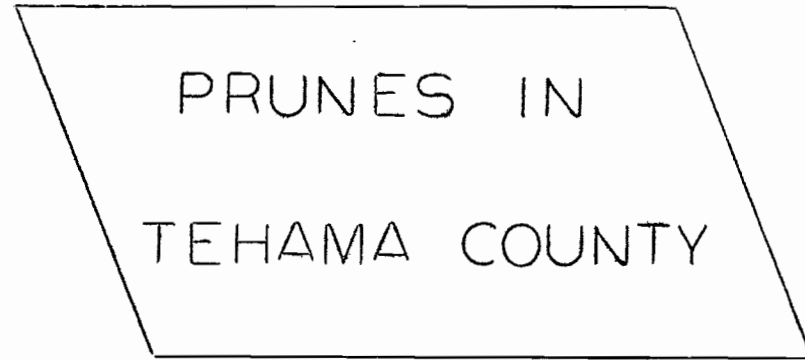


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PRUNES IN
TEHAMA COUNTY

1962

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INDEX

	Page
Soil -----	1
Water & Irrigation -----	2
Climate -----	2-3
Rootstocks & Varieties -----	3-4
Planting Distances -----	4
Coming Into Production -----	4
Yields -----	4
Covercrops -----	5
Pests & Diseases -----	5
Major Prune Buyers -----	6
Prune Production Costs -----	7-15
Capital Investment & Fixed Costs, 80 Acres mechanically harvested, sprinkler irrigated French prunes ----	8-9
Typical Costs To Produce Dried Prunes in Tehama County--1962, 80 Acres, Mechanically Harvested & Sprinkler Irrigated -----	10-11
Capital Investment and Fixed Costs 40 Acres Hand Harvested, Flood Irrigated French Prunes -----	12-13
Typical Costs to Produce Dried Prunes In Tehama County--1962, 40 acres, Hand Harvested and Flood Irrigated ---	14-15
Suggested Reading -----	17

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Farm Advisor, Tehama County

PRUNES IN TEHAMA COUNTY

California produces about 85% of the world's prune tonnage. In 1961 there were 139,000 acres of prunes in California--29,403 acres of which were nonbearing.

Tehama County is the fifth largest prune growing area in the state with 5,660 total acres--2,951 bearing and 2,709 nonbearing.

Prunes are especially adapted to Tehama County conditions and are the major tree crop produced.

SOIL

Prunes are raised on the deep well-drained soils found along the Sacramento River and its tributaries. Although possibly best adapted to loam and clay loam soils they also do well on sandy and gravelly soils.

A perched water table condition exists on the east side of the valley on some of the shallow soils overlaying hardpans which presents some prune production problems.

Dieback, a result of overcropping and/or potassium deficiency is common on alluvial soils associated with the tributaries of the Sacramento River, particularly in areas of cuts made during land leveling.

Fruit thinning and potash fertilization injected into the soil at rates of 25 to 50 pounds per tree every 4 or 5 years helps correct this condition.

Zinc deficiency is usually found in areas of old corral sites and ancient Indian mounds. It is also often found on sandy soils associated with the Sacramento River. It is corrected by sprays of zinc oxide at the rate of 5-6 pounds per 100 gallons of water applied in the spring or summer.

Nitrogen is seldom needed until the trees come into bearing. Mature orchards require about 100 pounds of actual nitrogen annually.

WATER & IRRIGATION

A number of mutual water companies and irrigation districts are located in the county. In many instances arrangements have been made for growers to place pumps in the distribution systems for sprinkler irrigation.

In a few locations, on the east side of the Sacramento River, excess boron has been found in ground water being pumped. The known areas are Jelly's Ferry, Salt Creek drainage, and about 3 miles south of Los Molinos. A survey of other areas is now in progress.

Total water requirements of about 2.5 acre feet per acre have been measured on mature orchards.

An irrigation in July will cause fruit cracking if the trees have been under a prior moisture stress.

