

TWO-SPOTTED SPIDER MITE

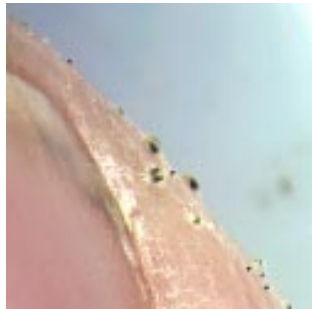
Minnesota Department of Agriculture * Biological Control Program Fact Sheet

Description

Barely visible to the unaided eye, mature two-spotted spider mites bear the characteristic black spots that are their namesake. Adults are straw yellow; nymphs are merely smaller versions of adults and range from pale yellow to pale yellow-green. Two-spotted spider mites reproduce extremely fast and can overwhelm plants by sheer numbers. Leaves of plants infested with spider mites show a distinct spotted effect called stippling. Spider mites cause stippling because they feed on plant cells one at a time. Like their name suggests, spider mites can spin webbing; heavily infested plants are typically covered with the fine webbing they use to disperse from old plants to fresh ones.



Two-spotted spider mite adult



Two-spotted spider mites on fingertip

Identification

Adult two-spotted spider mites (*Tetranychus urticae*) are straw yellow colored and can be identified by their characteristic two black spots. Plants infested with spider mites show a distinct spotted effect on leaves called stippling. Heavily infested plants show severe stippling and will likely be covered with fine webbing. If unsure whether leaves have webbing or not, gently mist leaves and if webbing is present it will show like dew sticks to spider webs.



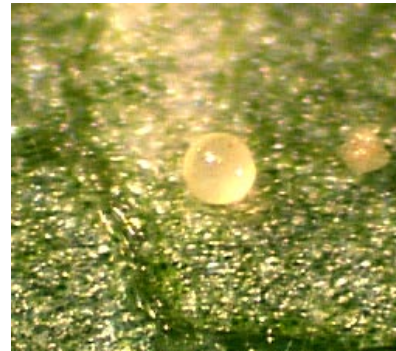
Light stippling



Heavy stippling

Life Cycle

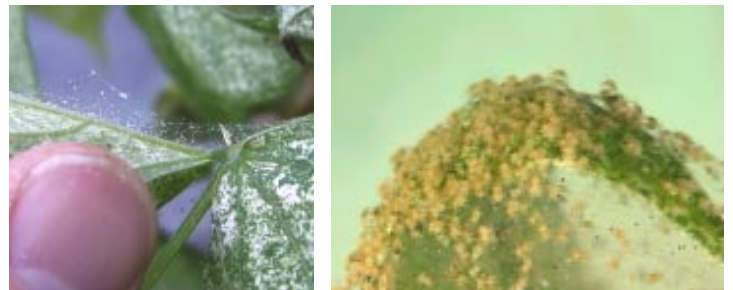
Spider mites are known for their ability to reproduce quickly. Adult two-spotted spider mite females can lay hundreds of eggs in a lifetime. Eggs hatch in 2-4 days; nymphs develop in 2-4 days. Adults can live up to 21 days and respond well to hot, dry environments.



Two-spotted spider mite egg

Damage

Spider mites feed on plants one cell at a time. Small numbers of spider mites cause leaf stippling. Left unchecked, spider mite infestations build up quickly in warm temperatures and can destroy plants when infestations are not detected early enough. Thin-leaved plants are more susceptible to spider mites than plants with thick or waxy leaves.



Top: Two-spotted spider mites spin webbing that helps them travel from plant to plant. *Bottom:* Two-spotted spider mites cluster at the end of a bush bean sprout.

Control Strategies

Crop Management. Inspect recently purchased plants by checking leaves for stippling, adult spider mites, eggs, and/or webbing. Dispose of infested plant material immediately. Remove weeds near vents and around greenhouse that could harbor spider mites. Avoid over fertilizing plants with nitrogen.

Monitor for pests. Using a magnifying glass, check leaves for stippling, adults, eggs, and webbing at least twice a week.



Physical and Chemical Controls. Spraying plants for spider mite control may provide some temporary relief, but is not recommended as spider mites can reproduce quickly. Insecticidal soaps and/or horticultural oils can be helpful when not phytotoxic. Pesticides can provide short-term control, but spider mites can develop resistance so they are not recommended as a long-term solution. When possible, keep temperatures below 75 degrees Fahrenheit. If pesticides are used, waiting at least two weeks before releasing biological control agents is advised.

Biological Control. Ongoing releases of biological control agents can help prevent spider mite outbreaks and reduce use of and resistance to pesticides. As a general rule, making several small releases over time rather than one single release is recommended for best results.

Predators. There are several species of predator mites and insects available for spider mite control. Some species are better adapted for warmer, drier environments; other species survive best in cooler temperatures with higher humidity. Contact a supplier of biological control organisms for more information about how to choose the right biological control agents for your needs.

Phytoseiulus persimilis. Known for quick control of spider mites, *P. persimilis* reproduces faster than spider mites and actively seeks out spider mite nymphs and adults. Prefers 60-85 degrees F 55-65% RH.

Neoseiulus californicus. Although not as quick-acting as *P. persimilis*, *N. californicus* can survive longer without prey. Recommended for all kinds of indoor and greenhouse situations. Prefers various temperature and humidity levels.

Stethorus punctillum. These tiny beetles are gaining popularity as reliable spider mite predators. They thrive in a broad range of temperature and humidity levels.

Orius insidiosus. Also known as minute pirate bugs, *O. insidiosus* is a tenacious general predator well adapted for dry and warm weather, the kind of weather spider mites thrive in. Prefers 60-80 degrees F/40-70% RH.



Predator mite



Minute pirate bug

For more information about plant pests or to obtain additional copies of this fact sheet, visit at <http://www.mda.state.mn.us/biocon/plantscape>