

AN IPM PROGRAM FOR SPIDER MITES ON CONIFER PLANTS

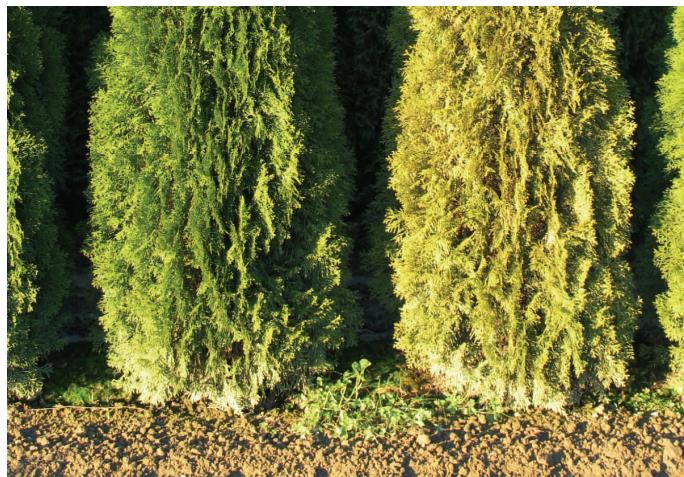
FOR LANDSCAPE PEST MANAGERS

KEY POINTS

- Spider mites found on conifer plants are usually the spruce spider mites (*Oligonychus ununguis*).
- It is a mite of warm dry weather. It is most active in spring and fall and almost inactive during summer.
- Most plants can tolerate a low level of spider mites without showing visible damage.
- A well-designed IPM program can effectively manage conifer spider mites with minimal pesticide use.

All conifers are susceptible to damage by spider mites, but arborvitae (cedars) and junipers are most commonly affected. The plants appear unhealthy with pale needle colour, sometimes covered in webbing.

The damage usually starts on the inside, lower part of the plant, or on the side most exposed to dusty conditions. Landscape managers can successfully manage this pest with low-risk pesticides such as dormant oil and insecticidal soap. Avoid using broad spectrum insecticides, which often result in a spider mite outbreak.



The plant to the left appears in good condition, while the plant to the right shows typical damage by spider mites.



Close-up of damaged needles on a cedar (or arborvitae). Feeding by spider mites causes discoloration of the needles.

KNOW YOUR SPIDER MITES

The spruce spider mite is similar to a regular house spider, very small size but still visible to the naked eye. It has 8 legs and 2 body parts: the head is opaque white, the abdomen is dark green or red brown.

The spruce spider mite overwinters in the egg stage which start to hatch between mid April and early May. It prefers warm temperatures with optimum development between 20 and 27°C. Thus, mite numbers can increase rapidly in May and June but damage may not be visible until summer.

Healthy plants can better tolerate low numbers of spruce spider mites. Provide proper pruning and fertilization to create strong, healthy plants which remain visually-pleasing in the landscape.

Designing an IPM program for spruce spider mites

The following table presents a sequence of actions at key times of the year. The emphasis is on plant health and rational pest management. Use it to develop an IPM program for your sites.

Season (Phenological event)	Approximate time of year	Action
Winter (dormant)	November to March	Use a magnifying glass to look for winter eggs (round shape, scarlet red colour). Collect samples 15-cm long from inside the plant, about 20 terminals per planting. Expect damage in the spring if the average number of eggs is 10 or more per terminal.
Late winter (before bud break)	Mid to late April	Apply dormant oil on plants where winter eggs are found during sampling. Use high water volume and ensure complete coverage of the inside foliage. Do not apply on plants under stress or within 24 hours of freezing temperatures.
Spring (early plant growth)	May	Monitor for young spider mites hatching from winter eggs. Attach a white piece of paper to a clipboard, tap a branch on it for 2 or 3 times. Wait a few seconds. If dust particles start to move, these are likely spider mites.
Spring (early plant growth)	May	Apply insecticidal soap where monitoring indicates young spider mites are present. Use 2% concentration, apply in high volume of water, ensure complete coverage. Soap works by contact only. A repeat application may be necessary in 7 to 14 days.
Early summer (active plant growth)	June to early July	Wash plants with a strong jet of water to dislodge debris. This is especially important for plants close to roads and dry fields. Spider mite outbreaks often start on dusty plants, where they hide from predators.
Early summer (active plant growth)	June to early July	Manage severe spider mite problems with bifenazate, acequinocyl or fenbutatin oxide. These miticides are safer to predatory mites and beneficial insects. Spray plants showing damage, in high profile areas or after a customer complaint.
Late summer (active plant growth)	Late August to late September	Monitor for young spider mites hatching from summer eggs. Use a strong jet of water or insecticidal soap to wash the plants and control mites. Effective control of spider mites in fall will remove the need for dormant oil in spring.
Late summer (end of season)	October to November	Evaluate the IPM program for spider mites on properties where there was a problem. A spray program should eliminate this problem in a landscape within 2 years. Avoid using broad-spectrum insecticides, which will trigger a spider mite outbreak.

Reduced-risk pesticide products registered for spruce spider mites on ornamentals (as of January 2014)

Product name	Active ingredient	Label	Rate in water	Notes
Dormant oil (various products)	mineral oil	Evergreens	1 to 2 L / 100 L	Very low toxicity Safe to predaceous mites
Safer's Soap Opal Soap Neudosan	potassium salts of fatty acids	Shrubs, Trees Ornamental trees	2 L / 100 L	Fast acting but no residual Safe to beneficials Do not spray on plants under stress
Purespray Oil (summer oil)	Mineral oil	Ornamental plants	2 L / 100 L	Label for summer spray Low toxicity, safe to beneficials
Floramite SC	bifenazate	Conifers	33 to 62.5 ml / 100 L	Fast acting Relatively safe to predator mites
Kanemite 15SC	acequinocyl	Field ornamentals	42 to 92 ml / 100 L	Effective against motile stages Relatively safe to predator mites
Vendex WP	fenbutatin oxide	Ornamental plants	50 to 100 g / 100 L	Slow acting on younger stages Relatively safe to predator mites