CLIMATE

The chief climatic factors in the county are spring frost, spring rains and hail, summer and fall heat, and fall rains.

Spring Frost: is spotty and infrequent. It has not proven profitable for growers to use orchard heating practices.

Spring Rains and Hail: In most years there is not enough spring rainfall to add to the effective soil moisture. Frequent light showers often keep the top foot of soil too wet to prepare for flood irrigation--thus causing serious delay in the first irrigation.

Some general areas are more prone to hail storms than others. The advice of long time residents is suggested to get the history of any particular area.

Summer and Fall Heat: These cause 2 types of damage. Sunburning of exposed fruit causes heavy drop some years. Hot weather during harvest results in pit burning and darkening of flesh color which reduces quality. Heat damaged exposed limbs are often invaded by diseases and pests.

Fall Rains: Light showers in late September usually stop the harvest for one or more days except on the very sandy soils. The fall rains sometimes induce the leaf disease, peach rust, causing premature defoliation--which causes some problems during harvest.

ROOTSTOCKS AND VARIETIES

Plum rootstocks Myrobalan 29C and Marianna 2624 are used for their resistance to oak root fungus and some nematodes. Some newer plum roots are now being tested locally.

Peach roots are seldom used except for interplants because of their susceptibility to the above conditions.

French prunes are usually planted because of their consistent bearing of high quality fruit.

Robe de Sargent and Imperial are sometimes used to extend the harvest season. They produce inconsistent crops of lower quality and are more difficult to dehydrate.

PLANTING DISTANCES

Trees are usually planted 24 or 25 feet apart on the square. Closer plantings (except on gravelly soils) produce more per acre at an earlier age but are not recommended because of the shading out of lower growth as the trees become mature and meet in the middles.

COMING INTO PRODUCTION

Prunes are borne primarily on spurs. In order to encourage spur formation, heading back or excess fertilization is to be avoided. These lead to excessive vegetative growth rather than flower bud formation and can delay bearing 1 to 3 years.

YIELDS

Over production is the rule rather than the exception. Thinning with poles and chemical sprays is common. During periods of high prices it has proven profitable to tie trees up to prevent limb breakage on young trees.

COVERCROPS

Covercrops are grown during the winter to help improve soil structure. Barley or other grasses are recommended. These can be planted after a fall irrigation or before the rains. The covercrop is disced under in the spring before it becomes mature.

A popular trend is to mow or chop the covercrop rather than disc, particularly on orchards which receive sprinkler irrigation. When used in this fashion a summer growing sod is maintained which requires an additional nitrogen fertilization in the spring to stimulate decomposition. This summer sod is usually disced under after the second irrigation so the soil can be suitably prepared for harvesting. This system usually requires an extra irrigation.

PESTS AND DISEASES

Insect Pests: Peach twig borer, Red Spider, Brown Almond Mites, Leaf Curl and Mealy Plum Aphid, Red Humped Caterpillar, and San Jose Scale are the most common pests.

Others found less commonly in economic amounts are Brown Apricot Scale, Parlatoria Scale, Diabrotic Beetles, Flat Headed Borers, Shot Hole Borers and various nematodes.

Diseases: Bacterial Gummosis, Oak Root Fungus, Crown Gall, Crown Rot, and Ceratocystis Canker are the major diseases of this area.

Others less commonly found are Peach Leaf Rust, Cytospora Canker and Brown Rot.

LIST OF MAJOR PRUNE BUYERS

California Packing Company, San Francisco
Local representative: Joe Pratton, Chico

Mayfair Packing Company, San Jose
Local representative: Laurel Hunt, Red Bluff

Sunsweet Growers, Inc., San Jose
Local representative: Latane Sale, Corning
Cooperative Drier,
Corning

Valley View Packing Company, San Jose
Local representative: George Lindauer,
Red Bluff

PRUNE PRODUCTION COSTS

The following cost studies were developed to give an idea of expected costs per acre. The figures are typical costs under assumed conditions and are not representative of any one particular orchard.

