

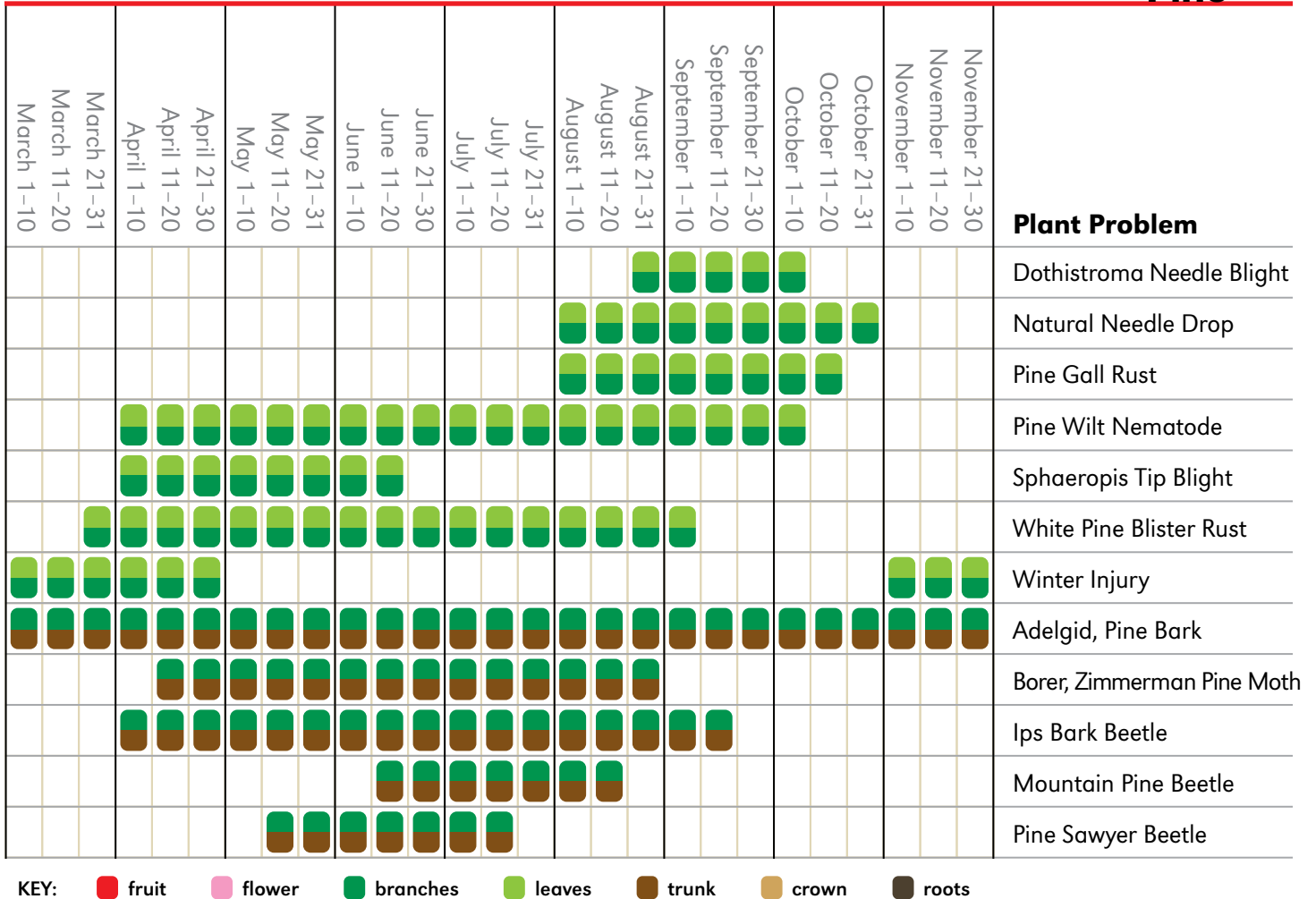
# Pine



Plant Problem	November 21-30	November 11-20	November 1-10	October 21-31	October 11-20	October 1-10	September 21-30	September 11-20	September 1-10	August 21-31	August 11-20	August 1-10	July 21-31	July 11-20	July 1-10	June 21-30	June 11-20	June 1-10	May 21-31	May 11-20	May 1-10	April 21-30	April 11-20	April 1-10	March 21-31	March 11-20	March 1-10	
European Pine Shoot Moth																												
Jack Pine Budworm																												
Pine Pitch Nodulemaker																												
Pine Needle Sheathminer																												
Pine Shoot Beetle																												
Pine Tip Moth																												
Scale, Pine Tortoise																												
Spittlebugs																												
Weevil, Pales (Adults)																												
Weevil, White Pine (Adults)																												
Aphid, Conifer ( <i>Cinara</i> spp.)																												
Brown Spot Needle Blight																												
Cyclaneusma Needle Cast																												
Lophodermium Needle Cast																												
Sawfly, European Pine																												
Scale, Pine Needle																												
Spider Mite, Spruce																												

KEY: ■ fruit ■ flower ■ branches ■ leaves ■ trunk ■ crown ■ roots

# Pine



## Plant Problem

## Signs/Symptoms

## Treatment

### European Pine Shoot Moth



In late June look for browning needles. Later, larvae bore into tips, causing them to become swollen and gummy. Dead or crooked shoots result from larvae boring deeply into them.

Use pheromone traps in June to detect adults to properly time insecticidal treatment. For early larval infestations, when young larvae feed at bases of needles, apply sprays of a microbial insecticide. Prune out damaged shoots (infested with larvae) before May and destroy them.

# Pine

## Plant Problem

## Signs/Symptoms

## Treatment

### *Jack Pine Budworm*



Older jack pines are preferred. In May, young larvae feed in male flowers; then terminal buds become webbed with severed needles and frass. Branches become severely defoliated.

Maintain healthy, vigorous trees in the landscape; cull out overly mature jack pines. Monitor moths in mid summer with pheromone traps and treat foliage to discourage egg-laying. Treat terminals in May with a microbial insecticide when young larvae are feeding on male flowers.

