Budget Record Numbers 256-259

1983
SAMPLE PRODUCTION COSTS
ESTABLISHMENT COSTS FOR STONE FRUIT ORCHARD
(PEACHES, NECTARINES, PLUMS)
Tulare, Fresno & Kings Counties

by
J. LaRue, Tulare Co., F. Yoshikawa, Fresno Co.,
and B. Beede, Kings Co., Farm Advisors

and
K. Klonsky, Farm Management Specialist, U.C. Davis

Costs given in this sample study are for those of a typical well managed orchard and are not intended to reflect an average of all orchards in Tulare, Fresno and Kings Counties.

This study is based upon a 10 acre block out of a 40 acre total fruit orchard. The same machinery, pump and some other costs are shared on the whole orchard.

Practices listed are based on those considered typical production procedures. Sample costs given for labor, materials, equipment and contract services are based on 1983 figures. Interest and depreciation are based upon the cost of new equipment and recent land purchases. Some costs or practices listed in this study may not be applicable to your situation. The study is intended as a guide only.

For explanation of calculations used for the study refer to the attached cost estimate assumptions or call Agriculture Economics Extension, University of California, Davis, California (916) 752-3563.
COST ESTIMATE ASSUMPTIONS - 1st YEAR

1st year Establishment costs for a Stone Fruit Orchard (peaches, nectarines, plums) Tulare, Fresno and Kings Counties 1983
By J. LaRue, F. Yoshikawa & B. Beede, Farm Advisors - K. Klonsky, Specialist

10 acres of a 40 acre orchard - 108 trees/acre
Furrow irrigation: 10 ac. in. total 50% district water, 50% well water
Land owner basis

1. 1st establishment year is 15 months - October through December
   The Budget Generator program only allows for a 12 month crop year. Only
   months 1-12 are shown in this budget. No budget for months 13-15.

2. Land preparation in October:
   Contract land leveling (laser) $125.00/acre
   Contract chiseling $ 60.00/acre

3. Fumigate soil for nematodes in October:
   Fumigation often done at the same time as chiseling.
   Materials - soil fumigant 40 gal/acre @ $7.50/gal = $300.00/acre
   Application - contract $17.00/acre

4. Disc in October and November:
   Offset disc pulled by 65hp diesel tractor - 1 pass in orchard each month

5. Plant in February:
   Trees, non-patented variety (1/2 inch) 108 trees/acre @ $3.05/tree = $329.40/acre
   (Add approximately $1.75/tree for royalty if patented variety)
   Planting, marking and pruning (head back) - contract
   108 trees/acre @ $.75/tree = $81.00/acre  hand done (not machine planting)
   Painting: Materials $5.00/acre, Labor 1 hr/acre @ $5.25/hr = $5.25/acre

6. Furrow in March, May, July:
   Furrower, 2 shovel pulled by 65hp diesel tractor - 1 pass in orchard each month
   March
   May
   July weed control

7. Fertilize in May:
   Materials .125 lbs N /tree x 108 trees/acre @ $.34/lb = $4.59/acre
   Application - contract $3.50/acre

8. Irrigation:
   Furrow irrigation system includes:
   Pipeline $300/acre x 40 acres $12,000
   Well - 120ft, 10" gauge casing 2,300
   $14,300
   Pump: 15hp, 70 ft lift, 450 gal/min = 1.0 ac. in./hr, $7,900
   Irrigation labor - 1 hr/application/acre
   9 irrigations - 10 ac.in. total:  5 ac.in. district water
   5 ac.in. well water
   District water cost: $14.00/acre 100% rights
   First irrigation or two is well water, district water used until
   unavailable, then well water for balance of season.
COST ESTIMATE ASSUMPTIONS - 2nd YEAR

1. Prune in January:
   2 min/tree \times 108 \text{ trees/acre} \left( \div 60 \text{ min/hr} \right) = 3.6 \text{ hrs/acre}
   3.6 \text{ hrs/acre} \times $5.25/\text{hr} = $18.90/\text{acre}

2. Replant in February:
   Trees, non-patented variety 2 trees/acre \times $3.05/\text{tree} = $6.10/\text{acre}
   (Add approximately $1.75/tree for royalty if patented variety)
   Labor: 1/2 hr/tree \times 2 \text{ trees/acre} \times $5.25/\text{hr} = $5.25/\text{acre}

3. Furrow in March, May, July:
   Furrower, 2 shovel pulled by 65ph diesel tractor - 1 pass in orchard each month
   March
   May
   July weed control

4. Fertilize in May and December:
   Materials - .25 \text{ lbs N/tree} \times 108 \text{ trees/acre} \times $ .34/\text{lb} \times 2 \text{ appl.} = $18.36/\text{acre}
   Application - contract $3.50/\text{acre} \times 2 \text{ applications} = $7.00/\text{acre}

5. Irrigation:
   9 irrigations - 14 ac.in. total: 7 ac.in. district water
   7 ac.in. well water
   First irrigation or two is well water, district water used until unavailable, then well water for balance of season.

