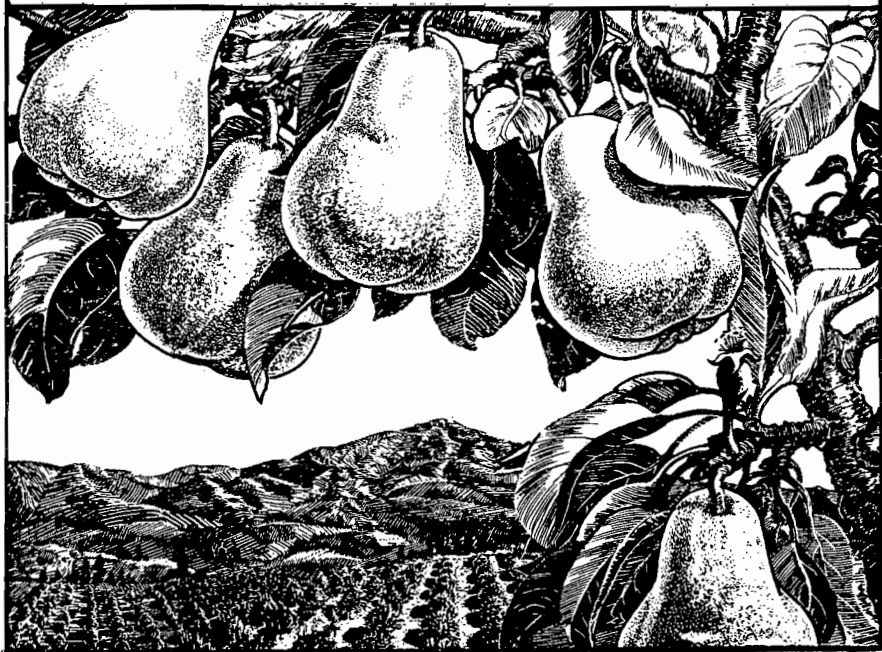


# ***Pear Production*** ***in*** ***Placer County***



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These factors in Placer County Pear Production are discussed in this circular:

#### THE HISTORY OF:

1. Acreage
2. Yields
3. Prices

#### FACTORS RELATING TO PRODUCTION

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1. Marketing Orders
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## GENERAL HISTORY

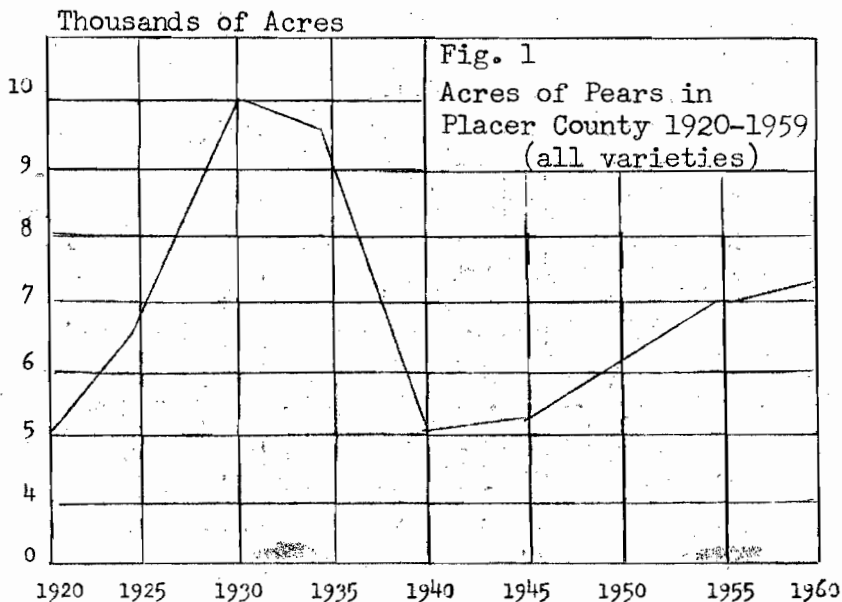
Pears have been grown in Placer County since the boom era of the gold rush days. Remnants of these early plantings are still to be seen around the historic mining camps such as Illinois Town, Iowa Hill and Yankee Jims.

