



GUIDELINES TO EVALUATE PEARS FOR COMMERCIAL PLANTING IN THE SIERRA NEVADA FOOTHILLS

Maximum elevation: 3,000 feet level terrain

Optimum elevation: 1,000 - 2,000 feet

Soil texture: Sandy loam, loam, silt loam, clay loam, loamy clay, loamy sand.

Soil families: Musick, Auberry, Josephine, Aiken, Holland, Shaver, Sierra, Sites, Cohasset are the better soils.

Acceptable drainage: Fair

Acceptable soil depth:
Minimum - 3 feet
optimum - 4 to 5 feet

Slope: Neutral, south, southwest, west, east, slightly north

Row orientation: North to south is best for close in row tree spacing. Frost potential and steepness of slope would be overriding factors. Trees produce higher yields when pruned to allow sunlight to strike all sides of the tree.

Water needs/ inches per season (orchard with groundcover)

- 1000-1500 = 49 inches
- 1500-2000 = 44 inches
- 2000-2500 = 39 inches
- 2500-3000 = 36 inches
- 3000-3500 = 33 inches
- 3500-4000 = 31 inches

Add 10-15% for south, southwest slopes. Subtract 10-15% for north, northeast slopes. Add 25-30% for extra heavy cover crop. Add 20-30% to all irrigations to account for system losses and inefficiencies.

Note: Most foothill soils store 1.5 to 2 inches of water per foot from winter rainfall. This water and any rainfall during summer can be subtracted when calculating irrigation needs.

Temperature constraints: 28°F during bloom. 30°F small green fruit. Bloom date important as Asian pears bloom before European pears and European pears bloom ahead of most apples. Fruit quality and length of harvest season are best at 1500 to 2000 feet elevation. Ridge tops provide better overall climate than valleys under foothill conditions.

Age:

To bearing 5 to 7 years

Maximum bearing 10 to 11 years

Prime bearing years 10 to 60+

Varieties (in order of maturing):

European pears - Bartlett, Bosc, El Dorado, Comice

Asian Pears - Shinsheiki, Hosui, Twentieth Century, Shinko

Rootstocks:

European pears - winter Nelis seedling, Betulaefolia seedling

Number of trees per acre: 200. Spacing from 15' feet square to 12'x18'

Irrigation methods:

Micro sprinklers

Under-tree permanent set sprinklers

Portable sprinklers

Drip on nearly level ground

Yields:

Fair - 7 tons

Good - 10 to 12 tons

Excellent - 15 to 20 tons

Major diseases: Pear blight, pear decline, pear scab

Persistent insect pests: Codling moth, pear psylla, pear rust mite, two-spotted mites, San Jose scale

Other common pest problems: Deer, gophers, meadow mice, birds

Culture:

Training - 3 leader

Weeds - 1. Cultivation followed by mowing.

2. Spray weed strip in row, and mow row centers or plant perennial cover crop (dwarf strains of rye, fescue, orchard grass) in row centers.

Pruning - Annual removal of most current season growth, renew spurs on 5 year rotation.

Irrigation - 8 to 12 sprinkler applications or at 60 centibars on tensiometer (18 inch depth) for sprinklers and 30 centibars for drip.

Spraying - 6 to 10 applications.

Establishment Costs:	<u>Per Acre</u>
Fencing	\$ 200 - 400
Trees	800 - 800
Irrigation System	400 - 1200
Materials	700 - 1000
Labor	1100 - 1500
Miscellaneous	100 - 800
TOTAL	\$ 3300 - 5700

Equipment Costs:	<u>Per Farm</u>
Part time farm (minimum)	1000
Full time farm	
New	\$ 60,000 - 100,000
Used	20,000

Production Costs:	<u>Per Acre</u>
Cultural	\$ 500 - 800
Harvest	200 - 450
Overhead	?
TOTAL	\$ 700 - 1250

Annual Gross Income:	<u>Per Acre</u>
	\$ 700 - 3000

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