pear cost study

for

sonoma county

UC COOPERATIVE EXTENSION

AGRICULTURAL EXTENSION-SERVICE
UNIVERSITY OF CALIFORNIA
INTRODUCTION

This cost study sets forth information to enable an understanding of the costs of producing a crop of pears in Sonoma County. It may be used as a convenient guide in analyzing an individual orchard situation.

The figures in this publication resulted from grower's records. Twenty-five other growers have reviewed the study and find both the operations and costs to be typical under the conditions set forth.

The value of this publication is mainly in its use as a guide to analyze a single orchard situation and for budgeting purposes. It is not intended that these data be used to establish averages for cultural practices, costs to perform a job or for price bargaining purposes. Price is a result of supply and demand rather than the cost to produce in any one year.

Two blank columns have been provided on the analysis sheet for your use to compare costs. Use the cost categories and existing figures in the study as a guide in calculating individual orchard profit or loss. Costs projected against a given sales price and productive level give this answer.

Growers who participated in this study supplied their actual costs on all practices, then through arbitration agreed that the figures used are a fair and honest appraisal. These are the usual practices under current costs. Orchards used for comparison are mature trees and for all practical purposes, represent a complete stand. The 15-ton-per-acre yield, while slightly above the county average, is considered typical of commercial plantings in Sonoma County.

few, are factors which force a shift in production and a noticeable change in long-term management. Growers must lower production costs and increase yields to meet competition, stay alive and make a profit.

Selection of the correct rootstock and a careful insect control program is necessary to stay ahead of Pear Decline. The pear industry has not retreated on the face of this problem, but rather has increased plantings to meet it. Growers handle this disease as they would rodent damage, oakroot fungus, crown rot and other problems and have continued to plant new orchards and make replacements in worthy stands.

The new concept for pear orchards is more trees per acre than was common in old plantings. New plantings, either hedgerowed or closely spaced, are resulting in reducing production costs. Pruning, spraying and harvest costs have been reduced under good management practices with higher per-acre profits as a result. Hedgerows with tree densities of over 300 per acre, closely spaced squares, diamonds or rectangular patterns, to increase numbers well over 200 trees per acre, will challenge the productivity of old orchards, with 75 to 100 trees. The concept of huge trees occupying large areas of land is questionable. Smaller trees, closely spaced, offer real advantages for good management and are more noticeable every year in California orchards.

Spray costs are an expensive part of pear growing. Spray equipment has changed from the hand gun method of application to the speed sprayer and now to concentrate or low-volume sprayers to further reduce costs. Concentrate sprayers cover as much as six times the area from one tank load compared to the high-volume speed sprayer. Chemical costs can sometimes be reduced by as much as twenty-five per cent by using concentrate equipment.

Chemical weed control is beginning to play a major role in reducing tillage costs. With the use of
new herbicides, the need for hand hoeing around the tree is greatly reduced if not eliminated as is the hazard of working tillage equipment close to tree trunks.

WHAT IS A TON OF PEARS WORTH?

The sale value of a crop is what the buyer is willing to pay for it. The cost to produce may remain the same but price can fluctuate widely depending on the quantity and quality of the product to be sold. The grower is faced with the problems of investing in advertising to promote consumption, supporting research to solve unanswered questions and producing within acceptable margins of profit or changing to other crops which offer a more reasonable return on invested capital and management skills. Some growers will show profits by regulating input costs and reaching the needed yields while others will experience continued loss. Neither can justify how much a pear sells for by how much it costs to produce.

Is this your triangle for success?

High Yield

$ Quality Product

Good Salesmanship

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Compiled by Kim O. Roberts, Farm Advisor, and Burt Burlingame, Extension Economist
Revised 07/1500 -7-
SAMPLE COSTS TO PRODUCE PEARS IN SONOMA COUNTY - SPRINKLER IRRIGATED - 1966

Based on an 80-acre orchard with a yield of 15 tons per acre. Man labor at $1.50 plus Social Security and Compensation Insurance, $1.64 per hour and $1.75 plus Social Security and Compensation Insurance, $1.91 per hour. Cash costs per hour: 30-40 HP wheel and crawler tractors $1.20 and $1.60, fork lift $1.00 truck @ $2.00 and sprayer @ $4.00.

<table>
<thead>
<tr>
<th>Sample Costs</th>
<th>Your Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>per acre</td>
<td>Per Ton</td>
</tr>
<tr>
<td>per Acre</td>
<td>Per Ton</td>
</tr>
</tbody>
</table>

**PRE-HARVEST CASH COSTS:**

- Pruning: 100 trees @ $1.25 + Soc. Sec. and Comp. Ins. = $1.36
  - $146.88
- Brush disposal: 3 man & 1 tractor hours
  - 6.79
- Fertilize: once - 0.6 man & 0.5 tractor hours
  - 1.95
- Fertilizer: 200 lbs. N @ 11¢
  - 22.00
- Spray: 8 times - 5 hrs. man, tractor & sprayer
  - 37.55
- Spray material
  - 64.00
- Dust for blight: 6 times-1.5 hrs. man & tractor
  - 4.67
- Dust: 180 lbs. @ 10¢
  - 18.00
- Cut blight and inspect: 5 man hours
  - 8.20
- Irrigate: 4 times - 6 man hours
  - 9.84
- Water: power to apply 2 acre feet @ $4
  - 8.00
- Cultivate: 4.5 man, 1.5 crawler & 3.0 wh. trac hrl
  - 14.60
- Misc. labor: 8 man, 1 tractor & 2 truck hours
  - 19.13
- Misc. material
  - 8.00
- County taxes
  - 32.50
- Office, car, int. on opr, capital, etc.
  - 30.32
- Repairs, except tractor, truck & sprayer
  - 6.00