### *Pine Pitch Nodulemaker*



Large, gummy swellings at branch tips are evident in autumn through spring. A mature, pinkish larva can be found in nodules in late spring. Tip damage causes lateral shoot growth.

Moths emerge from old nodules in late May and deposit eggs on new, expanding shoots. Control moths, or newly hatched larvae in June before they bore into tips with a microbial insecticide or contact insecticide. Infestations often subside on their own, due to natural enemies.

### *Pine Needle Sheathminer*



In June, filmy webbing and frass is evident at needle bases, and larvae tunnel into sheaths. Later, larvae nest outside and sever needles as they feed, leaving a mass of dead needles.

Larvae pupate in nests in late spring, and moths emerge in July and deposit eggs. Treat tips with an insecticide to kill moths. Newly hatched larvae can be treated with a microbial insecticide or contact insecticide. In August, larvae bore into needles and overwinter until spring.

### *Pine Shoot Beetle*



This blackish bark beetle is active in early spring and infests recently cut pine stumps, logs, or trunks of weakened trees. Next generation adults emerge in June and tunnel through shoots.

Before early spring, destroy stumps, or grind them down and cover with soil, or treat with a residual insecticide. From June to September, remove infested shoots or tips. In June and July, treat shoots and foliage with an insecticide to discourage attack by beetles.

### *Pine Tip Moth—Nantucket, Western*



In spring, tips have severed, brown needles and webbing at bases of needle sheaths. Older larvae feed in buds and bore into shoots. Terminals die and buds become dry and crumbly.

There may be two to three generations each season, with moths emerging every six weeks. Use pheromone traps in April and thereafter to detect adults to time insecticidal treatment. For early infestations, when young larvae feed on needles, apply sprays of a microbial insecticide.

## Plant Problem

## Signs/Symptoms

## Treatment

### *Scale, Pine Tortoise*



Red-brown hemispherical scales with black stripes are clustered on twigs. Foliage becomes yellow and branch dieback may occur. Honeydew and sooty mold cover affected branches.

Apply an insecticide, insecticidal soap or horticultural oil spray in early summer when newly hatched nymphs ("crawlers") have emerged from beneath adult female scales. A dormant oil spray before bud-break helps control overwintering nymphs.