   April 1x 1.3
   May 1x 1.3
   June 2x 3.5
   July 2x 3.5
   August 2x 3.2
   September 1x 1.2
   Total ac.in. 7.0 district 7.0

6. Pest control:
   Jan: Basic zinc
   3 \text{ lb/100 gal of water} \times 1.25 \text{ (for 125 gal/ac)} \times $ .60/\text{lb} = $2.25/\text{acre}
   Spray oil
   1 \text{ ga/100 gal of water} \times 1.25 \text{ (for 125 gal/ac)} \times $3.50/\text{gal} = $4.38/\text{acre}
   Parathion (25wp)
   2 \text{ lb/100 gal of water} \times 1.25 \text{ (for 125 gal/ac)} \times $1.25/\text{lb} = $3.13/\text{acre}
   Basic Cooper
   4 \text{ lb/100 gal of water} \times 1.25 \text{ (for 125 gal/ac)} \times $1.10/\text{lb} = $5.50/\text{acre}
   Total dormant materials $15.26/\text{acre}
   Dormant spray to control San Jose scale, peach twig borer, peach leaf curl, mealy plum aphid, zinc deficiency and over wintering mite eggs.

   July: Miticide .25 \text{ lb/acre} \times $20.00/\text{lb} = $5.00/\text{acre}
   Application - speed sprayer, 500 gal pulled by 65ph diesel tractor
   - 1 pass in orchard each month

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7. Weed control in May-September and December:
   May-Sept: Labor (hoeing and touch up spraying) 1 hr/ac @ $5.25/hr = $5.25/acre
   Materials - additional spray
   December: Materials pre-emergence herbicide $12.00/acre
   Application - contract $7.00/acre

8. Disc in May, July, October:
   Offset disc pulled by 65hp diesel tractor - 1 pass in orchard each month
   May before furrowing
   July before furrowing
   October before pruning

9. Misc. Labor:
   4 hrs/acre @ $5.25/hr = $21.00/acre
   1/3 hour charged each month for 12 months

10. Pickup: 25 miles/acre/month

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1. Prune in January:
   5 min/tree \times 108 \text{ trees/acre} \left( \div 60 \text{ min/hr} \right) = 9 \text{ hrs/acre}
   9 \text{ hrs/acre} @ $5.25/\text{hr} = $47.25/\text{acre}
   Brush shredding - contract $10.00/\text{acre}

2. Furrow in March, May, July:
   Furrower, 2 shovel pulled by 65hp diesel tractor - 1 pass in orchard each month
   March prior to frost
   May after thinning
   July weed control

3. Fertilize in May and December:
   Materials - .375 lbs N/tree \times 108 \text{ trees/acre} @ $.34/\text{lb} \times 2 \text{ appl.} = $27.54/\text{acre}
   Applications - contract $3.50/\text{acre} \times 2 \text{ applications} = $7.00/\text{acre}

4. Irrigation:
   Irrigation labor - 1 hr/application/acre
   9 irrigations - 28 ac.in. total:
   14 ac.in. district water
   14 ac.in. well water

   First irrigation or two is well water, district water used until unavailable, then well water for balance of season.

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<th></th>
<th>well</th>
<th>district</th>
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<tr>
<td>July</td>
<td>2x</td>
<td>7.0</td>
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<tr>
<td>August</td>
<td>2x</td>
<td>6.5</td>
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<td>Total ac.in.</td>
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   An irrigation in March is possible for frost protection.

5. Pest control:
   Jan: Basic zinc
   3 lb/100 gal of water \times 2.5 (for 250 gal/ac) @ $.60/\text{lb} = $4.50/\text{acre}
   Spray oil
   1 gal/100 gal of water \times 2.5 (for 250 gal/ac) @ $3.50/gal = $8.75/\text{acre}
   Parathion (25wp)
   2 lb/100 gal of water \times 2.5 (for 250 gal/ac) @ $1.25/\text{lb} = $6.25/\text{acre}
   Basic copper
   4 lb/100 gal of water \times 2.5 (for 250 gal/ac) @ $1.10/\text{lb} = $2.75/\text{acre}
   Total dormant spray cost = $18.25/\text{acre}

   Dormant spray to control San Jose scale, peach twig borer, peach leaf curl, mealy plum aphid, zinc deficiency and over wintering mite eggs.