The present day pear industry, however, was born in the 1890's following a period when newcomers to California found the valley lands taken and discovered the productiveness of irrigated granite foothill soils.

Today pear production is a major industry in this county which ranks second in pear acreage in the United States.

### Acreage

The rise and fall of the county's pear acreage, as shown in Figure #1 below, gives some indication of the economic soundness of the industry.



The reduction in acreage during the 30's resulted from the inability of many low yielding orchards enterprises to withstand an extended period of low prices.

The increase in acreage since 1940 has been due primarily to favorable pear prices, and the replacement of plums by pears because of the difficulty in maintaining and developing healthy plum trees.

The pear acreage is located for the most part in the lower foothill region at elevations ranging from 200 feet to 2500 feet. Although the plantings are widely scattered they may be grouped into four general areas: (1) the Loomis area, south-east of Highway 40 between Rocklin and Auburn, (2) the Auburn Ravine area, west of Auburn, (3) the Auburn area, and (4) the Colfax area.

### Yields

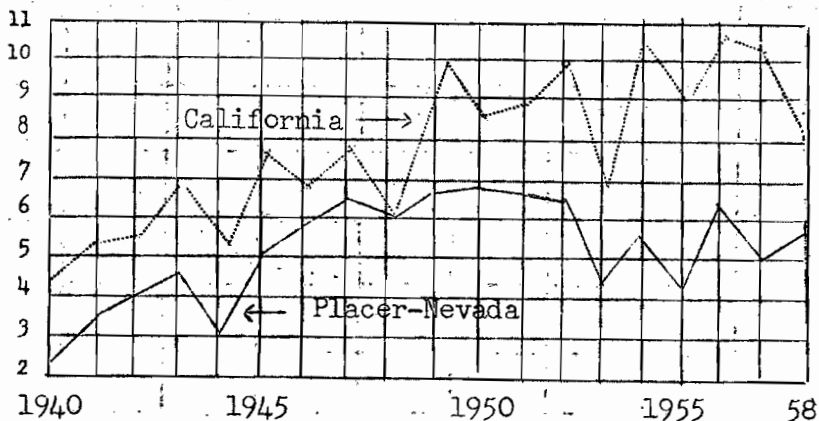
Average yields in Placer County have always been somewhat below the average for the state as shown in Figure #2 below.

Fig. 2

Average Bartlett yields

per bearing acre 1940-1958

Tons per acre



This is due primarily to the smaller average size of Placer County pear trees. Young trees, shallow soils, poor drainage, nonproductive portions of orchards (rock piles) and inadequate irrigation practices have been contributing factors.

There is considerable variation in yields between orchards, and yields exceeding 15 tons per acre are not uncommon. Increased yields since 1930 have been more than adequate to offset reduced acreages so that the annual production since 1946 is twice that of the years preceeding 1930.

