

Estimated Capital Requirements
and Profitability of
Establishing and Producing a
High Density Fuji Apple Orchard
in Eastern Washington

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PREFACE

Enterprise costs and returns vary from one location to the next and over time for any particular farming operation. Variability stems from differences in the following:

- Capital, labor, and natural resources
- Type and size of machinery complement
- Cultural practices
- Size of farm enterprise
- Crop yields
- Input prices
- Commodity prices
- Management skill

Costs can also be calculated differently depending on the intended use of the cost estimate. The information in this publication serves as a general guide for establishing and producing a high density Fuji apple orchard in eastern Washington. To avoid drawing unwarranted conclusions for any particular farm or group of farms, the reader must examine closely the assumptions used. If they are not appropriate for the situation under consideration, adjustments in the costs and/or returns should be made.

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Introduction

In Washington State, there are two dramatic trends taking place in the apple industry. The first is a pronounced trend toward variety diversification away from (Red) Delicious strains. In 1986, Delicious strains accounted for 121,175 acres, 75% of the 160,980 total acres in apples in Washington State.² In 1993, Delicious strains accounted for 110,000 acres, 64% of the 172,000 total acres of apples in Washington State.³

In 1986 the number two variety grown in Washington State was Golden Delicious with 22,665 acres and number three was Granny Smith with 8,220 acres.² Fuji apple production was insignificant at that time. By 1993, Golden Delicious was still the number two variety grown in Washington State with 23,300 acres, however, Fuji was number three with 11,100 acres and Granny Smith was number four with 8,500 acres.³

A recent survey⁴ of tree fruit nurseries shows some significant changes are taking place. The Delicious strains show a decline from 35.7% of trees sold in 1989 to 17.9% of the trees budded for planting in 1998.

Fuji represents the most dramatic change of any of the new varieties. Fuji grew from 0.3% of apple tree sales in 1986 to 34.8% in 1991. However, interest in Fuji has declined due to price decreases and to production difficulties. Anticipated tree sales in 1998 will be 10.2% of total trees sold.

The second dramatic trend taking place in the Washington State apple industry is a trend towards more intensive plantings. Since intensively planted orchards have more trees per acre, a size-

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²Washington Fruit Survey, 1986, pages 8-12, Washington Agricultural Statistics Service, Washington State Department of Agriculture.

³Washington Fruit Survey, 1993, pages 6-13, Washington Agricultural Statistics Service, Washington State Department of Agriculture.

⁴Buckner, Lindsey, Tree Top, Inc., Personal Communication.

controlling rootstock is used to limit tree size. Rootstocks appropriate for high density Fuji orchards are M.9 and M.26. Due to the nature of these rootstocks, the trees are generally planted with a support system utilizing either wires or stakes for physical support of the trees.

A major advantage in higher density plantings is earlier production. Increased labor efficiency in the mature orchard is another significant advantage. The major disadvantage is the high capital requirements to establish such an orchard.

The objective of this study is to estimate the first five-year establishment cost of replanting to a high density Fuji orchard on M.9 rootstock in eastern Washington, along with the cost of maintaining a mature Fuji apple orchard. Growers, prospective growers, agricultural lenders, and others concerned with the Washington State apple industry should find the information helpful in estimating the physical and financial requirements of establishing a high density planting of Fuji and other non-spur varieties of apples.⁵ While the acreage and practices outlined may not fit all conditions, they represent current trends. This study is of particular interest when orchards are being considered for renewal.

Sources of Information

The assumptions used in this study were obtained from a group of experienced fruit growers who have recently replanted a portion of their apple orchards in eastern Washington to Fuji apples. Their current and projected future production practices and requirements for labor, equipment, and supplies are the basis for the assumptions used in this study and represent what this group of fruit growers consider to be the latest developments. Eastern Washington suppliers provided information on current prices for machinery, equipment, custom operations, chemicals, and power.

Budget Assumptions

The assumptions used in this study are the following:

1. Ten acres of an existing 100-acre orchard are replaced with a planting of Fuji apples on M.9 rootstock at a spacing of 4.5 x 13 feet, resulting in a total of

⁵Non-spur apple varieties, eg. Fuji, Gala, Golden Delicious, tend to have more vigorous or stronger growth than spur type apples, e.g. spur strains of Delicious. A non-spur apple variety requires a more dwarfing rootstock to be of a comparative size to a spur type apple variety grown on a more vigorous rootstock.

745 Fuji trees per planted acre. Trees will be trained to the modified axe system, a hybrid of slender spindle and vertical axe orchard systems. On weaker sites, e.g. shallow soils, very sandy soils, replant sites with lead arsenic contamination, it is suggested that the producer use a more vigorous rootstock or higher planting density.

