

PLANT HEALTH CARE REPORT



Japanese Black Pine

Japanese black pine (*Pinus thunbergii*) is a medium-sized, pyramidal tree with an irregular growth habit. 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. Silvery buds are prominent at ½” to ¾” long. Popular varieties include ‘Thunderhead’, a dwarf cultivar, ‘Oculus Draconis’ and ‘Shirone Jamone’, variegated varieties, ‘Pygmaea’, a slow-growing cultivar, and ‘Majestic Beauty’, a full-sized cultivar with dark green foliage.



Pinus thunbergii
‘Janome’,
commonly
dragon or
snake eye

Photo
courtesy of
**John Paul
Endicott**

Japanese black pine is tolerant of adverse site conditions. It can resist the effects of both salt spray and saline soil much better than most other pines. This species also tolerates wind, heat, and drought. Japanese black pine is appropriate for plant hardiness zones 5 to 8, but can experience winter injury if temperatures drop below 10°F.

It grows best in full sun. Acidic soils with a pH range of 5.0 to 6.5 are preferred. Maximum growth is achieved when the soil is rich in organic material, moist, and well drained. It is, however, adaptable to

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many soil types, including beach sand and slightly alkaline soils. Growth rate is as high as four feet per year, but can vary among cultivars. Japanese black pine transplants relatively easy. Irrigation may be required during the establishment period; afterwards, it adapts to all but extreme soil moisture levels.

Japanese black pine was once touted as relatively pest resistant; however, there have been major losses in some areas due to a complex decline. This decline is worse in drought years or after severe winters and starts with the accumulation of soil or mulch against the root collar and lower stem (due to deep planting, windblown sand, or improper mulching). These materials hold moisture against the stem, providing a favorable environment for entry of fungal pathogens that disrupt water uptake to the crown. Weak or dying branches result, and these branches, in turn, are attacked by the weak pathogen *Cenangium ferruginosum*. Turpentine beetles are also attracted to stressed trees. These beetles feed in the inner bark and cambium interrupting the flow of nutrients and water. Pitch tubes on the lower stem are signs of turpentine beetle attack. The beetles carry a blue stain fungus that further blocks the flow of water in the tree. In areas where decline is widespread, turpentine beetle populations reach levels where healthy trees are attacked and killed. Soilborne root knot and stunt nematodes have also been identified on trees with the decline.

Needlecast disease, caused by various fungi (*Lophodermium*, *Mycosphaerella*, *Ploioderma*, and *Rhizosphaeria*), is more severe the summer following a wet year and on shaded or dense-crowned Japanese black pine. 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 sawyer beetles feed on the branches of healthy trees, inoculating them with the nematode. Trees often wilt rapidly during warm, dry periods.

Japanese black pine is attacked by numerous insects. Sawflies 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 that 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.

Monitoring and Treatment Considerations for Japanese Black Pine

Winter

Remove dead, dying, diseased, and broken branches. Reduce or remove codominant stems to promote appropriate structure.

Early spring

Apply bark treatment to prevent turpentine beetles if trees are stressed or beetles are attacking in the area. Expose and inspect root collar for problems. Add mulch as necessary to add organic material to soil and prevent root rot disease. Sample soil for nutrient and pH levels.

Mid-spring

Apply fungicide treatment to suppress needlecast disease as needed. Apply treatment to suppress tip and shoot moth if symptoms are present from previous year. Fertilize, adjust pH, and amend soil according to soil analysis.

Late spring

Repeat bark treatment to prevent turpentine beetles. Repeat fungicide treatment to suppress needlecast disease as needed. Repeat treatment to suppress tip and shoot moth.

Early summer

Repeat fungicide treatment to suppress needlecast disease as needed. Inspect for tip blight; treat as needed. Monitor for sawfly; treat as needed. Monitor irrigation and soil moisture to minimize water stress and prevent root disease. Sample soil for nematode analysis if decline is evident.

Midsummer

Repeat fungicide treatment to suppress needlecast disease as needed. Monitor for scales and mites; treat as needed. Monitor irrigation and soil moisture to minimize water stress and prevent root disease. Remove terminals with tip or shoot moth injury. If decline is evident, submit root samples for Phytophthora root rot testing; treat as recommended.

Late summer

Repeat fungicide treatment to suppress needlecast disease as needed. Monitor irrigation and soil moisture to minimize water stress and prevent root disease. Inspect mulch levels and adjust as needed.

Fall

Fertilize, adjust pH, and amend soil according to soil analysis. Remove and destroy severely declining and dead trees to prevent transmission of pests to adjacent trees.