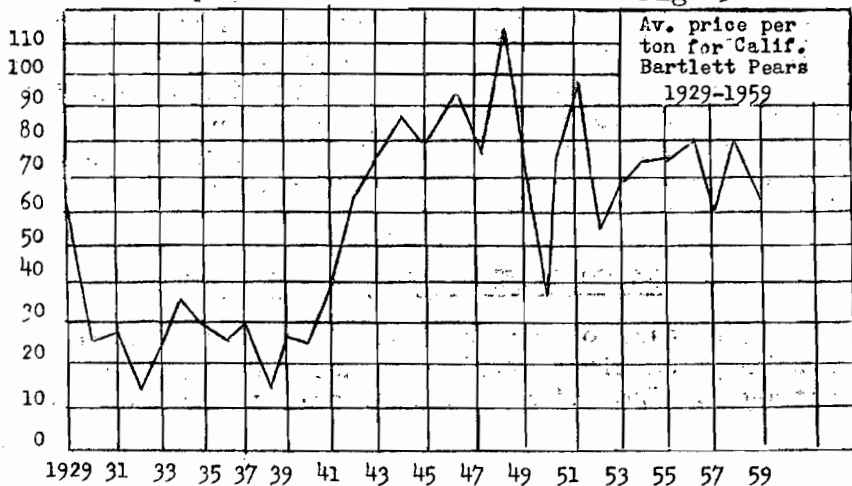
### Prices

Pear prices have been erratic during the past 25 years, not only during the unfavorable price years of the 30's, but also during the more profitable years of the 40's. Furthermore, they have reached levels below that of the cost of production in almost 50 per cent of these years.

Prices in Placer County approximate that of the state average as shown in Figure #3 below.

Dollars per ton

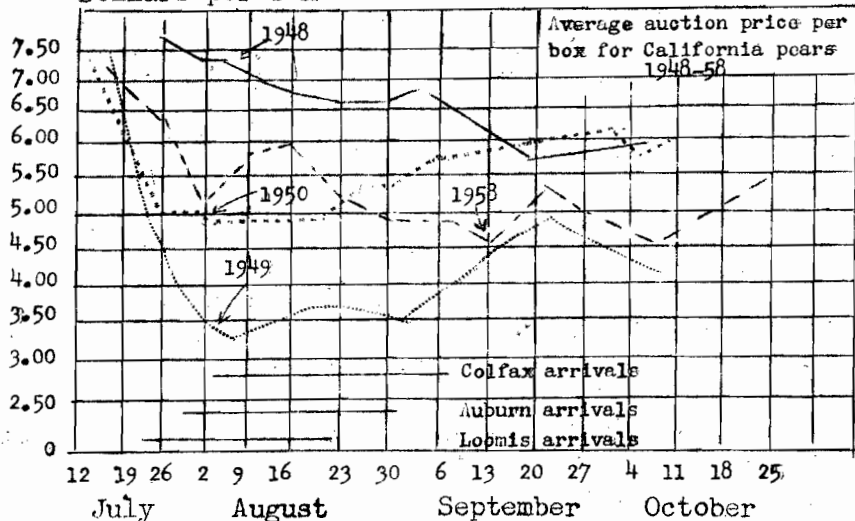
Fig. 3



In years of weak demand growers may receive less than the opening cannery price of the earlier districts. They often market their fresh pears during a midseason auction price slump. See Figure #4 below.

Fig. 4

Dollars per box



However not all areas are affected alike since the marketing season varies by districts within the county. The harvest season for the Loomis area is usually July 12th to August 13th, the Auburn area from July 20th to August 23rd, and the Colfax area from July 27th to September 12th. Pears will ordinarily reach the eastern markets 10 days after harvest although cold storage facilities may extend the season for 2 or 3 weeks for some growers in the Colfax area.

### FACTORS RELATING TO PRODUCTION

The soils of Placer County are fertile, but shallow, sometimes poorly drained, and lacking in nitrogen. The climate is favorable for production

of premium quality fruit, however, frost and hail damage is common. Water is obtained from either the Pacific Gas and Electric Co. or the Nevada Irrigation District. This water costs from 40 to 55 dollars a miners inch ( $11\frac{1}{4}$  g.p.m.) for the season or from \$5.25 to \$7.22 per acre foot. The topography is generally rolling which results in increased cultural costs. Rainfall and frost data for three communities at different elevations is as follows:

Community	Elevation	Av. Rainfall	Av. Last Spring Frost
Rocklin	239 ft.	22 in.	March 20th.
Auburn	1360 ft.	33 in.	March 9th.
Colfax	2418 ft.	47 in.	April 15th.

Frost and hail damage varies considerably within the same area so that no frost or hail areas as such can be outlined. It is recognized that frost damage occurs most frequently in the low flat areas or in draws and least frequently in the so called thermal belts. Hail damage is most severe along ridges.