### *Spittlebugs*



In May and June, shiny spittle-like masses develop mainly on new growth; a brown nymph is embedded in each. Dark brown adults feed on foliage through the summer.

Control is rarely needed, although the nymphal spittle masses can be a nuisance. Natural enemies greatly help to reduce spittlebug numbers. Dislodge spittle masses with a strong jet of water. In cases where foliage is yellowing, thoroughly apply an insecticide.

### *Weevil, Pales (Adults)*



Small holes chewed in the bark of trunks, branches or twigs, which become covered with hardened resin. Seedling trees die; larger trees show flagging at branch tips.

Remove stumps, or grind down and cover them with soil as they are primary sites for weevil infestation from which adults emerge and attack trees. Spray trees in spring when adults are present to prevent injury. To monitor, look for fresh resin, or use sticky traps.

### *Weevil, White Pine (Adults)*



Adults are one-quarter inch long and mottled red-brown with two white spots on the back. Terminals and the leader are riddled full of holes; leaders develop shepherd's crook.

Look for adults in mid spring, or monitor with sticky traps. Spray an insecticide to control adults, and again in late summer to kill the new generation of adults. In late spring, prune out and destroy dead leaders as soon as discovered, as they are infested with larvae.

### *Aphid, Conifer (Cinara spp.)*



Large grayish aphids with spots on the body and long legs. They feed in terminals, and heavy infestations cause needles to turn yellow. Lady beetles and other natural enemies may be present.

Conifer aphids thrive in the spring and autumn; by summer, colonies decline from attack by natural enemies. Treat heavy infestations with an insecticidal soap, neem oil, or horticultural oil spray. A dormant oil spray controls black eggs that are overwintering on terminal needles.

# Pine

## Plant Problem

## Signs/Symptoms

## Treatment

### *Brown Spot Needle Blight*



Reddish brown, resin-soaked lesions on needles. Spotted needles turn yellow; eventually needles turn brown from the tips back.

Sanitation. Avoid shearing during wet weather. Plant resistant varieties. Apply foliar fungicide when new needles are nearly half grown.

### *Cyclaneusma Needle Cast*



Light green to yellow lesions on needles. Lesions develop into brown bands; needles turn yellow and then brown. Fruiting bodies develop on the brown bands. Mature fruiting bodies expose a waxy, white to yellowish surface.

Improve air circulation. Avoid prolonged periods of needle wetness. Avoid water stress. Avoid nutrient deficiencies.

### *Lophodermium Needle Cast*



Small pale lesions, which turn yellow and then a reddish-brown. Yellow margins. Lesions enlarge to give the needle a mottled appearance; needles brown and die. Premature needle drop.

Improve air circulation. Avoid prolonged periods of needle wetness. Avoid water stress. Avoid nutrient deficiencies. Apply foliar fungicide in August and repeat according to label instructions.

### *Sawfly, European Pine*



Late winter inspection shows terminal needles with a series of eggs embedded in them. Old needles on branches are completely devoured by masses of olive-green, striped caterpillars.

Inspect terminals from late April into May for newly hatched, black larvae clustered together and brown, withered needles. Spray infestations vigorously with an insecticidal soap, neem oil or an insecticide. Dislodge larvae with a strong blast of water or by sharply striking branches.

### *Scale, Pine Needle*



Small, flat, white, oblong scale coverings attached to needles, often in clusters. They look like splotches of white paint. Needles become yellow and drop off.

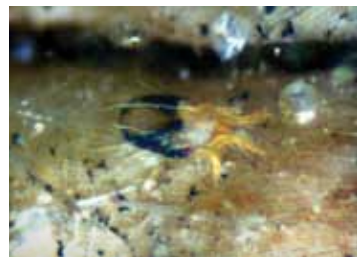
There are two generations per season. Check for crawlers in May and July and spray foliage with an insecticidal soap, neem oil, a horticultural spray oil or an insecticide. A dormant season oil spray helps to smother eggs beneath scales.

## Plant Problem

## Signs/Symptoms

## Treatment

### *Spider Mite, Spruce*



Stippling of needles becomes evident on older foliage in early spring. By early summer, infested portions turn yellow or brown and appear dried out. Dirty, fine webbing is evident.

