1986
SAMPLE PRODUCTION & ESTABLISHMENT COSTS FOR FANTASIA NECTARINES
Tulare, Fresno & Kings Counties

by

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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 1986 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.
ESTABLISHMENT COST ASSUMPTIONS:

108 trees/acre
Furrow irrigation: 50% district water, 50% well water
Land owner basis

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

2. Fumigate soil for nematodes in October:
   Fumigation often done at the same time as chiseling.
   Materials: soil fumigant 40 gal/ac @ $7.50/gal = $350/acre
   Application - contract $17.00/acre

3. Disc in October and November:
   Year 1: Disc and float - .63 hours of labor and machinery
           4 times per year = $40.00/acre
   Years 2-4: Disc only - .63 hours of labor and machinery
              3 times per year = $25.00/acre

4. Plant in February:
   Year 1:
   Trees, non-patenteted variety (1/2 inch) 108 trees/acre
   @ $3.50/tree = $378.00/acre
   (Add approximately $1.75/tree for royalty is patented variety)
   Contract labor, 108 trees/acre @ $.75/tree = $81.00/acre
   and done (not machine planting)
   Painting: Materials - $5.00/acre, Labor - 1 hr/acre @ $5.50/hr = $10.50/acre
   Year 2:
   Replant in February 2 trees/acre @ $3.50/acre = $7.00/acre
   Contract labor, $2.00/acre

5. Prune and Train:
   Calculated for 108 trees/acre with a labor rate of $5.50/hr
   
<table>
<thead>
<tr>
<th>Year</th>
<th>Minutes/Tree</th>
<th>Hrs/Acre</th>
<th>Cost/Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>3.6</td>
<td>$19.80</td>
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<tr>
<td>3</td>
<td>5</td>
<td>9.0</td>
<td>$49.50</td>
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<tr>
<td>4</td>
<td>15</td>
<td>27.0</td>
<td>$148.50</td>
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</table>

6. Brush Disposal:
   Years 3 and 4: Contract @ $12.50/acre

7. Furrow in March, May, July:
   3 times each year, for .57 hour each time = $20/acre
8. Fertilize:
   Calculated for 108 trees/acre, with N @ $0.40/lb and a contract application cost of $4.25/acre per application.

<table>
<thead>
<tr>
<th>Year</th>
<th>Lbs of N Per Tree</th>
<th>Material Cost/Acre</th>
<th># Applications</th>
<th>Material Cost/Acre</th>
<th>Application Cost/acre</th>
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<tbody>
<tr>
<td>1</td>
<td>0.125</td>
<td>$5.40</td>
<td>May(1)</td>
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<td>$4.25</td>
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<td>2</td>
<td>0.250</td>
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<td>May&amp;Dec(2)</td>
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<td>3</td>
<td>0.375</td>
<td>$16.20</td>
<td>May&amp;Dec(2)</td>
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<td>4</td>
<td>0.340</td>
<td>$14.69</td>
<td>May(1)</td>
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<td>$4.25</td>
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<td></td>
<td>0.660</td>
<td>$28.51</td>
<td>Oct(1)</td>
<td>$28.51</td>
<td>$4.25</td>
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</tbody>
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9. Irrigation:
   Furrow irrigation system includes:
   Pipeline $300/acre x 40 acres = $12,000
   Well - 120 ft, 10" gauge casing = 2,300
   $14,300
   Pump: 15 hp, 70 ft lift, 450 gal/min = 1.0 ac.in./hr, $7,900
   Irrigation labor - 1 hr/application/acre 9 x per year
   District water cost: $15.00/acre 100% rights

<table>
<thead>
<tr>
<th>Year</th>
<th>Acre Inches</th>
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<tr>
<td>1</td>
<td>10</td>
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<tr>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>28</td>
</tr>
<tr>
<td>4</td>
<td>36</td>
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10. Pest Control:

