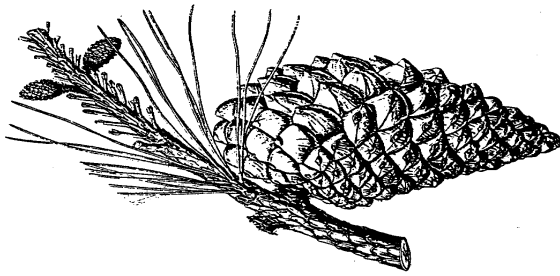




Monterey Pine

Monterey pine, *Pinus radiata*, is the most widely planted pine in the world. This species has become important for lumber and paper in Australia, New Zealand, Spain and large areas in Africa and South America. Rapid growth (six feet per year on good sites) and adaptability to poor soils are Monterey pine's key characteristics. The native range of Monterey pine is limited to small areas of California within seven miles of the coast. However, Monterey pine is used extensively in landscaping for screening and to prevent erosion. Rapid growth and attractive foliage quickly provide variety and contrast in the landscape. In their native habitat along the Pacific coast, Monterey pines are famous for their wind-swept, picturesque shape.

Monterey pine is an adaptable tree, but it does have specific cultural requirements.



Temperatures below freezing for only a few hours are damaging to this species. Temperatures above 100°F cause needle scorch and damage to new shoots. In the summer, Monterey pine is adapted to cool, foggy conditions. The tree's needles collect fog, dripping as much as one-half inch per week to the root system. Monterey pine is susceptible to air pollution, particularly ozone injury.

Monterey pine grows best in acid, well drained soils. A four inch layer of organic matter, such as wood chips, is very beneficial. This species does not thrive on shallow soils and is prone to blow down on such sites.

Monterey pine is considered susceptible to a wide range of pests, with bark beetles and root rots the most serious tree killers. A total of 56 species of insects and 18 diseases are listed as attacking Monterey pine. The following is a partial listing of the most important pests:

1. Red turpentine beetle, *Dendroctonus valens*
2. Root rots, *Heterobasidion*, many others
3. Western gall rust, *Endocronartium spp.*
4. Pitch canker, *Fusarium moniliforme*
5. Needlecast disease, *Cyclaneusma spp.*
6. Monterey pine needleminer, *Argyresthia pilatella*
7. Monterey pine midge, *Thecodiplosis piniradiatae*

8. Monterey pine shoot moth, *Exoteleia burkei*
9. Monterey pine weevil, *Pissodes radiatae*
10. Monterey pine tip moth, *Rhyacionia buoliana*
11. Pine needle scale, *Chionaspis pinifoliae*
12. Monterey pine scale, *Physokermes insignicola*
13. Spider mites, *Oligonychus spp.*
14. Pinewood nematode, *Bursaphelenchus xylophilus*
15. Needle rust, *Coleosporium spp.*

Recommended Monitoring for Monterey Pine

Winter	Inspect for pest activity. Corrective prune crowns; remove dead, dying, diseased and conflicting limbs. Inspect root collar, excavate as needed. Sample soil for nutrient and pH levels.
Late Winter	Apply horticultural spray oil for overwintering pests. Inspect for mites, scale, aphids and other pests.
Early Spring	Inspect for mites and other pests. Apply fungicide treatments as necessary to prevent needlecast and rust. Apply treatments for tip and shoot moths, needleminer, and weevils as needed.
Mid Spring	Inspect for mites and other pests. Apply preventive borer sprays for turpentine beetles. Apply fungicide treatments as necessary to prevent needlecast and rust.
Late Spring	Inspect for scales, midges, moths, mites and other pests. Apply fungicide as necessary to prevent needlecast and rust.
Early Summer	Inspect for scales, midges, moths and other pests. Apply preventive borer treatment for turpentine beetle. Inspect irrigation and soil moisture levels to reduce moisture stress and prevent root rot.
Mid Summer	Inspect for scales, midges, moths and other pests. Inspect area for dying pines and remove to prevent pinewood nematode.
Late Summer	Inspect for scales, midges, moths and other pests. Apply preventive borer treatment for turpentine beetle.
Early Fall	Inspect for scales, midges, moths and other pests. Inspect root collar and excavate as needed.
Late Fall	Inspect for scales, midges, moths and other pests. Fertilize tree and modify soil as indicated by soil samples. Mulch to depth of 4 inches.