

Plant Health Care Recommendations for Japanese Black Pine

Japanese black pine (*Pinus thunbergiana*) is a medium sized, irregularly pyramidal tree. Its main uses are in shoreline plantings, wind breaks and as an accent tree in the landscape. Needles persist three to four years and are a lustrous dark green. Buds are unique, they are 1/2 to 3/4 inch long and have a very prominent silvery color.

One of the main reasons for planting Japanese black pine is its tolerance of salt. It can resist the effects of both salt spray and saline soil much better than most other pines.

Japanese black pines transplant relatively easily. They grow best in full sun. Acidic soils with a pH range of 5 to 6.5 are preferred. Maximum growth is achieved when the soil is rich, moist and well drained. They are, however, adaptable to many soil types including beach sand. Growth rate can be as great as four feet per year.



Irrigation may be required during the establishment period, after that they readily adapt to all but extreme soil moisture levels. This species tolerates wind, heat and drought. However, when temperatures fall below -10° F winter injury may occur. Japanese black pine was thought to be relatively pest resistant, however, there have been major losses in some areas due to a decline syndrome. This syndrome is often started by problems with the root system or the root collar. Root problems can be caused by soil borne, root feeding nematodes. Root knot and stunt nematodes have both been identified on trees with the syndrome. Root collar problems start with the accumulation of soil or mulch against the lower trunk. This can occur due to deep planting, wind blown sand or improper mulching. These materials can hold moisture against the trunk which either damages the trunk directly or provides a favorable environment for infection of *Leptographium* or other fungal pathogens. Symptoms of root and root collar problems become more obvious after drought years and after severe winters. Restriction they cause in the uptake or movement of water often lead to branch dieback. It is these weak or dying branches that are then attacked by the weak pathogen *Cenangium ferruginosum*. Turpentine beetles are also attracted to weakened trees.

These beetles feed in the inner bark and cambium interrupting the flow of nutrients and water. They also carry the blue stain fungus which will block the flow of water in the tree. Symptoms of the turpentine beetle include pitch tubes on the lower stem. The blue stain fungus can only be seen in wood cross sections where it imparts a blue color to the wood. In areas where decline is widespread, turpentine beetle populations reach levels where healthy trees are attacked and killed.

The death of needles on Japanese black pine can be caused by the needle cast fungi *Lophodermium*, *Mycosphaerella*, *Ploioderma*, or *Rhizosphaeria*. Needlecast is more severe the summer following a wet year on trees in the shade or very dense trees which do not dry readily. Symptoms usually begin as yellowing and dropping of the interior needles. Pinewood nematodes can rapidly kill Japanese black pine. These microscopic worms are transmitted by the pine sawyer beetle from infected to healthy trees. Infected sawyers feed on the branches of healthy trees, inoculating them with the nematode. Trees often wilt rapidly during warm dry periods.

Japanese black pine are attacked by numerous insects. Sawflies will cause partial defoliation by feeding in groups on needles. The Nantucket pine tip moth, Zimmerman pine moth and European pine shoot moth feed on growing twigs, causing a tip dieback and misshapen growth. These insects cause symptoms which are very similar to tip blight disease. A few scale insects feed on the bark and needles. The pine needle scale can cover needles giving them a white appearance.

Recommended Monitoring for Japanese Black Pine

Timing	Treatment
Winter	Corrective prune to remove dead, dying, diseased, codominant leaders and interfering limbs. Sample soil for nutrient levels and pH. Correct root collar problems.
Early Spring	Preventatively treat turpentine beetles if trees are stressed or beetles
Mid Spring	Treat needlecast, and tip and shoot moth if symptoms are present from previous year. Fertilize and treat pH problems as recommended on the soil sample report.
Late Spring	Repeat turpentine beetle, mites, tip and shoot moth, and needlecast treatment.
Early Summer	Monitor and treat tip blight, sawfly, soil nematodes and soil moisture levels. Repeat needlecast treatment.
Mid Summer	Monitor and treat soil moisture problems, scale, mites, needlecast, root rots and nematodes. Prune out any terminals with tip or shoot moth injury.
Late Summer	Monitor and correct soil moisture problems, Lophodermium needlecast, root collar and mulch level. Treat soil nutrient and pH problems as needed.
Fall	Treat soil nutrient, soil nematode and pH problems as needed.

When managing groups of Japanese black pine it is essential to remove and destroy severely declining and dead trees as soon as they are discovered to prevent transmission of pests to adjacent trees.