



Whiteflies IPM Program

Whiteflies can take on many different looks and appearances as they grow from egg to adult. Eggs are laid by females on the underside of the leaves. Within two weeks, the eggs hatch and a nymph emerges, at this point it doesn't have any wings. Actually at this stage the whitefly nymphs look more like a scale insect. These lightly colored nymphs are flat and circular to oval in shape. Still located on the underside of the leaves, the whitefly nymph usually crawls around for a few hours before it settles down and starts to feed. It will remain in this place until it pupates. Whiteflies pierce the leaf tissue, they insert a feeding stylet, then they suck out the liquid, depriving plants of necessary nutrients. A whitefly remains a nymph for a couple days to a couple of weeks depending on environmental conditions, it then pupates and becomes an adult. The adults now have two sets of wings. Most species are white in color but some species can be pink to tan in color. Some species can grow up to 1/16" in length.

In order to scout for these pests, growers need to look at the undersides of their leaves. Larger populations of whiteflies can actually cause yellow stippling on the upperside of the leaves, which can be confused with spider mite or lacebug damage. Whiteflies excrete honeydew when they feed. This honeydew serves as a breeding ground for sooty mold. Growers should look for black mold growing on the leaf surfaces.

SPRAY OPTIONS

- Avid 0.15 EC – 8 oz/100 gals – Class 6 MOA Labeled for use in greenhouse, nursery, and landscape; Soft on most beneficial insects. Contact activity.
- Flagship 25 WG – 4-8.5 oz/100 gals – Class 4A MOA Labeled for use in greenhouse and nursery (Meridian for landscapes); Soft on most beneficial insects, never spray open blooms as this can be detrimental to bees and other pollinators. Also available in granular formulation for applications to growing medias. Systemic and translaminar activity.
- Endeavor – 2.5-5.0 oz/100 gals – Class 9B MOA Labeled for use in the greenhouse , nursery, landscape and interiorscapes; Soft on most beneficial insects; Addition of a Harrells non ionic or organosilicone based surfactant can improve coverage.

- Ultra Pure Oil – 1 gal/100 gals – Class NA MOA Labeled for use in greenhouse and nursery and some landscape settings; Soft on most beneficial insects; Do not spray plants that are in bloom; Do not spray plants in extreme temperatures (below 32 & above 95); Plants should be free from water stress during application, Always test oil on small scale before applying to the entire crop
- Distance IGR – 6-8 oz/100 gals – Class 7D MOA Labeled for use in greenhouse, nursery, landscape and interiorscape. Soft on most beneficial insects. Systemic and translaminar activity.
- Aria – 2.1 oz/100 gals – Class 9C MOA Labeled for use in greenhouse, nursery, landscape and interiorscape setting. Soft on most beneficial insects
- Pyreth-It – 12-24 oz/100 gals – Class 3A MOA Labeled for use in greenhouse, nursery, landscape and interiorscape. Use only under heavy infestations and as a last defense in an IPM program. Can be detrimental to beneficial insects.

BIOLOGICAL CONTROL OPTIONS

- Encarine™ f biological control agent contains the hymenopterous parasitic wasp, Encarsia formosa. It attacks the third and fourth larval stage of greenhouse whitefly, Trialeurodes vaporariorum. Prefers relatively cool conditions making it a great release option in spring or fall.
- Eretline™ e biological control agent contains the hymenopterous parasitic wasp, Eretmocerus eremicus. It attacks the second larval stage of greenhouse whitefly, Trialeurodes vaporariorum, and silverleaf/sweetpotato whitefly, Bemisia tabaci. Prefers warmer temperatures, up to high 80sF which makes this a great late spring or late summer release option.
- Encarine™ mix biological control agent mix contains the hymenopterous parasites, Encarsia formosa and Eretmocerus eremicus. It controls the larvae of greenhouse whitefly, Trialeurodes vaporariorum, and silverleaf/sweetpotato whitefly, Bemisia tabaci.
- Swirskiline™ as biological control agent contains the predatory mite, Amblyseius swirskii. It is mainly used for control of whiteflies and thrips, but it will provide some reduction in other small pest species. Should have pollen present for mites to ensure quick establishment. Prefers cool temperatures, up to 68F.

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