There are two different cost studies here comparing a 40 acre, flood irrigated, hand harvest operation to an 80 acre, sprinkler irrigated, mechanical orchard.

The important thing to remember is that when considering total costs you must consider all costs both variable and fixed.

Variable Costs: Are those costs that vary with production such as gasoline, fertilizer, spray materials, hired hourly or piece work labor.

Fixed Costs: Are those of an "overhead" nature that must be met regardless of production. They are of 2 types. Cash fixed costs include taxes, insurance, cash interest on loans, etc. The non-cash fixed costs are primarily depreciation and interest on your capital investment and your own labor and management charge.

A study of this type serves a useful purpose by showing how different combinations of land, labor, capital and management can affect production costs.

It is strongly suggested that you keep records of your operation to supply this information to you and that you budget your operations into the future in a manner similar to this to use as a guide in decision making.

CAPITAL INVESTMENT AND FIXED COSTS--80 ACRES MECHANICALLY
HARVESTED, SPRINKLER IRRIGATED FRENCH PRUNES

Investment	Total Cost	Cost Per Acre	Expected Life	Fixed Cost Per Acre	
				Interest	Depreciation
Land -- 80 acres	\$ 80,000.00	\$ 1000.00	--	\$ 60.00	--
Trees - 75 per acre	52,000.00	650.00	30 years	19.50	\$ 21.66
Irrigation system	10,000.00	125.00	20	3.75	6.25
2-Wheel tractors	8,000.00	100.00	10	3.00	10.00
Chopper	450.00	5.62	10	.17	.56
Disc	1,500.00	18.75	15	.56	1.25
Roller	250.00	3.12	20	.09	.16
Sprayer	6,000.00	75.00	15	2.25	5.00
2 Shakers	5,000.00	62.50	5	1.87	12.50
Catching frame	9,000.00	112.50	5	3.37	22.50
Bins	1,000.00	12.50	10	.37	1.25
Fork lift	1,000.00	12.50	15	.37	.84
Pallet wagon	500.00	6.25	20	.19	.31
Buck rake	250.00	3.13	10	.09	.31
Pickup truck	2,000.00	25.00	10	.75	2.50
Shed and shop	5,000.00	62.50	30	1.88	2.08
Pruning equipment	500.00	6.25	10	.19	.63
TOTAL	182,450.00	2,280.62		98.40	87.80

Interest--6% of $\frac{1}{2}$ the cost per acre on all depreciable items. 6% of the full value of land.
 Depreciation--Computed as straight line; i.e. divide the cost per acre by the expected life of equipment.

TYPICAL COSTS TO PRODUCE DRIED PRUNES IN TEHAMA COUNTY--1962
 80 ACRES--MECHANICALLY HARVESTED AND SPRINKLER IRRIGATED

Operation	Hours Per Acre	Cash And Labor Costs			Cost Per Acre
		Labor	Equipment	Materials	
Cultural					
Prune	24.0	36.00	1.00		37.00
Brush Disposal	2.0	3.00	3.00		6.00
Fertilize	.3	.45	.45	100# Nitrogen 12.00	12.90
Chop Covercrop 4 times	1.2	1.50	1.80		3.30
Irrigate 4 times	2.4	3.60	.25	2.5 acre feet water 12.50	16.35
Spray 2 times	1.2	1.50	4.20	Chemicals 20.00	25.70
Taxes, Ins., & Misc.				40.00	40.00
Total Cultural & Misc. Cash Costs		46.05	10.70	84.50	141.25
Harvest & Process					
Disc 2 times	1.0	1.50	1.65		3.15
Roll	.5	.75	1.50		2.25
Shake & Catch 90% of crop	4.8	7.20	.50		7.70
Pick windfalls, 10% of crop @.50¢ a box		13.00			13.00
Haul to dipper	\$3.00 a green ton contract				20.61
Dip & Dehydrate	@\$18.00 a green ton contract				123.66
Total Harvest Cash Cost		22.45	3.65		170.37
TOTAL CASH COSTS					311.62