### MARKETING FACILITIES

Two main outlets are available for Placer County pears, fresh and canned. Placer has been known primarily as a shipping district. Actually the fresh shipments to the east from lower Placer are on the decline. At present about 50% of the crop is sold for fresh consumption, although the Colfax area continues to ship most of its crop.

Price-wise, on the state level, the fresh outlet proved to be the most profitable from 1946 to 1952 by \$20.00 a ton.

Pears are delivered to grower owned or commercial shipping organizations (fruit sheds) in the communities of Colfax, Auburn, Newcastle, Penryn and Loomis. Fresh fruit for eastern shipment is graded, packed, precooled, and loaded into refrigerated railway cars or trucks. Fruit for processing is graded and loaded onto trucks destined for canning centers in Sacramento and San Jose. The grower is charged about \$1.50 per packed box and \$5.00 per cannery ton for this service. Sales are handled by the shipping organizations, processing fruit through cannery contracts and fresh fruit by direct (F.O.B.) or auction sales. The service of the following shipping organizations is available to growers.

<u>Shipping Organization</u>	<u>Location</u>	<u>Manager</u>
*Colfax Fruit Growers Assn.	Colfax	F.W. Viscia
*Auburn Fruit Exchange	Auburn	J. Denhart
American National Foods Inc.	Auburn	J. A. Leak
Mendelson Zeller Co.	Auburn	A. Lemos
American National Foods Inc.	Newcastle	F. Wrenn
*Newcastle Fruit Growers Assn.	Newcastle	R. Wellington
Pacific Fruit Exchange	Newcastle	L. Lagomarsino
*Penryn Growers Assn.	Penryn	H. Perry
Mountain Fruit Growers Assn.	Penryn	E. Beckett
American National Foods Inc.	Loomis	G. Kuykendahl
*Loomis Agency Calif. Fr. Exc.	Loomis	H. Struble
Loomis Fruit Growers Assn.	Loomis	H. Carlisle
Nash DeCamp Co.	Loomis	W. O. Francis
Pacific Fruit Exchange	Loomis	W. Jacobsen

\* Member, California Fruit Exchange



## SITUATION AND OUTLOOK

Many factors in the economic situation, technical developments, and consumer preferences can change the outlook for pears. The present indications are that the acreage of pears is adequate to produce a supply which will bring fairly profitable prices in years of average production and purchasing power. Good, well-managed orchards producing 10 tons or more per acre should remain relatively profitable.

## GETTING INTO THE BUSINESS

The experiences of pear growers in Placer County is that 40 acres or more of bearing trees are necessary to provide a satisfactory income for a family over a period of years. Smaller acreages usually require that the operator do some outside work as a supplemental source of income.

### Investment Required

The investment required for a pear orchard will vary with the soil, topography, age of tree, yields, and many other factors. A study of eleven orchards in Placer County in 1958 showed the following original investment not including dwelling.

	<u>Per Acre</u>
Land	\$ 600.00
Trees	900.00
Irrigation system	100.00
Buildings	200.00
Equipment	512.75
Drainage system	<u>150.00</u>
	\$2462.75

Present costs to bring a pear orchard up to bearing age are about \$900 per acre. Irrigation facilities may cost up to \$200 per acre where permanent sprinkler systems are installed. One should be able to get by with somewhat less investment in buildings and equipment than shown above.

## Buy or Develop an Orchard

It takes about 10 years to bring a pear orchard to the point where the yields are sufficient to cover the cost of operation. During this period there is little income from the orchard. Revising the previous investment figures to include present costs of establishing the orchard gives a cost of about \$1600 per acre, or \$64,000 for 40-acre orchard.

Purchase prices of existing orchards have to allow for depreciation on the various items, giving a present value of about \$1,200 per acre for good orchards, producing at least 10 tons per acre.

These are true agricultural values and do not consider speculation value.

### CULTURAL PRACTICES

Cultural practices are rather complex and extremely important. The superficial treatment of these practices and prospective growers should visit the farm advisors office for detailed information on each subject.

