

Mugo Pine (Swiss Mountain Pine) - *Pinus mugo*

General Information: Mugo Pine is a shrub or small, round or broad pyramidal plant 4 to 10 feet tall which grows best in sun or partial shade in moist loam. It comes from Alpine Europe. The dark green, 1 - 1 1/2 inches long, stiff needles of this two-needle Pine are held on the tree for more than four years making this one of the more dense Pines suitable for a screen planting. Most other Pines are not suited for screens since they lose their inner needles and lower branches as they grow older. Since there seems to be great variability in height among individual trees, select nursery plants which have the form which you desire. When selecting a Mugo Pine to grow into a tree, choose one with a central leader; if looking for a more dwarf type Mugo Pine choose among the many compact selections.

Family: *Pinaceae*

Lighting: Full sun. Turn the tree from time to time so that all parts of the foliage receive adequate light.

Temperature: Zones 2 through 7. Will tolerate freezing but roots need to be protected.

Watering: May dry out between waterings. Fast draining soil to avoid root rot. Spray the foliage with water daily during the summer.

Feeding Simon and Schuster's recommends feeding once a month in spring and autumn using a slow-acting organic fertilizer. If you prefer to feed using chemical fertilizers, feed the tree once every two weeks with a half-strength solution of a fertilizer meant for acid-loving plants, such as Miracid. Suspend feeding for two months during the hot part of summer (July and August in the northern hemisphere). Do not feed if the tree is ailing or has been repotted recently (2-4 weeks).

Pruning and wiring: Initial pruning should be carried out at the same time as repotting. When repotting, be sure to leave a good root system. Subsequent pruning can be carried out when wiring in the fall. Pinch by shortening new shoots (candles) by two thirds in the spring, before the needles open. Pinch the candles in two stages, pinching the most vigorous candles first and a week later pinching the weaker candles. In the fall, reduce the number of buds on each branch to two to encourage ramification. Also in the fall, thin the needles by removing any needles that are too long or that are growing downward. Thin more at the apex of the tree and less as you work down the tree. This will allow light to reach the lower branches and will slow the growth of the apex.

Wiring should be done in late fall or early winter, and the wire removed 6-8 months later at most.

With healthy trees, it is possible to remove all the new candles every other year, before they harden. The following fall, buds will appear where the candles were removed. This serves to shorten the internodes and encourage more dense foliage.

Propagation: No information available.

Repotting In early spring or late summer, every 2-3 years for young specimens and every 3-5 years for older ones. Pines need deep, well drained soil, so plant in a fairly deep container. Simon and Schuster's recommends 50% soil and 50% coarse sand. Rémy Samson recommends 1 part leaf mould, 1 part loam, and 1 part coarse sand. Peter Chan recommends 1 part loam, 1 part peat, and 3 parts coarse sand.

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:** Mugo Pine is a favored host for Pine sawfly and Pine needle scale. 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 May. Pesticides are only effective when caterpillars are moving from overwintering sites to new shoots. This occurs in mid to late April or when needle growth is about half developed.

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.

The larvae of Pine weevils feed on the sapwood of the leaders. The leader is killed and the shoots replacing it are distorted. First symptoms are pearl white drops of resin on the leaders. The leaders die when the shoot is girdled as adults emerge in August. Prune out and burn infested terminals before July 15.

Pine wilt nematode can kill trees.

Diseases: Diplodia tip blight is a common problem and Mugo Pine is very sensitive. This pine is susceptible to rusts. 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.

Bibliography:

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