Labor - \$1.50 an hour
 Yield - 2.5 dry tons @2.75 to 1 dry away

Total fixed costs per acre - \$184.58
 Total annual per acre cost - \$496.20

CAPITAL INVESTMENT AND FIXED COSTS
40 ACRES HAND HARVESTED, FLOOD IRRIGATED FRENCH PRUNES

Investment	Total Cost	Cost Per Acre	Expected Life	Fixed Costs Per Acre	
				Interest	Depreciation
Land 40 acres	\$40,000.00	\$1,000.00	--	\$60.00	
Trees 75 per acre	26,000.00	650.00	30	19.50	21.66
Irrigation System	2,400.00	60.00	30	1.80	2.00
1-Wheel Tractor	4,000.00	100.00	10	3.00	10.00
Disc	1,500.00	37.50	15	1.11	2.50
Ridger	400.00	10.00	10	.30	1.00
Landplane	1,500.00	37.50	20	1.13	1.87
Roller	250.00	6.25	20	.18	.33
Buck Rake	250.00	6.25	10	.18	.66
Pickup Truck	2,000.00	50.00	10	1.50	5.00
Trailer	500.00	12.50	20	.37	.62
Shed and Shop	4,000.00	100.00	30	3.00	3.33
Pruning Equipment	250.00	6.25	10	.19	.63
Lug Boxes	600.00	15.00	10	.45	1.50
TOTAL	\$83,650.00	\$2,091.63		92.71	51.10

TYPICAL COSTS TO PRODUCE DRIED PRUNES IN TEHAMA COUNTY--1962
40 ACRES--HAND HARVESTED AND FLOOD IRRIGATED

Operation	Hours Per Acre	Cash and Labor Costs			Cost Per Acre
		Labor	Equipment	Materials	
Cultural					
Prune	24.0	36.00	1.00		37.00
Brush Disposal	2.0	3.00	3.00		6.00
Fertilize	.3	.45	.45	100# Nitrogen \$12.00	12.90
Disc Covercrop	1.0	1.50	1.65		3.15
Irrigate 4 times	16.0	24.00	6.00	2.5 acre feet water 10.00	40.00
Spray 2 times	1.2	1.50	4.20	Chemicals 20.00	25.70
Taxes, Ins. & Misc.				40.00	40.00
Total Cultural and Misc. Cash Costs		66.45	16.30	82.00	164.75
Harvest & Process					
Disc 2 times	1.0	1.50	1.65		3.15
Landplane & Roll	1.0	1.50	1.80		3.30
Shake		Contract	@\$8.00 an hour		12.00
Pick Up & Box		\$12.00 a ton			82.44
Haul to dipper		4.00 a ton contract			27.48
Dip and dehydrate		18.00 a ton contract			123.66
Total Harvest and Process Cash Cost					252.03
TOTAL CASH COSTS					416.78

Labor - \$1.50 an hour
Yield - 2.5 dry tons @2.75 to 1 dry away

Total fixed costs per acre -- 143.81
Total per acre costs ----- 560.59

...SUGGESTED READING...

The following selected publications are available for distribution at your Farm Advisors' Office, P. O. Box 370, Red Bluff, California. (Upstairs in the Post Office Building).

Insect Pest and Disease Control Program--
Prunes

Deciduous Orchards in California Winters

Propagation of Temperate Zone Fruit Plants

Essentials of Irrigation and Cultivation of
Orchards

Contour Check Method of Orchard Irrigation

Sprinkler Irrigation

Orchard Plow Pans

Fertilizers and Covercrops in California
Orchards

Pruning Deciduous Fruit Trees

Oak Root Fungus and Its Control

Bacterial Canker

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