Bug-Wise

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Spider Mites on Ornamental Plants: Several different species of spider mites occur on ornamental plants in the home landscape. Southern red mites, which are common pests of azaleas, camellias, hollies, and other broadleaved evergreens, prefer cooler weather and are more active during spring and fall. Two spotted spider mites and carmine mites prefer warmer weather and occur on a wide range of ornamental and vegetable plants. Spruce spider mites, and other closely related species, attack junipers and other needle-bearing evergreens.

Spider mites injure plants by tearing into plant tissue with their sharp chelicera and sucking up the resulting plant sap. This results in tiny areas of dead tissue, with most feeding occurring on the undersides of leaves. Because they are so small, the injury caused by a single mite is inconsequential. However, under favorable conditions, spider mites can quickly build to very high numbers and heavy infestations can cause severe injury and even death of infested plants. Under optimum conditions some species of mites can complete a generation in as little as seven to ten days.

Stippling of leaves or needles is usually the first observed symptom of spider mite infestation. This stippling is due to the pattern of small light colored spots that form at individual feeding sites. Heavily infested leaves become bronze or reddened, and eventually turn brown and die or drop from the plant. In addition, heavy infestations of most species produce a fine webbing over infested plant parts, and it is because of this webbing that this group of mites is called 'spider' mites.

While spider mite outbreaks occur naturally, especially on susceptible plant species, as a result of favorable environmental conditions, they can also be easily flared, or artificially created. Hot, dry weather is conducive to the buildup of two spotted spider mites and carmine mites, and dusty conditions also seem to favor mite outbreaks. Spider mite populations are often kept in check by a naturally occurring fungal disease that is more likely to occur under moist, humid conditions, and there are also predatory species of mites, as well as mite-feeding insects, that help keep mite populations in check.

Spraying with certain insecticides can actually flare, or trigger, mite outbreaks. In some cases this is because the insecticide is more toxic to the naturally occurring predatory mites and other predators than it is to the plant-feeding mites. However, in other cases the insecticide seems to actually stimulate increased reproduction in the mites. Carbaryl (Sevin), acephate (Orthene) and most of the pyrethroids (permethrin, cyfluthrin, cyhalothrin, etc) are examples of insecticides that are especially prone to flare spider mite outbreaks. Imidacloprid (Bayer Advanced Garden Tree and Shrub Insect Control) also has a tendency to flare spider mites, even when applied as a soil drench. Consequently, gardeners should avoid using these treatments, especially on mite prone species, unless absolutely necessary.

Currently there are several products containing permethrin or other pyrethroids that are sold for application to shrubs and bushes to control adult mosquitoes. While adult mosquitoes do rest in these types of habitats during the day and may be controlled by such sprays, these types of treatments have the potential to flare outbreaks of spider mites, as well as scale insects.

One important point relative to spider mite management is to keep plants properly fertilized and well watered. Plants suffering from potassium deficiency or plants receiving excessive amounts of nitrogen are more prone to mite infestations. Also, plants suffering from drought stress are more likely to be infested and are less able to tolerate mite injury.

One non-chemical control that can be effective is to spray mite infested foliage with a stream of water from the garden hose. When directed to the undersides of the leaves, where most mites occur, such a spray can physically dislodge many mites. This also has the effect of removing dust from the leaves and increasing moisture and humidity around the mites, which increases the potential for disease outbreaks in the mite population. Of course, wetting foliage in this manner also increases the potential for plant disease.

Although there are a large number of effective miticides available for use in commercial greenhouse and nursery situations, **relatively few effective options for controlling spider mites are available to homeowners.** Some of the mite treatments that are available to homeowners are listed in the following table. When treating spider mites it is usually important to make at least two successive applications, four to five days apart. This is because few of the miticides available to homeowners are effective against eggs. Thus, the second treatment is necessary in order to kill young, recently hatched mites before they are mature enough to lay eggs themselves.

Paraffinic oils (Horticultural oils) are very effective in controlling any spider mites that they physically contact, but thorough coverage of the undersides of leaves is necessary in order to obtain adequate control. This is also true for insecticidal soaps. Be sure to read and follow label directions carefully when using oil sprays, because misuse can result in plant injury. In most cases paraffinic oils should not be re-applied at a short time interval. Insecticides, such as Malathion also will control spider mites on contact, but it is especially important to make two successive sprays when attempting to use malathion to control spider mites.

Although most pyrethroid tend to flare spider mites, bifenthrin is actually effective against mites, but still requires making two successive sprays. Ortho Systemic Insect Killer is a combination of acephate + fenbutatin oxide. As has been mentioned previously, acephate usually flares spider mites when applied alone, but the fenbutatin oxide is a specific miticide, which presumably is included to prevent mite flaring. However, because this product contains a specific miticide it is one of the more effective spider mite treatments currently available to homeowners. Be sure to read and follow the label carefully because acephate will cause injury to some ornamental plants.

Miticides For Use by Homeowners on Ornamental Plants

Miticide	Brand Name (one example)
Fenbutatin oxide (+ acephate)	Ortho Systemic Insect Killer
Paraffinic oil	Fertilome Dormant Spray & Summer Oil Spray
Potassium salts of fatty acids	Safer Insect Killing Soap
Extract of Neem Oil	Garden Safe Fungicide, Insecticide, and Miticide
Bifenthrin	Ortho Rose & Flower Insect Killer RTS
Malathion	Malathion 50 Insect Spray

The brand names mentioned in the publication are used as examples only. No endorsement of these products is intended. Other appropriately labeled products containing similar active ingredients should provide similar levels of control. Always read and follow the insecticide label.

Because licensed commercial applicators have access to several more effective specific miticides, homeowners who experience difficulty in obtaining mite control or who experience heavy mite infestations on large plantings or high value plants may wish to consider hiring a commercial applicator. Abamectin (Avid) and bifenzate (Floramite) are examples of two specific miticides that are labeled for application by licensed commercial applicators in home landscapes. However, even with these specific miticides, two successive treatments will usually be needed to obtain effective control.

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