Solution Sheet

Mites

The Problem

Thousands of mite species feed on and cause damage to plants grown in commercial production. Although mites are often grouped with insects, they are actually arachnids and more closely related to ticks and spiders. Adult mites have eight legs and piercing-sucking mouthparts used to suck fluids from host plants. In addition to direct damage, mites are capable of transmitting plant viruses making mite management critical in commercial production settings. The most common mites affecting ornamental plants in greenhouse and nurseries are spider mites.

What To Look For

Most mites are tiny and require a hand lens to be seen, making them difficult to detect in the absence of symptoms. Some mites, particularly eriophyid mites, are so small they require a microscope to be seen. Immature mites in the larvae stage have only 6 legs. The exception is eriophyid mites, which have four legs in all stages of development. Most mites favor hot and dry conditions and are capable of multiplying rapidly with generations occurring within one week. Nearly all plant species have at least one species of mite that will feed on them. Mites attack a wide range of plants including annuals, perennials, bulbs, vegetables, trees and shrubs. Mites can be introduced on infested plant material, but often, they are introduced into production facilities by the wind. Most mites damage plants by sucking cell contents from leaf tissue. The initial feeding damage appears as a stippling of tiny dots on the surface of affected leaves. Heavily infested leaves and branches may be covered in fine silken webbing (i.e. spider mites), but webbing may be minimal on some plants such as conifers or completely absent on some species. Severely affected leaves turn bronze to yellow in color and eventually drop off the plant.

The Solution

Frequent inspection of plant material is essential to prevent rapid buildup of mites in nurseries and greenhouses. This includes thorough inspection of new plant material for mites (and other pest and diseases) prior to moving them into production areas. Many weeds are susceptible hosts for mites and should be removed or controlled with herbicides. Remove weeds and escaped plants under benches, outside greenhouses, or adjacent to nursery stock to reduce the likelihood of mite infestations in growing areas. Also, minimize plant disposal sites. Preventative insecticide applications are recommended. Kontos® and Savate® can be used on all stages of crop development for effective control of mites. Kontos is most effective when used preventatively or when populations are first detected. Savate provides knockdown and residual control of all developmental stages of mites. Refer to product labels for additional information.

Example Rotation for Mite Control in Ornamental Production

Treatment	IRAC Group	Activity	REI*	Rate/100 Gallons	Application Intervals
Kontos®	23	Systemic	24 hrs	foliar 1.7 fl. oz. - 3.4 fl. oz.	14 - 28 days
			None	drench see label	28 + days
Akari®	21A	Contact	12 hrs	foliar 16 - 32 fl. oz.	14 days; do not exceed 2 applications per crop
Savate®	23	Translaminar	12 hrs	foliar 1 fl. oz. - 4 fl. oz.	14 - 28 days; do not exceed 3 applications per crop
Sultan®	25	Contact	12 hrs	foliar 13.7 fl. oz.	14 days; do not exceed 2 applications per crop

Kontos®

Kontos is a systemic insecticide from the tetronic acid class of chemistry. Kontos can be applied as a foliar spray or drench and controls rust, spider and tarsonemid mites. Kontos is both xylem- and phloem-active, meaning that because of the systemic activity the product moves upward and downward in treated plants. There is no known cross resistance of Kontos with other insecticide modes of action, making it an excellent part of a resistance management program. Kontos is a suspension concentrate (SC) formulation for use on ornamental plants in greenhouses and nurseries, including non-bearing fruit and nut trees. See the label for plant restrictions.

Savate®

Savate is highly effective against mites. A member of the tetronic acid class of chemistry, Savate affects all development stages and controls eriophyid, spider, tarsonemid and tenuipalpid mites. Savate is translaminar and moves readily through the leaf tissue providing extended residual control of mites (30+ days). Savate is a suspension concentrate (SC) is labeled for use on ornamentals grown in the greenhouse or nursery. For best results, apply before a damaging population of mites is established. See the label for plant restrictions.

Faded and discolored gerbera daisy flower from spider mite feeding.

Fine silken webbing containing adult spider mites.