2. The orchard is located in the apple growing region of eastern Washington. Because Fuji requires a relatively long growing season, not all orchard sites within the apple growing regions of Washington State will be ideal for the production of Fuji. Nevertheless, the costs in establishing a Fuji orchard will not vary significantly from one apple growing district to another within eastern Washington.
3. One pollinizer tree is planted every 50 feet in every row. These pollinizers are planted between the normal spacings, thus, not replacing a Fuji tree. Forty-four Manchurian trees and 23 Frettingham crab apple trees per acre are used as pollinizers.
4. The irrigation pump and mainlines, valued at \$1,000 per acre with a 30-year life, are already established and operating.
5. A solid set under-tree irrigation system with mini-sprinklers set every 20 feet in every row in a diamond pattern is installed at a per-acre cost of \$800 for materials, \$300 for labor, \$45 for rental of a trencher, and \$5 for fuel and lube.
6. A 125-horsepower propane-driven wind machine is installed in the early spring of year 4 at a cost of \$16,000. This wind machine serves the entire 10 acres and has an estimated life of 30 years.
7. A holding pond for frost control purposes for the 10 acres is established for use in year 4. The pond costs \$7,000 and has a 20-year life.
8. The 10-acre Fuji orchard and its respective support system and irrigation system, excluding the irrigation pump and mainlines, have a 20-year life. Without the incidence of winter cold damage and under good management, the economic life of a Fuji orchard could be longer.

9. Land, excluding trees, is valued at \$5,000 per acre. The orchardist desires a 7% return from the land investment.
10. Yield per acre in terms of bins picked and price estimates per picked bin for years one through maturity are the following:

| | | |
|-----------------|---------|-----------|
| Year 1: | 0 bins | |
| Year 2: | 5 bins | \$200/bin |
| Year 3: | 15 bins | \$200/bin |
| Year 4: | 25 bins | \$200/bin |
| Year 5: | 35 bins | \$200/bin |
| Mature Orchard: | 45 bins | \$200/bin |

The summary results of other price and yield scenarios are also presented in this study.

11. Interest rates are 9% on operating loans and on machinery, equipment, and all other type loans.
12. Machinery and buildings are valued at new or used replacement value depending on how they are typically replaced. While this may overstate current production costs, it provides an indication of the enterprise's ability to generate the earnings needed to replace depreciable assets. When an enterprise is evaluated to determine its long-run viability, it is important to consider its ability to replace depreciable assets on a replaceable cost basis.

Summary of Results

The results of this study cover five years of establishment plus that of maintaining a mature orchard. The projected cost and production levels used in this study are what the producer panel speculate to be the case. The purpose of this study is to estimate the capital requirements and profitability of establishing and producing a high density Fuji apple orchard over a twenty-year orchard life given different price and production levels. The results of this study show the high costs involved with high density plantings and provide a basis for estimating the yields and/or prices that must be achieved over the life of the orchard in order to make a high density apple orchard a profitable venture.

Table 1 presents the estimated annual capital requirements in land, irrigation system, operating expenses, and new equipment purchased as a direct consequence of replacing 10 acres of an existing 100-acre orchard with a planting of Fuji apples. Since

Table 1: Summary of Capital Requirements per Year for Establishing 10 Acres of Fuji Apples in Eastern Washington.^a

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---------------------------------|---------|--------|--------|--------|---------|
| | \$ | \$ | \$ | \$ | \$ |
| Requirements: | | | | | |
| Land (10 Acres) ^b | 50,000 | - | - | - | - |
| Irrigation System ^c | 11,500 | - | - | - | - |
| Equipment ^d | - | - | - | 16,205 | - |
| Holding Pond | - | - | - | 7,000 | - |
| Operating Expenses ^e | 84,877 | 18,580 | 21,462 | 28,640 | 31,407 |
| Total Requirements | 146,377 | 18,580 | 37,500 | 51,845 | 31,407 |
| Receipts ^f | - | 10,000 | 30,000 | 50,000 | 70,000 |
| New Yearly Requirements | 146,377 | 8,580 | 7,500 | 1,845 | -38,593 |

^aDoes not include interest on investment.

^bAlthough a land purchase in this situation is not required, the value of the land is added to this table.

^cThe irrigation pump and mainlines, valued at \$1,000 per acre with a 30-year life, are already established and operating. This figure includes only the cost of the solid set under-tree irrigation system. See assumption 5 on page 3.

^dOne wind machine and a frost alarm with 4 thermometer stations in year 4 and a holding pond in year 4. Any other field equipment that may be purchased as a result of replanting this 10 acres of Fuji apples in the existing orchard are not listed.

^eIncludes variable costs, land taxes, and prorated taxes and insurance on equipment and buildings (see Tables 7A through 7F in the Appendix).

^fSee assumption 10 on page 4.

the 10-acre planting of Fuji apples replaces 10 acres of existing orchard, most field equipment, buildings, and vehicles required to operate this 10 acres are likely to be already on hand. Therefore, the only equipment purchases listed as a direct result of this 10-acre change in fruit production are the irrigation system, holding pond, wind machine, alarm, and thermometers.⁶ Where the situation differs from the above assumptions, adjustments in the figures presented in Table 1 may be necessary. It was assumed that all items were purchased the year they are first used. Of course, the actual timing of the capital outlays will vary, depending on how the various assets are financed.

Table 1 presents a summary of the cash requirements over the first 5 years of establishment. Table 2 presents a per acre summary of the costs involved during the 5-year period needed to fully establish the orchard. The establishment costs are categorized as variable, fixed, and total costs. While variable cost essentially reflects cash input costs that are incurred and used the year of purchase (trees being the exception), fixed cost reflects the cost of inputs that are purchased, or already owned, that have a life of more than one year. Therefore, some of the up-front cash costs such as land, the irrigation system, and the wind machine are allocated over their respective lives and do not show as a 1-year cost obligation, as shown in Table 1. See "Detailed Results" on page 11 for a description of how variable and fixed costs are allocated within the yearly budgets.