Monitor regularly for early damage in April. Treat infestations with vigorous sprays of an insecticidal soap or an insecticide/miticide. Thorough coverage is important, and re-treatment is often necessary. By mid summer, infestations naturally decline; do not treat.

### *Dothistroma Needle Blight*



Deep-green bands. Yellow and tan lesions on needle. Bands and lesions turn brown to reddish brown; ends of needles turn light green, tan and brown; base of needle remains green. Needles may develop extensive browning.

Sanitation. Avoid shearing during wet weather. Plant resistant varieties. Apply foliar fungicide when needles near full elongation and repeat applications according to label instructions.

### *Natural Needle Drop*



The oldest, inner needles turn yellow to brown and drop.

Avoid water stress.

### *Pine Gall Rust*



Conspicuous, perennial, globose galls on stems. From May to June, powdery orange-yellow spores are produced on the galls. Very young galls are sometimes spindle shaped rather than spherical.

Remove infected plants or prune out affected areas.

### *Pine Wilt Nematode*



Yellowing and then browning of needles; brown needles remain attached. Little resin flow in dead material. Trees often decline quickly.

Remove infected tree.

# Pine

## Plant Problem

## Signs/Symptoms

## Treatment

### *Sphaeropsis (Diplodia) Tip Blight*



Current year shoots are stunted, brown and die. Infected tissue is resin soaked; affected shoots become bent or curled. Black fruiting bodies appear at the base of dead needles, shoot tissue and on pine cone scales.

Sanitation. Prune out affected areas. Avoid shearing during wet weather. Apply foliar fungicide when needles are 1/4 elongated and repeat applications according to label instructions.

### *White Pine Blister Rust*



Small, yellow spots on needles. Yellow blisters develop on the bark of infected twigs.

Prune out affected plant material.

### *Winter Injury*



Foliage is reddish-brown with damage at terminal ends of foliage (commonly needles). Damage mostly on outer portion of the branches and often more severe on the side of the plant facing the wind.

Prune out affected area.

### *Adelgid, Pine Bark*



The trunk is covered with woolly material in which aphids are feeding and reproducing. White pine is the preferred host. Young trees can become stunted, weakened and die.

Monitor trees for infestations from April through early autumn. Use a dormant oil spray in early spring to smother overwintering aphids hiding in bark crevices. Spray active infestations during the season with an insecticide and enough pressure to penetrate the woolly material.

### *Borer, Zimmerman Pine Moth*



Yellowish pitch accumulates and hardens at branch junctions or on the trunk where larvae are feeding in wood. Branches easily break at junctions. Trees become weakened and decline.

The brown and white, speckled moths emerge in late summer and deposit eggs on hosts. Protect trees with an insecticidal spray after they are detected with a sticky trap. Treat bark in mid-August through September, or again in April to kill young larvae that overwinter on the bark.

## Plant Problem

## Signs/Symptoms

## Treatment

### *Ips Bark Beetles*



Tiny, round holes through bark, with reddish dust evident. Bark is loose, and galleries are beneath. Tops of older trees show dieback which becomes progressive over a few years.

Ips bark beetles generally attack trees that are overly mature or under stress. Injury is progressive and can be curtailed if measures are taken to assure optimal health. Pruned branches and cut wood should be immediately removed. Insecticide treatment is usually not practical.

### *Mountain Pine Beetle*



Mature trees in dense stands are preferred. Adults boring into trees produce popcorn-like resinous masses and dusty frass on bark. Galleries are evident beneath bark.

Thin out stands and plant diverse tree species of varying age. Reduce heat and moisture stress. Adults emerge from previously infested trees from July into August, so treat foliage of healthy trees in late June with a residual insecticide to prevent infestation; re-apply as needed.

### *Pine Sawyer Beetles*



Round exit holes appear on trunks and branches, with frass accumulations. Terminal flagging is visible in late spring, due to adults feeding on new shoots. Branches may be dead.

These beetles only attack trees that are stressed, in decline or freshly dead. They have become more important because of their role in transmitting pine wilt disease. To discourage infestation of relatively healthy trees, apply a residual insecticide from late May to August.