



## GUIDELINES TO EVALUATE PLUMS FOR COMMERCIAL PLANTING IN THE SIERRA NEVADA FOOTHILLS

Maximum elevation: 3000 feet for European plums, 2500 feet for Japanese plums

Optimum elevation: 1500 - 2000 feet for European plums; 500 - 1000 feet for Japanese plums.

Soil texture: Sandy loam, loam, silt loam, clay loam

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

Acceptable drainage: Good for peach rootstock, fair for plum rootstocks.

Acceptable soil depth:

Minimum - 2 feet

Optimum - 4 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.

Water required: 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 at full bloom and 29-30°F when small green fruits. Japanese plums bloom in February several weeks ahead of European plums and therefore are subject to more spring frosts. Japanese plums may not pollinize during cool, wet weather. Hot summer temperatures may cause skin sunburn on Japanese plums and internal flesh injury on European plums, especially at lower elevations. Japanese plums should be planted on ridge tops to avoid frost problems.

## Age:

To bearing - 4 to 6 years

Maximum bearing - 8 to 10 years

Prime bearing years - 9 to 20 years

## Varieties:

European plums - Empress (Use President or Emily for pollination)

Japanese plums - Use late-season varieties such as Kelsey, Queen Ann, Rosemary for the wholesale market. One or more pollinizing varieties will be required.

## Rootstocks:

Peach - where there is good soil drainage and little threat of oak root fungus or tomato ringspot virus.

Myrobalan or Marianna plum - on wetter sites and where oak root fungus exists. Use Marianna where tomato ringspot virus is a problem.

Number of trees per acre: 200 to 400.

Spacing: 10x16 to 15 square feet for Japanese varieties.

7 - 10 x 16 to 15 - 16 square feet for European varieties.

## Irrigation methods:

Micro sprinklers

Portable sprinklers

Drip on nearly level ground

## Yields:

Fair - 4 tons per acre

Good - 6 tons per acre

Excellent - 10 tons per acre

Major diseases: Brown rot, blossom blast (*Pseudomonas syringae*)

Persistent insect pests: Peach twig borer, leaf curl, plum aphid

Other common pests: Deer, meadow mice, gophers, birds

## Culture:

Training - 2 leader, 3 leader, vase - Japanese varieties have variable growth characteristics; some varieties may benefit from tying over current season shoots between trees.

Weeds - 1. Cultivation followed by mowing.

2. Strip spray weeds in row centers and mow or plant perennial cover crop (dwarf strains of rye, fescue or orchard grass) in row centers or treat centers in late spring with Roundup (where micro sprinkler or drip irrigation is practiced).

Pruning - European - light annual thinning  
 Japanese - depends on varietal characteristics

Irrigation - Irrigation at 60 centibars on tensiometer (18 inch depth) before harvest and 70-80 after harvest.

Spraying - 2 to 4 applications per year.

Establishment Costs:	<u>Per Acre</u>
Fencing	\$ 0 - 400
Trees	800 - 1600
Irrigation System	400 - 1200
Materials	600 - 800
Labor	800 - 1200
Miscellaneous	100 - 600
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TOTAL	\$ 2700 - 5800

Equipment Costs:	<u>Per Farm</u>
Part time farm (minimum)	1000
Full time farm	
New	\$ 50,000 - 80,000
Used	12,000 - 15,000

Production Costs:	<u>Per Acre</u>
Cultural	\$ 500 - 900
Harvest	200 - 300
Overhead	?
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TOTAL	\$ 700 - 1200

Annual Gross Income:	<u>Per Acre</u>
	\$ 500 - 8000

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