After year 5, the assumption is made that the orchard is fully established. At this point it is assumed that the orchard has 15 more years of productive life with an average annual yield of 45 bins per acre. Over these remaining years, the orchard must pay back the \$12,777 cost per acre incurred in establishing this orchard. Thus, assuming a 9% interest rate and a 15-year pay-back period, the mature orchard has an amortized establishment cost of \$1,585.04 per acre per year that must be recovered. Table 3 presents a per acre summary of the costs involved in producing Fuji apples in a mature Fuji apple orchard.

⁶It is quite likely that in the case of replacing an existing orchard, some or all of the irrigation system is already in place as are the holding pond, wind machine, alarms, and thermometers.

Table 2: Per Acre Cost of Establishing a Fuji Apple Orchard

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---------------------|---------------|---------------|----------------|----------------|----------------|
| | \$ | \$ | \$ | \$ | \$ |
| Variable Cost: | | | | | |
| Custom Soil Prep. | 1002.00 | - | - | - | - |
| Trees | 3654.00 | - | - | - | - |
| Custom Planting | 447.80 | - | - | - | - |
| Trellis Material | 650.00 | - | - | - | - |
| Paint | 28.00 | - | - | - | - |
| Tape & Twine | 6.00 | 50.00 | 25.00 | 50.00 | - |
| Fertilizer | 68.00 | 18.00 | 18.00 | 18.00 | 18.00 |
| Chemicals | 57.81 | 78.53 | 160.20 | 229.94 | 294.28 |
| Beehives | - | 70.00 | 70.00 | 70.00 | 70.00 |
| Labor | 1295.99 | 1002.59 | 930.10 | 995.41 | 964.39 |
| Picking Labor | - | 75.00 | 240.00 | 562.50 | 787.50 |
| Custom Hauling | - | 15.00 | 45.00 | 75.00 | 105.00 |
| Irrig/Electric Chg. | 150.00 | 150.00 | 150.00 | 168.75 | 168.75 |
| Machinery Cost | 188.08 | 165.47 | 244.35 | 345.25 | 358.76 |
| Other | 47.75 | - | - | - | - |
| Overhead | 399.77 | 84.05 | 96.86 | 129.06 | 141.71 |
| Interest | <u>400.78</u> | <u>56.51</u> | <u>54.51</u> | <u>66.39</u> | <u>67.61</u> |
| Total Variable Cost | 8395.18 | 1765.15 | 2034.02 | 2710.30 | 2976.00 |
| Fixed Cost: | | | | | |
| Machine Cost | 465.37 | 449.48 | 586.65 | 818.54 | 846.72 |
| Land Taxes | 47.16 | 49.78 | 53.71 | 64.19 | 72.05 |
| Interest on Land | 350.00 | 350.00 | 350.00 | 350.00 | 350.00 |
| Management | 250.00 | 250.00 | 250.00 | 250.00 | 250.00 |
| Estab Cost Interest | - | <u>855.69</u> | <u>1100.50</u> | <u>1224.24</u> | <u>1261.80</u> |
| Total Fixed Cost | 1112.53 | 1954.95 | 2340.86 | 2706.97 | 2780.57 |
| Total Cost | 9507.71 | 3720.10 | 4374.88 | 5417.27 | 5756.57 |
| Value of Production | - | 1000.00 | 3000.00 | 5000.00 | 7000.00 |
| Net Cost | 9507.71 | 2720.10 | 1374.88 | 417.27 | -1243.43 |
| Accumulated Cost | 9507.71 | 12227.81 | 13602.69 | 14019.96 | 12776.53 |

Table 3: Cost Per Acre of Producing Fuji Apples in a Mature Apple Orchard

| | \$ |
|-----------------------|-----------------|
| Variable Costs: | |
| Fertilizer | 18.00 |
| Chemicals | 325.89 |
| Beehives | 70.00 |
| Labor | 1135.76 |
| Picking Labor | 1012.50 |
| Custom Hauling | 135.00 |
| Irrig/Electric Charge | 168.75 |
| Machine Cost | 369.82 |
| Overhead | 165.51 |
| Interest | <u>74.40</u> |
| Total Variable Cost | 3,475.63 |
| Fixed Costs: | |
| Machine Cost | 870.95 |
| Land Taxes | 98.25 |
| Interest on Land | 350.00 |
| Management | 250.00 |
| Amortized Estab. Cost | <u>1,585.04</u> |
| Total Fixed Cost | 3,154.24 |
| Total Cost | 6,629.87 |

As shown in Table 3, the total variable cost of producing Fuji apples in a mature apple orchard, under the given assumptions, is \$3,475.63, with the total cost of production being \$6,629.87. Given a yield of 45 bins per acre and an average price of \$200 per bin for the Fuji apples produced, as shown below, per acre returns over variable cost are \$5,524.37. However, returns over total cost, which represent returns to risk, are \$2,370.13 per acre.