**Materials:**

**July:** Miticide - @ $25.00/lb

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

Basic Zinc: 3 lb/100 gal of water @ $.70

Spray oil: 1 gal/100 gal of water @ $2.70

Parathion (25wp): 2 lb/100 gal of water @ $1.00/lb

Basic copper: 4 lb/100 gal of water @ $1.35/lb

<table>
<thead>
<tr>
<th>Year</th>
<th>Season</th>
<th>Materials</th>
<th>Amounts/Acre</th>
<th>Cost/acre</th>
<th>Cost/Ac</th>
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<td>1</td>
<td>July</td>
<td>Miticide</td>
<td>.25 lbs</td>
<td>$6.25</td>
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<td>2</td>
<td>Dormant</td>
<td>Basic Zinc</td>
<td>3 lbs/100 gal water</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>x 1.25 (125 gal/ac)</td>
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<td></td>
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<td>Spray Oil</td>
<td>1 gal/100 gal water</td>
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<td></td>
<td></td>
<td></td>
<td>x 1.25 (125 gal/ac)</td>
<td>$3.38</td>
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<td>Parathion</td>
<td>2 lbs/100 gal water</td>
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<td></td>
<td></td>
<td></td>
<td>x 1.25 (125 gal/ac)</td>
<td>$2.50</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Basic Copper</td>
<td>4 lbs/100 gal water</td>
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<td></td>
<td></td>
<td>x 1.25 (125 gal/ac)</td>
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<td></td>
<td>July</td>
<td>Miticide</td>
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<td>TOTALS:</td>
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<td>Basic Zinc</td>
<td>3 lbs/100 gal water</td>
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<td></td>
<td></td>
<td>x 2.50 (250 gal/ac)</td>
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<tr>
<td></td>
<td></td>
<td>Spray Oil</td>
<td>1 gal/100 gal water</td>
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<td></td>
<td></td>
<td></td>
<td>x 2.50 (250 gal/ac)</td>
<td>$6.75</td>
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<td></td>
<td></td>
<td>Parathion</td>
<td>2 lbs/100 gal water</td>
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<td></td>
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<td></td>
<td>x 2.50 (250 gal/ac)</td>
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<td>Basic Copper</td>
<td>4 lbs/100 gal water</td>
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<td>x 2.50 (250 gal/ac)</td>
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<td></td>
<td>July</td>
<td>Miticide</td>
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<td>Basic Zinc</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>x 4.0 (400 gal/ac)</td>
<td>$8.40</td>
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<td></td>
<td></td>
<td>Spray Oil</td>
<td>1 gal/100 gal water</td>
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<td></td>
<td></td>
<td></td>
<td>x 4.0 (400 gal/ac)</td>
<td>$10.80</td>
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<td></td>
<td></td>
<td>Parathion</td>
<td>2 lbs/100 gal water</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>x 4.0 (400 gal/ac)</td>
<td>$8.00</td>
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</tr>
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<td></td>
<td></td>
<td>Basic Copper</td>
<td>4 lbs/100 gal water</td>
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<td></td>
<td></td>
<td>x 4.0 (400 gal/ac)</td>
<td>$21.60</td>
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<tr>
<td></td>
<td>July</td>
<td>Miticide</td>
<td>.8 lbs</td>
<td></td>
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<td>TOTALS:</td>
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<td>$68.80</td>
<td>$24.00</td>
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11. Weed Control
   Labor: $5.50/hr  Materials: Roundup or Paraquat

<table>
<thead>
<tr>
<th>Year</th>
<th>Season</th>
<th>Labor and Application Costs/acre</th>
<th>Material Cost/acre</th>
<th>Total Cost/acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>May-Sep</td>
<td>3 hrs = $16.50</td>
<td>$7.50</td>
<td>$24.00</td>
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<tr>
<td>2</td>
<td>May-Sep</td>
<td>1 hr = $5.50</td>
<td>$7.50</td>
<td>$13.00</td>
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<tr>
<td></td>
<td>Dec</td>
<td>contract = $7.00</td>
<td>$12.00</td>
<td>$19.00</td>
</tr>
<tr>
<td>3</td>
<td>May-Sep</td>
<td>1 hr = $5.50</td>
<td>5.00</td>
<td>$10.50</td>
</tr>
<tr>
<td></td>
<td>Dec</td>
<td>contract = $7.00</td>
<td>$12.00</td>
<td>$19.00</td>
</tr>
<tr>
<td>4</td>
<td>May-Sep</td>
<td>1 hr = $5.50</td>
<td>7.50</td>
<td>$13.00</td>
</tr>
<tr>
<td></td>
<td>Dec</td>
<td>contract = $7.00</td>
<td>$12.00</td>
<td>$19.00</td>
</tr>
</tbody>
</table>

12. Labor Rates include benefits
   Machinery Operators $6.50/hr
   Irrigators $6.50/hr
   Field Labor $5.50/hr

13. Buildings and Equipment:
   40 Acres  Per Acre
   Farm shop 1500 sq ft. @ $12/sq ft. = $18,000 $450.00
   Tools and shop equipment 12,285 $307.13

14. Land owned:
   Land value $5500/acre  Land tax $55/acre
   County taxes: $71.34 (1% of land and equipment costs)

15. Bookkeeping and misc. office: $100/acre

16. Machinery costs:
PRODUCTION COST ASSUMPTIONS FOR FANTASIA NECTARINES:

1. Prune in January:
   Labor - 36 min/tree x 108 trees/acre (/60 min/hr) = 64.8 hrs/acre
   64.8 hrs/acre @ $5.50/hr = $356.40/acre

   Brush shredding - contract $12.50/acre

2. Pest Control:
   Jan: Basic zinc
   3 lbs/100 gals of water x 5 (for 500 gals/acre) = $10.50/acre
   Spray oil
   1 gal/100 gals of water x 5 (for 500 gals/acre) = $13.50/acre
   Parathion
   2 lbs/100 gals of water x 5 (for 500 gals/acre) = $15.00/acre
   Basic copper
   4 lbs/100 gals of water x 5 (for 500 gals/acre) = $27.00/acre
   Total dormant materials (1 application) = $66.00/acre

   Dormant spray to control San Jose scale, peach twig borer, peach leaf curl, zinc deficiency and overwintering mite eggs.

