

Eastern White Pine - *Pinus strobus*

General information: Eastern White Pine has soft blue-green 3 to 5 inches long needles borne in groups of five although foliage color varies greatly from one tree to the next. It is the only five-needle pine native to the eastern part of North America and is the state tree of Maine and Missouri. Some specimens keep the bluish color throughout the winter, others lose it. Although it can grow 100 to 120 feet tall with a three to five-foot-diameter trunk and spread 50 to 60 feet, it is typically seen from 50 to 80 feet tall in landscapes. Growth is very rapid at first but slows down with age. Several branches on young trees normally originate from the same point on the trunk forming a tree appearing to be built of layers of foliage. Although young trees are pyramidal and usually grow with one central leader, the layers (or whorls) of horizontal branches give White Pine a distinctive appearance in middle and old age. The gray bark on the trunk and large branches remains unusually smooth through middle age, breaking up into elongated blocks in old age. The flowers, male and female, occur separately as small cones on the same tree. The cones are slender and thornless, 4 to 8 inches long, and tapering.

Family: *Pinaceae*

Lighting: Full sun.

Temperature: Zone 3B through 7.

Watering: No information available.

Feeding Simon and Schuster's recommends feeding 5-needle pines once a month from early to late spring and from end of summer to late autumn with a slow-acting organic fertilizer, and applying chelated iron 2-3 times per year.

If you prefer to use chemical fertilizers, feed every other week during the same times with a half-strength solution of a fertilizer for acid-loving plants, such as Miracid. You may wish to alternate with a balanced fertilizer such as Peter's 20-20-20 depending on the acidity of your soil mix.

Pruning and wiring The root system should be pruned gradually in the course of repotting, so as to always leave a strong root system. Branch pruning and wiring should be done in late autumn, and the wire left on the tree for 6-8 months at most. Pinch new shoots in spring to 1/3 of their length.

Conventional wisdom indicates that the needles of *Pinus strobus* do not reduce well, making it suitable mainly for larger bonsai.

Every 1-2 years it is possible to remove all of the new shoots in late spring, if the tree is healthy and well-fed. This will result in buds forming in the fall at the sites where the shoots were removed. The reason this might be done is to form very short internodes on the branches.

Propagation: Seed.

Repotting Repot every 2 or 3 years for young trees (up to 10 years) or every 3 to 5 years for older trees. Repotting can be done in spring before the candles open or in late summer or early autumn, after the heat of summer has passed. These are the two periods of greatest root growth in pines.

Because of the rugged quality of the five-needle pine, a strong rectangular pot should be used. Pines need a deep root system, and five-needle pines especially need a deep pot to avoid uprooting by wind, due to their dense foliage. Simon and Schuster's recommends 50% soil, 10% peat, and 40% coarse sand. Rémy Samson recommends 1 part leaf mould, 1 part loam, and 1 part coarse sand. Peter Chan recommends 3 parts coarse sand, 1 part peat, and 1 part loam.

Pines and other conifers grow in association with a symbiotic fungus which grows in the root ball of the tree. If this fungus is not present, the tree may die. For this reason, pines and other conifers should never be bare-rooted, unless steps are taken to re-introduce the fungus to the repotted plant, such as making a slurry (thin mud) of the old soil and pouring it over the newly potted soil.

Some experts feel that it is more important to be sure that the tree always has a healthy root system with sufficient feeder roots than to worry about symbiotic fungi. They feel that trees are more likely to die from having their root systems reduced too much at once than from not having the fungus present. Certainly it is good advice in any case to be sure the tree has sufficient roots.

Pests and diseases: **Pests:** White Pine weevil is probably the biggest problem. The larvae of White Pine weevils feed on the sapwood of the leaders and this is devastating to the tree. The leader is killed and the many shoots replacing it form a bushy head. First symptoms are pearl white drops of resin on the leaders. The leaders die when the shoot is girdled as adults emerge in summer.

Some adelgids will appear as white cottony growths on the bark. All types produce honeydew which may support sooty mold. European Pine shoot moth causes young shoots to fall over. Infested shoots may exude resin. The insects can be found in the shoots during spring.

Bark beetles bore into trunks making small holes scattered up and down the trunk. Stressed trees are more susceptible to attack. The holes look like shotholes. Keep trees healthy.

Sawfly larvae caterpillars are variously colored but generally feed in groups on the needles. Some sawfly larvae will flex or rear back in unison when disturbed. Sawflies can cause rapid defoliation of branches if left unchecked.

Pine needle miner larvae feed inside needles causing them to turn yellow and dry up. Pine needle scale is a white, elongated scale found on the needles. Pine tortoise scale is brown and found on twigs. Depending on the scale, horticultural oil may control overwintering stages.

Pine spittle bug lives and hides in a foamy mass.

Spruce mites cause damage to older needles, and are usually active in the spring and fall. Mites cause older needles to become yellowed or stippled.

Zimmerman Pine moth larvae bore into the trunk. The only outward symptoms may be death of parts of the tree or masses of hardened pitch on the branches.

Diseases: Procerva root rot kills many White Pines planted off site. Avoid planting in dry sites and clay or alkaline soil.

White Pine blister rust attacks White Pine and uses currant as an alternate host. European Black Currant, the favored alternate host, may be banned from certain areas. Other Currants, particularly Red Currant should not be grown within 300 feet of Pines. Infected branches may be pruned off. Be sure to select White Pine trees certified to be rust-resistant.

Canker diseases may rarely cause dieback of landscape Pines. Keep trees healthy and prune out the infected branches.

Needle cast is common on small trees and plantation or forest trees. Infected needles yellow and fall off.

White Pine decline is used to describe the slow decline of trees planted in dry, clay soils low in organic matter. Plants with this disorder have only a small cluster of needles at the ends of the branches.

Bibliography:

"Trees of the Eastern United States and Canada" by WilliamM. Harlow, McGraw Hill, 1942.

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