| | |
|------------------|-----------------|
| Receipts: | \$9,000.00 |
| Variable Cost: | <u>3,475.63</u> |
| Returns Over | |
| Variable Cost: | 5,524.37 |
| Fixed Cost: | <u>3,154.24</u> |
| Returns to Risk: | \$ 2,370.13 |

Price and Yield Analysis

This study represents what knowledgeable fruit growers might anticipate from plantings of Fuji apples over their productive life. To be of practical use to potential investors, the assumptions used in this study require careful study. In the calculations to determine profitability per acre, a production level of 5 bins in year 2, 15 bins in year 3, 25 bins in year 4, 35 bins in year 5, and 45 bins per acre during the mature production years was assumed. This is what experienced growers calculate they can average. However, for the inexperienced grower or absentee investor, this production level may be unrealistic. It must also be stressed that yields can be quite variable from year to year. Furthermore, Fuji apple prices may drop or rise in years to come. Therefore, to help investors better analyze their potential situation, Table 4 presents the accumulated cost after five years of establishment and the profit for the mature years at 50, 60, 70, 80, 90, and 100% of the base production levels. Also presented in Table 4 is the break-even yield the producer must average in the mature years in order to break even at the given price level if yields during the first five establishment years produced at the percentage of the base production levels under investigation. At break-even price and yield combinations, the producer covers all out-of-pocket expenses plus realizes a competitive return to equity capital invested in land, trees, equipment, and buildings. In addition, the producer receives \$8.75 per hour for tractor and machine labor, \$7.50 per hour for casual labor, and \$250 per acre in management he/she provides to the maintenance and operation of the Fuji apple orchard. Failure to obtain break-even returns means that the producer will not receive a return on capital contributions, labor, or management equal to what could be earned in an alternative use. Attainment of a return above break-even returns means that in addition to covering all cash and opportunity costs, the producer receives a return to risk.

The significance of Table 4 is that it illustrates that if a producer does not receive the price and/or yields expected when the orchard is established, a high density Fuji apple orchard operation can become a very expensive venture. For instance, if only 50% of the base production levels is achieved during the first five establishment years and during the mature years of orchard life, with an average price of \$125 per bin being received by the producer, after the fifth year of establishment the producer has \$23,273 per acre invested and loses \$4,376 annually during the mature years. At this yield level and at a price of \$125 per bin, the producer must receive an unrealistic average of 70.09 bins per acre for the following fifteen years if he/she is to break even over the 20-year life of the orchard.

Table 4: Five-Year Accumulated Net Cost of Establishing a High Density Fuji Apple Orchard and Expected Profits in the Mature Years at Different Price and Yield Levels, Including Break-Even Yield Levels for the Mature Years.

| Average Bin Price | \$125 | | | \$150 | | | \$175 | | |
|-------------------------|----------------------------|-------------------------------|----------------------------------|----------------------------|-------------------------------|----------------------------------|----------------------------|-------------------------------|----------------------------------|
| Percent of Base Yields* | Accumulated 5-Yr. Net Cost | Annual Profit in Mature Years | Break-Even Yield for Mature Year | Accumulated 5-Yr. Net Cost | Annual Profit in Mature Years | Break-Even Yield for Mature Year | Accumulated 5-Yr. Net Cost | Annual Profit in Mature Years | Break-Even Yield for Mature Year |
| 50 | 23,273 | -4,376 | 70.09 | 22,191 | -3,679 | 53.96 | 21,109 | -2,982 | 43.51 |
| 60 | 22,472 | -3,863 | 69.01 | 21,174 | -3,027 | 52.88 | 19,876 | -2,191 | 42.43 |
| 70 | 21,671 | -3,350 | 67.93 | 20,157 | -2,374 | 51.80 | 18,642 | -1,399 | 41.35 |
| 80 | 20,870 | -2,836 | 66.85 | 19,139 | -1,722 | 50.72 | 17,408 | -607 | 40.28 |
| 90 | 20,069 | -2,323 | 65.77 | 18,121 | -1,069 | 49.64 | 16,174 | 185 | 39.20 |
| 100 | 19,268 | -1,810 | 64.69 | 17,104 | -417 | 48.56 | 14,940 | 977 | 38.12 |
| Average Bin Price | \$200 | | | \$225 | | | \$250 | | |
| Percent of Base Yields* | Accumulated 5-Yr. Net Cost | Annual Profit in Mature Years | Break-Even Yield for Mature Year | Accumulated 5-Yr. Net Cost | Annual Profit in Mature Years | Break-Even Yield for Mature Year | Accumulated 5-Yr. Net Cost | Annual Profit in Mature Years | Break-Even Yield for Mature Year |
| 50 | 20,028 | -2,286 | 36.19 | 18,946 | -1,589 | 30.78 | 17,864 | -892 | 26.61 |
| 60 | 18,577 | -1,354 | 35.11 | 17,279 | -518 | 29.70 | 15,981 | 318 | 25.54 |
| 70 | 17,127 | -423 | 34.04 | 15,613 | 552 | 28.62 | 14,098 | 1,527 | 24.46 |
| 80 | 15,677 | 508 | 32.96 | 13,946 | 1,623 | 27.55 | 12,215 | 2,737 | 23.38 |
| 90 | 14,227 | 1,439 | 31.88 | 12,279 | 2,693 | 26.47 | 10,332 | 3,947 | 22.31 |
| 100 | 12,777 | 2,370 | 30.80 | 10,613 | 3,764 | 25.39 | 8,449 | 5,157 | 21.23 |

* Base Yields: Year 1, 0 bins; Year 2, 5 bins; Year 3, 15 bins; Year 4, 25 bins; Year 5, 35 bins; Mature Years; 45 bins.

