

Spider Mites

Solution Sheet



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. Spider mites are the most common mites affecting ornamental plants in greenhouses and nurseries. Although most spider mites favor hot and dry conditions, a few, like spruce spider mite, Lewis mite and southern red mite prefer cooler conditions in the spring and fall. Adult spider mites have eight legs and piercing-sucking mouthparts used to suck fluids from host plants. All mites are capable of multiplying rapidly with generations occurring within one week. In addition to direct damage, mites are capable of transmitting plant viruses making mite management critical in commercial production settings.

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. 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 (Fig. 1), 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.



Figure 1. Webbing provides spider mites protection from predators and pesticides. Photo by Envu.

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. For spider mite prevention just before weather turns hot and dry, or for a quick knock down, start with Floramite®. Follow with Savate®, a translaminar miticide that translocates to hard-to-reach leaf undersides and whorls. Continue the rotation between Floramite®, Savate®, Akari 5SC® and/or Sultan® as needed. All four products chosen for this rotation kill the egg, nymph and adult stages of spider mites. Both Floramite and Savate provide quick knockdown and residual control of all developmental stages of spider mites. Substitute Kontos® in the event mite infestations co-occur with sucking pests, like aphids, scale and mealybugs, or when longer periods of control are needed after a drench application.

Example Rotation for Spider Mite Control in Ornamental Production

Timing	Treatment	IRAC Group	Activity	REI*	Rate/100 Gallons	Application Intervals
1	Floramite®	20D	Contact	12 h	foliar 4-8 fl oz	28 days; do not exceed 2 applications per crop.
2	Savate®	23	Translaminar	12 h	foliar 1-4 fl. oz.	Reactive. Apply when spider mite populations are high; 14 - 28 days. Will also control whitefly infestations.
	OR					
	Kontos®	23	Systemic	24 hrs	foliar 1.7 fl. oz. – 3.4 fl. oz.	Preventative. 14 - 28 days. To control mites and sucking pests like aphids, scale, and mealybugs.
				None	drench see label	28 + days
3	Akari 5SC	21A	Contact	12 h	foliar 16-24 fl. oz.	Do not make more than 2 applications per crop.
4	Sultan®	25	Contact	12 h	foliar 13.7 fl. oz.	14 days; do not exceed 2 applications per crop

Floramite®

Floramite is highly effective against mites while soft on most natural enemies and beneficial insects. Floramite is a contact miticide that is effective against all life stages of spider mites. For best results, apply before a damaging population of mites is established.

Savate®

Savate is highly effective against mites. A member of the tetrionic 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.

Kontos®

Kontos is a systemic insecticide from the tetrionic 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.