

## Plant Data Sheet

### *Pinus lambertiana* Dougl., Sugar Pine



<http://oregonstate.edu/trees/con/spp/pinespp.html>



[http://165.234.175.12/Dendro\\_Images.html](http://165.234.175.12/Dendro_Images.html)

**Range:** West slope of the Cascade Range in north central Oregon to the Sierra San Pedro Martir in Baja California. Distinct populations also found in the Coast Ranges of southern Oregon and California, Transverse and Peninsula Ranges of southern California, and east of the Cascade and Sierra Nevada crests.

<b>Climate, elevation:</b> Cascade Range	1,100 to 5,400 ft
Sierra Nevada	2,000 to 7,500 ft
Transverse and Peninsula Ranges	4,000 to 10,000 ft
Sierra San Pedro Martir	7,065 to 9,100 ft

**Local occurrence:** No native populations exist in Washington state.

**Habitat preferences:** Relatively warm, dry summers and cool, wet winters. Summertime precipitation is less than 1 inch per month and relatively low humidity. Most precipitation occurs between November and April. As much as two-thirds of precipitation is in the form of snow at middle and upper elevations. Total precipitation ranges between 33 and 69 inches.

Most soils are well-drained, moderately to rapidly permeable, and acidic. Grows best on south and west facing slopes.

**Plant strategy types/successional stage:** Rapidly grows a deep taproot to compensate for tissue intolerance to moisture stress. It is partially shade-tolerant and grows slowly when small until a gap in the canopy allows it to really take off. It is categorized primarily as an early-seral to seral species.

**Associated species:** In the northern part of its range, it is commonly associated with;

Douglas-fir (*Pseudotsuga menziesii*),  
ponderosa pine (*Pinus ponderosa*),  
grand fir (*Abies grandis*),  
incense-cedar (*Calocedrus decurrens*),  
western hemlock (*Tsuga heterophylla*),  
western red cedar (*Thuja plicata*),  
Port-Orford-cedar (*Camaecyparis lawsoniana*),  
tanoak (*Lithocarpus densiflorus*),  
Pacific madrone (*Arbutus menziesii*),  
Greenleaf manzanita (*Arctostaphylos patula*),  
deer brush (*Ceanothus integerrimus*),  
snowbrush (*C. velutinus*),  
mountain whitethorn (*C. cordulatus*),  
salal (*Gaultheria shallon*),  
coast rhododendron (*Rhododendron californium*),  
gooseberries and currants in the genus *Ribes*.

**May be collected as: (seed, layered, divisions, etc.)**

Seed, cutting, graft

**Collection restrictions or guidelines:** Collect seeds in late summer.

**Seed germination:** Shows dormancy. Break dormancy with stratification for 60-90 days at 4 degrees Celsius or by removing seed coat and inner papery membrane surrounding the seed. Germination of fresh seed is uniformly rapid and high if adequately ripened, cleaned, and stratified. Only 20-25 percent of initial germinants may survive as long as 10 years.

**Seed life:** Maintains viability when stored frozen.

**Recommended seed storage conditions:** Deep freezing maintains viability. Storage above freezing temperatures is possible, but viability may decline rapidly.

**Propagation recommendations:** Seedlings must have an adequate tap root and capacity to regenerate vigorous new root systems in order to survive summer drought. Young trees can be rooted from cuttings. Other forms of plant material include bareroot, container, containerized seedlings, and grafts(donor of all ages). Sow seed in February or March.

**Soil or medium requirements:** Seeds germinate rapidly and grow a deep taproot when on bare mineral soil. Do not inoculate soil.

**Installation form:** Plant seedlings out into permanent positions when they are between 30-90 cm tall and protect them for a winter or two. When taking cuttings, take them from trees that are less than 10 years old and disbud them.

**Recommended planting density:** Minimum of 430 and maximum of 1200 per acre.

**Care requirements after installed:** Protect from first winter or two and exclude competition from weeds with clean mulch. Water in summer if showing signs of stress in the first few years.

**Normal rate of growth or spread; lifespan:** Slow early growth but accelerates in the pole stage or when there is a disturbance in the canopy cover. It tolerates shade better than ponderosa pine but slightly less than incense-cedar and Douglas-fir. It is a seral species, becoming less tolerant with age. If overtopped, it will eventually die. Seedling establishment and growth increases with less brush cover. Sugar pines live to be 400 to 500 years old.

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