Pear growers in Placer County are occupied with major tasks at the times indicated below:

Calendar of Operation for Major Tasks

	Irrigate	Spray	Prune	Harvest	Cultivate or Mow	Fertilize
Oct.						
Nov.						
Dec.			X			
Jan.		X	X			
Feb.			X			X
March		X			X	
April		X				
May	X	X				
June	X	X			X	
July	X	X		X		
August	X			X		
Sept.	X	X			X	

## Spraying

Seven full volume sprays are customarily applied to Placer County Pear orchards at the rate of 300 to 800 gallons per acre with blower sprayers. Two or more sprays and dusts for stinkbug and blight control are recommended but not universally used. A minimum spray program would be as follows:

Time	Insect or Disease Controlled	Material Used
1. Dormant (January)	Scales and mite eggs	Dormant oil
2. Cluster bud (March)	Scab	Lime sulfur plus wettable sulfur
3. Petal fall (April)	Worms and spidermites	DDT plus acaricide
4. 3 wks. after petal fall (May)	Worms and spidermites	DDT plus acaricide
5. 9 weeks after petal fall (June)	Worms and spidermites	DDT plus acaricide
6. July	Fruit drop	Napthalene acetic acid hormone
7. After harvest (September)	Blister mites	Lime sulfur plus wettable sulfur

## Irrigation

Orchards are under irrigation from May through September. From 12 to 20 applications are made at 5 to 14 day intervals. Water is applied at the rate of 0.25 acre inches per acre for each day of the interval. The interval is dictated by the depth of the soil. Hence, 1.8 inches would normally be applied in irrigations 7 days apart and 3.6 inches in irrigation 14 days apart.

Although growers purchase 46 acre inches annually ( $\frac{1}{2}$  miners inch) for each acre, only 38 inches is actually applied because of the difficulty in using continuous flow water.

The water is distributed by furrows (rills) or through portable sprinklers, the latter method being preferred. In the furrow system very small heads of water, regulated by sacks, paper, or rocks, are run down the slope. Commonly only 1 furrow per tree row is used. The water is run in each furrow from 12 to 24 hours. In the sprinkler system portable pipe, extended from under ground main lines is laid down each row. Sprinkler heads are spaced 20 feet apart and the water run for 11 hours in each location.

### Pruning

Although there are several methods of training young trees and pruning mature trees, the following method is probably the most common.

Three to five upright primary scaffolds are selected at the first dormant pruning and headed at 24 to 30 inches. These uprights are continued upward in 24-30 inch increments until they reach a height of 16 feet. Beginning with the second dormant pruning considerable wood is left along the uprights. This fruiting wood is progressively thinned in succeeding years until only those which have developed into hanging secondary scaffolds remain. Fruiting wood is then hung from these secondaries.

Mature trees are lightly pruned and appear bushy. Each year some new growth of medium vigor is left and some older fruiting wood is removed. The trees are headed only in the tops.

## Harvest

Pears are harvested by hourly paid crews of local people supplemented with Mexican Nationals. The prevailing wage rate is 85 cents an hour. Fruit is removed from the orchard by tractor drawn trailers, loaded onto trucks and hauled to the packing sheds. Picking bags and 10 foot ladders are the principle equipment used by the crews. Workers are ordinarily housed on the farm.

## Cultivation and Mowing

Orchards are cultivated or mowed at least three times during the year: prior to the irrigation season, just before harvest, and in early fall. The number of times and kind of operation depends upon the system of irrigation and the type of vegetation in the orchard. Really clean cultivation is seldom practiced. A furrow irrigated orchard is often cultivated in March, ditched in April, mowed in July, and cultivated again in October. A sprinkler irrigated orchard, with a vigorous permanent grass cover crop, will be mowed at monthly intervals from May through September.

## Fertilizer

Although manure and several types of commercial fertilizers are used, the most common practice is to apply annually in February 500 pounds of ammonium sulfate per acre. Numerous orchards planted in the red soils from Newcastle north have responded to applications of borax. In these deficient orchards borax is applied at the rate of 100 pounds per acre every 4 or 5 years. A few orchards respond to heavy applications of potash. Zinc responses have also been observed.