On the other hand, if yields are as expected and one does receive reasonable prices for his/her product, a high density Fuji apple orchard can be a very profitable enterprise. For instance, if the yields for the first five years of orchard life and the mature years are as given in the original assumptions and the average price per bin received by the producer is \$225 per bin, after the fifth year the producer has \$10,613 per acre invested in the orchard and clears an annual profit of \$3,764 per acre. To break even during the mature years the producer needs an average production level of 25.39 bins over the remaining 15-year life of the orchard.

Detailed Results

The detailed estimated costs for the five establishment years and a typical mature year of production are shown in the Appendix. Tables 5A through 5F outline the schedule of field operations and per-acre cost by calendar month, the type of machinery and labor used, and the hours used per acre on an annual basis. The costs of field operations are divided into two categories, fixed and variable. Fixed costs include annual cost of machinery, building, irrigation pump and mainline, land ownership, and management. Variable costs include such costs as those associated with operating machinery, hiring labor, and purchasing services and materials. Total cost is the sum of fixed costs and variable costs.

Machinery, building, and irrigation pump and mainline fixed costs include depreciation, interest on the average investment, property taxes, and insurance. These costs are incurred whether or not a crop is grown and do not vary given ownership of a specific equipment and building complement. Per-hour fixed costs for machinery were determined by dividing the total annual fixed cost per machine by the annual hours of machinery use for the representative farm. Machinery fixed costs for a specific field operation were determined by multiplying the machine hours per acre times the per-hour machinery fixed cost figure (see Table 9). Fixed costs per acre for the machine shed and shop and shop tools were determined by dividing the total annual fixed cost by the number of acres. Fixed cost for the irrigation pump and mainlines were also calculated on a per-acre basis.

Land fixed cost includes taxes and a 7% return on the purchase price of the land. This cost represents the minimum return the owner-operator desires on the original investment in land, apart from appreciation of land value. In this publication, the land cost is termed an opportunity cost to indicate that it is not an out-of-pocket expense, but rather a return that is foregone by the producer as a result of investing in this enterprise. Beginning with year 2, a fixed cost of 9% of the previous

year(s)' accumulated establishment cost is charged against the investment. This cost represents interest being paid on the investment in the apple orchard, or returns foregone by investing in the apple orchard, rather than in an alternative investment that would give immediate returns.

Variable costs vary with the number of acres farmed or with the enterprise. These costs include fuel, oil, repairs, fertilizer, chemicals, custom work, labor, overhead (utilities, legal and accounting fees, etc.), and interest (9%) on operating capital. Trees, trellises, and irrigation materials that are installed in year 1 and have the same life as the orchard were also included as variable costs.

In Tables 5A through 5F, which show the schedule of operations for each year of orchard life, figures representing the cost of services and/or materials utilized by operation are shown in their respective columns. Tables 6A through 6F present by year, month, and operation, the services and/or materials that went into the calculation of these figures for each respective Table 5.

Tables 7A through 7F present an itemized list of the costs in each respective Table 5. Most items are self-explanatory or have been explained previously. However, "Tractor Interest" and "Machinery Interest"⁷ warrant additional explanation. These values represent opportunity costs (returns that are foregone by investment in a given equipment, building, and irrigation complement, rather than in alternative investments) or interest paid to finance the given equipment, building, and irrigation complement or both. The 9% interest charge made against the average value of these items over their respective lives represents total interest costs. These interest costs are fixed costs and their per-hour and per-acre allocations were calculated in the manner as described on page 11 for building, irrigation, and machinery fixed cost.

First Year (Tables 5A-7A)

It is assumed the land was previously in apple production. On that basis, pre-plant operations consist of clearing and burning trees, as well as ripping, discing, and fumigating the soil. Pre-plant fertilizer is broadcast-applied and rotovated in prior to laying out and staking the planting. The irrigation pump and mainlines, valued at \$1,000 per acre, are already established and operating. A micro-sprinkler irrigation system is established within the orchard at approximately \$1,150 per planted acre.

⁷Machinery interest includes interest on the machine shed and shop, irrigation pump, and mainlines.

A dwarfing rootstock such as M.9 requires tree support throughout the life of the orchard. A four-wire trellis is established. The trees are trained to the modified axe system (Figure 1), a hybrid of slender spindle and vertical axis orchard systems. Bamboo poles connected to the four-wire trellis are used for vertical support. Tree spacing is 4.5 by 13 feet to allow wide enough between-row spacing to allow equipment to pass through. At this spacing there are 745 Fuji trees per planted acre. Pollenizer trees (67 per planted acre) are planted every 50 feet in-row; Manchurian (2/3 of the trees) and Frettingham (1/3) were the choices in this study.