**TOTAL PRE-HARVEST CASH AND LABOR COSTS**

- $438.93
- $29.26

**HARVESTING COSTS:**

- Picking at $6 per 1200 lb. bin + Soc. Sec. and Comp. Ins. @ 54¢
  - 163.50
  - 10.90
- Move & load bins, supervis: 9 man & 8 fork lift
  - 25.19
  - 1.68
- Hauling: 5 hours man & truck
  - 19.55
  - 1.20

**TOTAL HARVESTING COSTS**

- $208.24
- $13.88

**TOTAL CASH AND LABOR COSTS**

- $647.17
- $43.14

**DEPRECIATION COSTS:** (per acre on 80 acres)

- Trees: cost $1,500 - 40 years
  - 37.50
- Bldgs. for equip. $50-25 yrs; housing $100-30 yrs @ 5.33 per year
  - 37.50
- Irrigation facil (sprinkler) cost $240-Av. 16 yrs @ 15.00
  - 37.50
- Tractors, truck, pickup and fork lift:
  - cost $250 - 12 1/2 years
  - 20.00
- Sprayer and duster: cost $90 - 14 yrs.
  - 6.42
- Tillage & other equip.: cost $110 - 10 yrs.
  - 11.00

**TOTAL DEPRECIATION COSTS**

- $95.25
- $6.35

**TOTAL CASH AND DEPRECIATION COSTS**

- $742.42
- $49.49

**INTEREST ON INVESTMENT @ 6%:** (per acre on 80 acres)

- Trees: on 1/2 cost ($750)
  - 45.00
- Bldgs. for equip. & housing: on 1/4 cost ($75)
  - 4.50
- Irrig. facil. (sprinkler): on 1/4 cost ($120)
  - 7.20
- Tractors, truck, pickup & fork lift: 1/4 cost ($125)
  - 7.50
- Sprayer and duster: on 1/4 cost ($45)
  - 2.70
- Tillage & other equip.: on 1/4 cost ($55)
  - 3.30
- Land at $1,200
  - 72.00

**TOTAL INTEREST ON INVESTMENT**

- $142.30
- $9.48

**TOTAL COST OF PRODUCTION 1/**

- $884.62
- $58.97

1/ Does not include any cost for management. This is sometimes calculated at 5% of gross income.

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YIELD EFFECT ON COSTS

This cost study is based on 80 acres of orchard which uses the same type of equipment. A single crop or several types of fruit production share in costs proportionally to use, depending on the individual grower operation.

The 15-ton yield used in the study is typical of per-acre production of orchards studied. In the chart which follows, costs per ton at varying yields are compared when inputs or per-acre costs are held constant except for harvesting which is figured at $13.88 per ton.

COSTS PER TON AT VARYING YIELDS
(Inputs and costs per acre constant except harvesting at $13.88 per ton)

<table>
<thead>
<tr>
<th>Yield, tons per acre</th>
<th>8</th>
<th>12</th>
<th>16</th>
<th>20</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cash &amp; Labor</td>
<td>$68.75</td>
<td>$50.46</td>
<td>$41.31</td>
<td>$35.83</td>
<td>$32.17</td>
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<tr>
<td>Depreciation</td>
<td>11.91</td>
<td>7.94</td>
<td>5.95</td>
<td>4.76</td>
<td>3.97</td>
</tr>
<tr>
<td>Interest</td>
<td>17.77</td>
<td>11.85</td>
<td>8.89</td>
<td>7.11</td>
<td>5.92</td>
</tr>
<tr>
<td>Total Cost of Production</td>
<td>$98.43</td>
<td>$70.25</td>
<td>$56.15</td>
<td>$47.70</td>
<td>$42.06</td>
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</tbody>
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PRACTICE EFFECT ON COSTS

Major changes in orchards are rare but sometimes necessary in order to maintain profitable operations. When major changes are initiated by a substantial group of growers, it becomes evident that to not plan and progress with such trends will mean a serious production handicap.

Problems develop in many forms. Pear Decline, high land values, the inability to produce competitive yields and show a profit, to mention a

TYPES OF COSTS

Three input categories are included in this study: (1) Cash Costs, (2) Depreciation Costs, and (3) Interest on Investment Costs. Each must be a part of the total picture as they are a true part of the cost of a ton of pears.

Cash Costs are those annual expenditures sometimes called out-of-pocket costs—monies paid for the fertilizer, pruning, spraying, etc., where a flow of capital is obvious.

Depreciation Costs. Trees get old and must be replaced, irrigation equipment, tractors, trucks and other equipment wear out and must be replaced. These costs (which do not include regular maintenance such as gas, oil, repairs, etc.) too, are a real expense and must be accounted for annually.

Interest on Investment is, all too often, ignored as a cost except when interest is actually paid on borrowed capital. However, all capital whether invested in bonds or stocks, in fruit growing or any other business commands a return which is an important part of total production costs. For purposes of this study, a fair rate of interest is considered to be 6%. This is figured on one-half the original cost of depreciable items and full value on land. Those using the cost table can substitute any interest rate which they think would be more appropriate for their purpose.

PROFIT OR LOSS

Yield (tons) per acre times price per ton less costs per acre equals profit or loss per acre. At any given price, the higher the yield, the higher the gross income, the greater the opportunity for higher profit as long as costs of obtaining such yields are in line with good management practices.