   Feb: Fungicide (benomyl) for brown rot 1.5 lbs/ac @ $14.5/lb = $21.75/ac
   Mar: Insecticide, petal fall, for thrips 1.25 lb/ac = $28.44/ac

   July: Fungicide (benomyl) for brown rot 1.5 lbs/ac @ $14.5/lb = $21.75/ac
   Insecticide, pre-harvest for thrips 1.25 lb/ac = $28.44/ac
   Miticide 1 lb/acre @ $25/lb = $25.00/ac

   Application - speed sprayer, 500 gals pulled by 65 hp diesel tractor, 1 pass in orchard each application. Contract @ $25/acre.

3. Tie limbs in February:
   Labor and materials, 108 tree/acre @ $.80/tree = $86.40

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

5. Thin fruit in May:
   Labor - 43.2 hrs/acre @ $5.50/hr = $237.60/acre
6. Fertilize in May and September:
   Materials May: .5 lbs N/tree x 108 trees/ac @ $.40/lb = $21.60/ac
   Sept: .75 lbs N/tree x 108 trees/ac @ $.40/lb = $32.40/ac
   Total materials $54.00/ac
   Application - contract $4.25/ac x 2 applications = $8.50/ac

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

8. Irrigation:

   Furrow irrigation system for 40 acres includes:
   Pipeline $275/acre x 40 acres plus $14,300
   Well, 120 ft, 10-12" casing $7,900
   Pump: 15 hp, 70 ft lift, 450 gal/min = 1 ac.in/hr $22,200

   District water cost: $15/acre    Well water cost: $17/acre
   Irrigation labor - 1 hr/application/acre

   First irrigation or two is well water, district water used until unavailable, then well water for balance of season.
   9 irrigations - 44 ac.in. total: 22 ac.in. district water
   22 ac.in. well water

   | Well      | District  |
   | acre      | acre      |
   | Inches    | Inches    |
   | April 1x 4|           |
   | May 1x 4  |           |
   | June 2x 11|           |
   | July 2x 11|           |
   | August 2x 10|         |
   | September 1x 4|       |
   | Total ac.in. 22.0| 22      |

   An irrigation in March is possible for frost protection

9. Herbicide and Weed control in May-September and December:

   May-Sept: Labor (hoeing and touch up spraying) and materials (additional spray) = $10/acre
   December: Materials, pre-emergence herbicide, $15.00/acre
   Application - contract $7.00/acre

10. Misc Labor:
   1 hr labor/acre @ $5.50/hr + $7.00 fuel and repair = $12.50/acre
11. Pickup: 300 miles/acre/year

12. Harvest in July:
   Contract harvest, 1300 lugs/acre
   Pick: $0.75/lug = $975/acre
   Haul: $0.10/lug = $130/acre
   Packing charges: $2.45/lug = $3185/acre
   Selling charges: $0.55/lug = $715/acre
   Misc. Labor: $15/acre

13. Labor rates include benefits:
   Machinery operators: $6.50/hr
   Irrigators: 6.50/hr
   Misc. Labor: 5.50/hr

14. Buildings and equipment
   Farm shop = 1,500 sq.ft. @ $12/sq.ft. 40 acres  
   Tools and shop equipment 12,285               Per acre
   $18,000  $450.00
   $307.13

15. Land owned:
   Land value $5,500/acre
   Land Tax = $55
   County tax = $71.34 (1% of land plus equipment costs)

16. Bookkeeping and misc office: $100/acre

17. Equipment costs:
   In allocating the equipment costs per acre, the following calculations
   were made: (a) "Original Cost" of equipment is the new cost including
   sales tax. (b) "Depreciation" is the new cost per acre divided by
   the years of life. (c) "Interest" on investment is figured as one-half
   of the new cost per acre multiplied by the interest rate. One-half of
   the new cost is the average value of the equipment during its useful
   life. (d) The investment per acre used in the cost study is calculated
   at 60% of the depreciation and interest costs for all new equipment to
   reflect a mix of new and used equipment.

18. Establishment costs per acre:
   20 year life of trees assumed.
   Establishment Year 1 $2451
   Year 2 1602
   Year 3 1741
   Year 4 1347 adjusted for credit from produ-
   The establishment costs are divided by 20 years. Interest on investment
   is calculated at 13%. The annual costs of investment in the trees are:
   $7141 duction
   depreciation: $114.07
   Interest: $106.21