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Limber Pine  
*Pinus Flexilis*  
Bristlecone pine  
*Pinus Aristata*



### General

Limber pine and bristlecone pine are western white (5-needle) pines. These pine are often found growing on very poor, dry, mountainous sites in the American West. They are most commonly found at elevations of 5,000' all the way up to treeline at 12,000'.

On dry sites these pine often take on a shrub-like form and develop wildly contorted trunks and spiraling deadwood that rival the best junipers. The small needles make them an excellent bonsai subject. Bristlecone pine are among some of the oldest known living things, with some specimens reaching ages over 5,000 years.

### Light

These trees requires bright sunlight through at least a large portion of the day. Dappled sunlight is OK, but over long periods of time (several years) too much shade will lead to a slow decline in the vigor of the tree. However, after periods of stress (repotting, wiring, needle pruning, after shipping, etc), the tree will benefit from partial shade and misting for a week or two.

### Water

These pines typically grows in a dry environment and the root system requires that oxygen be available. In a bonsai container they are usually grown in a coarse, free draining soil mixture that will not become waterlogged for long periods. In hot weather the tree should be watered when the soil appears dry below the surface, but not if it still appears wet. In the heat of summer I usually give everything a brief spray in the morning, time permitting, and then do a real watering in the evening. They require less water than most other trees and missing a watering or two is not usually a cause for concern. A small pot will require more frequent watering than a large one.

## Winter

These trees are extremely winter hardy and can easily tolerate temperatures well below zero when precautions are taken. They can be wintered outside on the ground in a shaded area out of the wind with the pot covered in mulch to the rim. They can be kept in an unheated garage or greenhouse. They should probably freeze hard at least once or twice per winter and can stay frozen for the whole winter without harm. They need a minimum six week cold dormant period when the nighttime temps drop into the 30's and 40's and occasionally colder. In their native environment they may have occasional nighttime freezes during almost any month of the year.

## Fertilizer

A mild fertilizer of almost any kind will work well. A slow-release fertilizer, like Osmocote, or Bio-gold works well. Late summer and fall fertilization will result in more vigorous budding and back-budding. Spring fertilization is also recommended to strengthen the tree.

## Growth

These are a relatively slow growing species and will benefit from being left alone for a couple years after they have first been collected. Good, consistent fertilization will also help them become more vigorous. Wiring, major pruning and repotting should wait until the tree is strong enough to make noticeable new buds in the fall. The branches are quite flexible and can be easily shaped with wire. Because the tree tends to be slow growing wire may have to stay on the branch several years to have the desired effect. Bristlecone pine may sometimes keep their needles up to 20 years.

## Repotting

Generally a newly collected tree takes about three years to re-establish its root system in its new container. At this time there is usually a noticeable increase in vigor and this is a good sign that the tree is ready for repotting. The best time for this is in the spring, after all danger of freezing is past. At this time dead roots can be removed, excessively long roots can be trimmed and more of the remaining original soil can be washed off. The planting angle can be adjusted to fit the new container.

There may be good reasons to repot before three years; a tree may already be strong and vigorous, a pot may have cracked or other reasons. In this case it is usually better to just move the tree into its new pot while trying to disturb the root system as little as possible. A newly repotted tree should always be protected from freezing.