   July: Miticide .5 lb/acre @ $20.00/\text{lb} = $10.00
   Application - speed sprayer, 500 gal pulled by 65hp diesel tractor
   - 1 pass in orchard each month

6. Thin Fruit in April:
   Labor - 16.2 hrs/acre @ $5.25/\text{hr} = $85.00/\text{acre}
7. Weed control in May-September and December:
   May-Sept: Labor (hoeing and touch up spraying) 1 hr/ac @ $5.25/hr = $5.25/acre
   Materials - additional spray = $5.00/acre
   $10.25/ac (labor & mat.) divided by 5 months = $2.05/ac each month
   December: Materials pre-emergence herbicide $12.00/acre
   Application - contract $7.00/acre

8. Disc in May, July, October:
   Offset disc pulled by 65hp diesel tractor - 1 pass in orchard each month
   May    before furrowing
   July   before furrowing
   October before pruning

9. Misc labor:
   4 hrs/acre @ $5.25/hr = $21.00/acre
   1/3 hour charged each month for 12 months

10. Pickup: 25 miles/acre/month

11. Harvest costs and value of fruit must be figured by crop and variety.
    Some fruit could possibly be harvested in the third year.

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COST ESTIMATE ASSUMPTIONS - 4th YEAR

1. Variations from these costs will occur depending on crop, variety, conditions, etc.

2. Prune in January:
   15 min/tree x 108 trees/acre (4 60 min/hr) = 27 hrs/acre
   27 hrs/acre @ $5.25/hr = $142.00/acre
   Brush shredding - contract $10.00/acre

3. Tie limbs in February:
   Labor and materials: 108 trees/acre @ $.52/tree = $56.16/acre

4. Furrow in March, May, July:
   Furrower, 2 shovel pulled by 65hp diesel tractor - 1 pass in orchard each month
   March prior to frost
   May after thinning
   July weed control

5. Fertilize in May and October:
   Materials May: .34 lbs N/tree x 108 trees/acre @ $.34/lb = $12.48/acre
   Oct: .66 lbs N/tree x 108 trees/acre @ $.34/lb = $24.24/acre
   Total materials $36.72/acre
   Application - contract $3.50/acre x 2 applications = $7.00/acre

6. Irrigation:
   First irrigation or two is well water, district water used until unavailable, then well water for balance of season.
   
<table>
<thead>
<tr>
<th>Month</th>
<th>Type</th>
<th>Amount</th>
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<tr>
<td>September</td>
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<tr>
<td></td>
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</tr>
</tbody>
</table>

   An irrigation in March is possible for frost protection.

7. Pest control:
   Jan: Basic zinc
   3 lb/100 gal of water x 4 (for 400 gal/ac) @ $.60/lb = $7.20/acre
   Spray oil
   1 gal/100 gal of water x 4 (for 400 gal/ac) @ $3.50/gal = $14.00/acre
   Parathion (25wp)
   2 lb/100 gal of water x 4 (for 400 gal/ac) @ $1.25/lb = $10.00/acre
   Basic copper
   4 lb/100 gal of water x 4 (for 400 gal/ac) @ $1.10/lb = $4.40/acre
   Total dormant spray = $35.60/acre
   Dormant spray to control San Jose scale, peach twig borer, peach leaf curl, mealy plum aphid, zinc deficiency and over wintering mite eggs.

   July: Miticide .8 lb/acre @ 29.00/lb = $16.00/acre
   Application - speed sprayer, 500 gal pulled by 65hp diesel tractor
   - 1 pass in orchard each month

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8. Thin fruit in April:
   Labor - 37.8 hrs/acre @ $5.25/hr = $198.45

9. Weed control in May-September and December:
   May-Sept: Labor (hoeing and touch up spraying) 1 hr/ac @ $5.25/hr = $5.25/acre
   Materials - additional spray = $7.50/acre
   December: Materials pre-emergence herbicide $12.00/acre
   Application - contract $7.00/acre

10. Disc in May, July, October:
    Offset disc pulled by 65hp diesel tractor - 1 pass in orchard each month
    May before furrowing
    July before furrowing
    October before pruning

11. Misc labor:
    4 hrs/acre @ $5.25/hr = $21.00/acre
    1/3 hour charged each month for 12 months

12. Pickup: 25 miles/acre/month

13. Production:
    Assuming 1/3 of full production in the 4th year.

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