## GOVERNMENT AND INDUSTRY PROGRAMS

Growers are directly influenced by a number of government and industry programs which include three marketing orders, two groups of laws, and two trade associations. Their participation in these programs, which is mandatory in some cases and voluntary in others, is in addition to their membership in shipping and marketing organizations.

### Marketing Orders

Marketing orders which are sanctioned by law are designed to increase returns to growers by establishing and maintaining orderly market conditions. They are established, controlled, and financed by the industry.

<u>Order</u>	<u>Function</u>	<u>Cost to grower in 1958</u>
1. Market order for fresh Bartlett pears	Regulates grade and size of pears sold for fresh consumption within California and Promotes pear sales through publicity releases, dealer-service work, and a home economics program.	\$0.09 per standard pear box
2. Pear Zone No. 1	Promotes sale of canned fruit	\$1.00 per ton
3. California Tree Fruit Agreement	Promotes fresh pear sales outside of California by publicity releases, dealer-service etc.	\$0.05 per standard pear box

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## Laws

Growers are concerned primarily with two groups of laws. The California Agricultural Code provides for the standardization of grade, labeling, pack, containers etc. The Miller Amendment to the Food, Drug, and Cosmetic Act establishes how much pesticide chemical residues may remain on fruit at the time it is offered for sale.

## Trade Associations

At least two trade associations are prominent in the local pear picture. They are the California Grape and Tree Fruit League and the California Canning Pear Association.

The League is a non-profit trade association, with voluntary membership, which represents the industry in legislation matters and with public carriers. At present they are also concerned with reopening the export markets and with packaging research.

The Canning Pear Association is a non-profit organization, with voluntary membership, which cooperatively sells its members' pears. Their principle objective is to stabilize prices for canning pears. An assessment of 5% of the canning pear price is made and refunds are made on monies not used. The net cost to growers in 1959 was \$0.625 per ton.

## COST OF PRODUCTION\*

A study in 1958 of eleven Placer County pear orchards including a total of 300 acres gives an indication of production costs.

	<u>Cost per acre</u>
Cultural cost	
Prune 30 min/tree	\$62.50
Brush removal	4.60
Fertilize	15.22
Spray 7 times	98.50
Dust 3 times @ 0.4	12.39
Cultivation	5.40
Irrigate 15 times	51.50
Prop or wire	11.70
Taxes and Insurance	30.00
Miscellaneous	<u>15.60</u>
TOTAL CULTURAL	\$307.41
Harvest	
Pick 600 boxes	129.80
Load and haul	48.00
Supervise	6.25
TOTAL HARVEST	\$184.05
TOTAL CASH AND LABOR	\$491.46
Depreciation (Annual Costs) Interest	198.15
Total cost per acre @ 15 tons/acre	\$689.61
Total cost per acre @ 10 tons/acre	618.76
Total cost per acre @ 5 tons/acre	557.36
Cost per ton @ 15 tons/acre	45.98
Cost per ton @ 10 tons/acre	61.88
Cost per ton @ 5 tons/acre	111.47

\* "Sample Inputs and Costs for Pears, Plums, and Peaches in Placer County, California" by Phillip S. Parsons and Joseph W. Osgood, Jan. 1959



The following is a partial list of current publications available at your University of California Farm Advisor's office of interest to fruit growers:

1960 Placer County Spray Schedule for Pears, Plums, Peaches and Apples

1960 Upper Placer-Nevada County Spray Schedule for Pears, Plums, Peaches and Apples

C 434 Pollination Requirements of Fruit and Nuts

C 466 Fertilizers and Cover Crops for California Orchards

C 471 Propagation of Temperature-Zone Fruit Plants

B 725 Cherry Rootstocks in California

C 478 Pests of Pears

X 179 Deciduous Orchards in California Winters

C 444 Pruning Deciduous Fruit Trees

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