</p>
<p>Botrytis Blight (Botrytis cineraria)</p>	<p>Monitor closely during favorable conditions, ie. cool temperatures, free moisture and presence of fuzzy gray to brown fungal spores. Flowers may fade early and then mat together.</p>	<p>Plants may be attacked at any stage but new tender growth, freshly injured tissues and senescing or dead tissues are preferred. Look for tan to brown dead areas, and gray fungal growth. Monitor areas with poor air circulation, and crowded plants.</p>
<p>Powdery Mildew (Erysiphe sp. Oidium sp.)</p>	<p>Look for white powdery growth esp. on upper leaf surface of roses, begonias, viola, phlox, chrysanthemums. On poinsettias, look for white or yellow spots on upper leaf surface.</p>	<p>Monitor closely in areas with poor air circulation, high humidity, or drafty places with more temperature fluctuations between day and night temperatures.</p>
<p>Bacterial Blight (Xanthomonas pelargonii)</p>	<p>Inspect geraniums more closely during warm weather. Look for isolated leaf wilting, V or wedge shaped yellowing between veins, and 1/8 round, brown spots. Look for vascular discoloration. Plants may wilt and die.</p>	<p>All geraniums are susceptible. Do not place ivy geraniums over geraniums. When infected, ivies often do not show any distinct symptoms, perhaps only loss of vigor, and will serve as inoculum source. Monitor areas closely with geraniums from different suppliers.</p>