Figure 1: Modified Axe System⁸

In the first year, a sod cover crop is also planted. Herbicides are used to maintain a weed-free strip underneath the trees. Touch-up hand weeding is also conducted in the summer. Tree trunks are painted with white latex for sunscald protection. Pest management programs are mainly for aphid and mildew control. Gopher control practices are employed in year 1. One hundred pounds of urea are applied through the irrigation system to promote vigorous tree growth.

The modified axe system requires frequent training visits in the orchard throughout the growing season. Tape and twine are used as training aids. The main emphasis is to promote flower bud formation on limbs, rather than vegetative growth, by placing limbs in a horizontal position. Total cost for year 1 is \$9,508 per planted acre.

⁸For a complete description of a modified axe system, the hybrid tree cone (HYTEC) system, see Barritt, Bruce, "Management of HYTEC Apple Orchards: Part I, Orchard Planning and Establishment" and "Part II, Pruning and Training," Good Fruit Grower, Nov. 15, 1992, 43(19):4, 38-42, 69, 70,72, 73.

Second Year (Tables 5B-7B)

It is assumed that there were no tree losses during year 1, so there are no replanting expenses. Trees are pruned by hand during the dormant season. There are also spring applications of zinc and boron to promote strong flower buds. Starting the second year, two beehives per acre are rented on an annual basis for pollination purposes. One hundred pounds of urea are applied through the irrigation system to promote adequate tree growth.

Trees are expected to bear a light crop in the second year, generally about five bins. The fruit load is balanced with hand thinning. A delayed dormant oil spray is applied for aphid and mite control. Two cover sprays for codling moth control and one cover spray for aphid management are also applied. Furthermore, mildew sprays are applied in the second year. Gopher control is conducted in the fall. Two herbicide applications and five mowings are used to manage the orchard cover crop.

Tree training occurs in the late spring and midsummer. Limbs are tied down with string and secured with plastic tape. Summer pruning is necessary to remove unwanted vigorous shoot growth.

Harvest for Fuji apples is based on color picking, so a minimum of two harvests is required. Four pickers plus one driver are hired for harvesting this 10-acre block. Total cost per planted acre in year two is \$3,720. Total expected revenue is \$1,000.

Third Year (Tables 5C-7C)

Tree training and pruning costs increase substantially in year three as the tree canopy is almost fully established. Pruning is conducted with hand tools. Tree training occurs in both the spring and summer, depending on tree vigor. The fertilizer program for this year and the following years consists of applying 100 pounds of urea along with some zinc and boron for maintaining adequate tree growth and fruiting.

Crop load is expected to be about 15 bins/acre by the third year. The crop is hand thinned rather than chemically thinned because response to chemical thinners by young trees is unpredictable and erratic.

Herbicides and mowing are used for vegetation management. Pest control sprays, primarily for mildew, aphids, mites, leaf rollers, and codling moths are applied. Gopher control practices are applied in the fall.

Harvest is based on color picking with at least two passes through the orchard. Total cost per planted acre in year 3 is \$4,375. Revenue from production is expected to be \$3,000.

Fourth Year (Tables 5D-7D)

The tree canopy should be fully established and the trees should be achieving a significant commercial crop, about 25 bins per acre. Dormant pruning will include containment and renewal cuts. Pruning is done with hand tools. Tree training consists mainly of limb spreading done in midsummer.

Herbicides, pesticides, and other orchard operations are conducted as previously described. By year 4, the crop can be chemically thinned with NAA, carbaryl, and Wilthin. By year 4, a system of custom picking, hauling, and harvest supervision should be firmly established. Total cost per planted acre in year 4 is \$5,517. Total expected revenue is \$5,000.

Fifth Year (Tables 5E-7E)

A crop of approximately 35 bins/acre is anticipated for the fifth year after planting. Trees are fully established and pruning consists almost entirely of containment and renewal cuts, which are made with hand tools. By this time tree training is complete, only renewal branches will require limb positioning which is achieved with fruit production. The crop is chemically thinned three times with a follow-up hand thinning treatment.

Orchard operations, such as pesticide applications, fertilizers, herbicides, mowing, and gopher control are conducted as previously described. Under the given assumptions, annual revenue from production begins exceeding annual production costs. Total cost for year 5 is \$5,757. Total expected revenue is \$7,000.

Mature Orchard (Tables 5F-7F)

By year 6, the orchard is assumed to reach full commercial production, which is 45 to 50 bins per acre. It is assumed that this production will be maintained on an average yearly basis for the remainder of the orchard's life, assumed to be 15 years.

Tree pruning is conducted by hand; containment and renewal cuts are necessary. Light management is critical for sustaining production of high quality fruit. Special attention is paid to the top one-third of the tree to ensure that growth is not overly vigorous. Tree training on renewal branches depends on crop load to place the branch in a more horizontal position. Crop load is balanced with chemical and hand thinning.

Boron and zinc applications are critical for maintaining adequate production. Control of pests and diseases, such as codling moth and powdery mildew, is essential. Other management and harvest operations are conducted as previously described. Under the

assumptions of this study, total cost for the mature orchard is \$6,630. Total expected revenue is \$9,000.

Machinery, Building, and Input Costs

Table 8 identifies the machine and building complement used to derive machinery and building cost estimates. It includes the type of machines and buildings used, their current replacement value (new or used), years of use before trade-in, salvage value at trade-in, annual repair cost, and annual hours of use. The data in this table are used to estimate the per-hour or per-acre fixed and variable costs appearing in Table 9.

Machinery and building fixed costs include depreciation and interest on investment, property taxes, and insurance--costs that do not vary with use. Note that interest on investment represents a 9% opportunity cost to the enterprise. These are earnings foregone by investing money in the machinery and building complement rather than in the next best alternative investment. This may also represent the interest paid on funds borrowed to finance machinery purchases.

Machinery and building variable costs include repair, fuel, and lubrication costs--costs that vary with use.

Table 10 lists the prices used for fuel, fertilizer, chemicals, trees, and other selected inputs used in deriving these budgets.

Concluding Note

Under the assumptions of this study, a mature orchard producing 45 bins per acre and receiving \$200 per picked bin will cover all out-of-pocket expenses plus opportunity costs for equity capital, labor, and management provided by the operator, plus return \$2,370 per acre. Table 4, on page 10, gives a summary of results at different yield and price levels than those assumed in the initial study. This table shows, among other things, that if yield and/or price fall short of expectations, a Fuji orchard can become an expensive venture for the producer.

Due to the procedures and assumptions used in this study, the results should be used with care. The situation outlined is not typical of all orchard or farm operations. For example, economies were gained by replanting this acreage in an existing farm operation. Conversely, added costs can be anticipated when the planting represents a separate business enterprise. Furthermore, in planting a given acreage, the dimensions of the field, topography, and the need for roads reduces the number of actual acres of orchard. The need for windbreaks, buildings, and service areas may reduce the area planted even further.

It is essential that this publication be used primarily as a guide in determining establishment and mature orchard maintenance costs and that considerable judgment be exercised in generalizing cost estimates to situations differing from those outlined above. Moreover, this publication is not specifically intended as a guide to planting and production practices. Rather, it represents the current technology used in eastern Washington.

Appendix

Detailed Cost and Production

Practice Information

TABLE 5A: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY APPLE ORCHARD IN EASTERN WASHINGTON - YEAR 1

| OPERATION | TOOLING | MTH | YEAR | MACH HOURS | LABOR HOURS | TOTAL FIXED COST | VARIABLE COST | | | | | TOTAL VARIABLE COST | TOTAL COST |
|------------------|--------------------------------|------|------|---------------|----------------|------------------------|-----------------------------|---------|-------------------|---------|--------|---------------------------|---------------|
| | | | | | | | FUEL, LUBE, & REPAIRS | LABOR | SERVICE MATER. | INTER. | | | |
| | | | | | | \$ | \$ | \$ | \$ | \$ | \$ | \$ | |
| CLEAR LAND | CUSTOM PULL, PILE&BURN TREES | FALL | 1997 | .00 | .00 | .00 | .00 | .00 | 175.00 | .00 | 14.44 | 189.44 | 189.44 |
| SOIL SAMPLE | CUSTOM HIRE | FALL | 1997 | .00 | .00 | .00 | .00 | .00 | 12.00 | .00 | .99 | 12.99 | 12.99 |
| RIP LAND | CUSTOM HIRE | FALL | 1997 | .00 | .00 | .00 | .00 | .00 | 100.00 | .00 | 8.25 | 108.25 | 108.25 |
| CLEAN UP & DISK | CUSTOM HIRE | FALL | 1997 | .00 | .00 | .00 | .00 | .00 | 150.00 | .00 | 12.38 | 162.37 | 162.37 |
| FUMIGATE | CUSTOM HIRE | FALL | 1997 | .00 | .00 | .00 | .00 | .00 | 565.00 | .00 | 46.61 | 611.61 | 611.61 |
| LAYOUT & STAKE | HAND LABOR | FEB | 1998 | .00 | 4.00 | .00 | .00 | 30.00 | .00 | 5.00 | 2.10 | 37.10 | 37.10 |
| FERTILIZE | 52HP-WT, RENTED DROP SPREADER | FEB | 1998 | .50 | .55 | 3.19 | 1.66 | 4.81 | 3.00 | 50.00 | 3.57 | 63.04 | 66.22 |
| ROTOVATE | 52HP-WT, 6' ROTOTILLER | FEB | 1998 | 1.00 | 1.10 | 9.93 | 7.18 | 9.63 | .00 | .00 | 1.01 | 17.81 | 27.75 |
| RETAKE | HAND LABOR | FEB | 1998 | .00 | 1.50 | .00 | .00 | 11.25 | .00 | .00 | .68 | 11.93 | 11.93 |
| PLANT TREES | CUSTOM PLANTED | MAR | 1998 | .00 | .00 | .00 | .00 | .00 | 447.00 | 3352.50 | 199.47 | 3998.97 | 3998.97 |
| PLANT POLLINIZER | 52HP-WT W/BACKFORK (3 PEOPLE) | MAR | 1998 | 5.00 | 16.50 | 32.57 | 17.22 | 130.63 | .00 | 301.50 | 23.59 | 472.94 | 505.51 |
| COVER CROP PREP | 52HP-WT, ROTOTILLER | MAR | 1998 | 2.50 | 2.75 | 24.84 | 17.94 | 24.06 | .00 | .00 | 2.21 | 44.21 | 69.05 |
| SEED COVER CROP | 52HP-WT, RENTED SEEDER | MAR | 1998 | 1.10 | 1.21 | 7.01 | 3.64 | 10.59 | 10.00 | 18.75 | 2.26 | 45.24 | 52.25 |
| PRUNE | HAND LABOR (1 PERSON) | MAR | 1998 | .00 | 4.00 | .37 | .00 | 30.00 | .00 | .00 | 1.58 | 31.58 | 31.94 |
| MILDEW SPRAY | 52HP-WT, BLAST SPRAYER | APR | 1998 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 3.38 | .60 | 14.01 | 22.39 |
| MILDEW SPRAY | 52HP-WT, BLAST SPRAYER | APR | 1998 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 2.94 | .58 | 13.55 | 21.93 |
| TREE TRAINING | HAND LABOR | SEA | 1998 | .00 | 20.00 | .00 | .00 | 150.00 | .00 | 24.00 | 7.83 | 181.83 | 181.83 |
| IRRIGATE | SOLID SET UNDERTREE IRR SYSTEM | SEA | 1998 | .00 | .00 | 203.03 | 50.00 | .00 | 150.00 | .00 | 9.00 | 209.00 | 412.03 |
| IRRIGATE | 4-WHEEL ATV W/ABOVE OPERATION | SEA | 1998 | 10.00 | 10.00 | 21.94 | 10.08 | 87.50 | .00 | .00 | 4.39 | 101.97 | 123.90 |
| FERTIGATE | THROUGH THE IRRIGATION SYSTEM | SEA | 1998 | .00 | 1.00 | .00 | .00 | 8.75 | .00 | 18.00 | 1.20 | 27.95 | 27.95 |
| PAINT TREE TRUNK | HAND LABOR (ALSO TRIM SUCKERS) | MAY | 1998 | .00 | 6.00 | .00 | .00 | 45.00 | .00 | 28.00 | 2.74 | 75.74 | 75.74 |
| INSTALL TRELLIS | HAND LABOR | MAY | 1998 | .00 | 60.00 | .00 | .00 | 468.75 | .00 | 650.00 | 41.95 | 1160.70 | 1160.70 |
| TIE LEADERS | HAND LABOR | MAY | 1998 | .00 | 11.00 | .00 | .00 | 82.50 | .00 | 6.00 | 3.32 | 91.82 | 91.82 |
| MILDEW SPRAY | 52HP-WT, BLAST SPRAYER | MAY | 1998 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | .94 | .41 | 11.38 | 19.76 |
| HERBICIDE | 52HP-WT, 100 GAL SPRAYER | JUN | 1998 | .40 | .48 | 4.50 | 6.32 | 4.20 | .00 | 33.20 | 1.31 | 45.04 | 49.53 |
| HOE AROUND TREES | HAND LABOR | JUN | 1998 | .00 | 10.00 | .00 | .00 | 75.00 | .00 | .00 | 2.25 | 77.25 | 77.25 |
| MOW ORCHARD | 52HP-WT, 9' ROTARY MOWER | JUL | 1998 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .17 | 7.72 | 12.67 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | JUL | 1998 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 3.57 | .31 | 13.91 | 22.29 |
| MOW ORCHARD | 52HP-WT, 9' ROTARY MOWER | AUG | 1998 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .11 | 7.66 | 12.61 |
| HERBICIDE | 52HP-WT, 100 GAL. SPRAYER | AUG | 1998 | .40 | .48 | 6.70 | 3.82 | 4.20 | .00 | 12.50 | .31 | 20.83 | 27.54 |
| MOW ORCHARD | 52HP-WT, 9' ROTARY MOWER | OCT | 1998 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .00 | 7.55 | 12.50 |
| GOPHER CONTROL | HAND LABOR | ANN | 1998 | .00 | 2.00 | .00 | .00 | 15.00 | .00 | 1.28 | .73 | 17.01 | 17.01 |
| MISC USE | ½ TON PICKUP | ANN | 1998 | 7.14 | 7.85 | 36.45 | 23.42 | 68.69 | .00 | .00 | 4.14 | 96.25 | 132.70 |
| MISC USE | 4-WHEEL ALL TERRAIN VEHICLE | ANN | 1998 | 5.70 | .00 | 12.50 | 5.74 | .00 | .00 | .00 | .26 | 6.00 | 18.51 |
| MISC USE | SHOP TOOLS | ANN | 1998 | .00 | .00 | 15.29 | .00 | .00 | .00 | .00 | .00 | .00 | 15.29 |
| MISC USE | MACH SHED & SHOP | ANN | 1998 | .00 | .00 | 38.71 | .71 | .00 | .00 | .00 | .03 | .75 | 39.46 |
| OVERHEAD | UTILITIES, LEGAL, ACCTNG, ETC. | ANN | 1998 | .00 | .00 | .00 | .00 | .00 | 399.77 | .00 | .00 | 399.77 | 399.77 |
| MANAGEMENT | OPERATOR MANAGEMENT | ANN | 1998 | .00 | .00 | 250.00 | .00 | .00 | .00 | .00 | .00 | .00 | 250.00 |
| LAND COST | INTEREST ON LAND | ANN | 1998 | .00 | .00 | 350.00 | .00 | .00 | .00 | .00 | .00 | .00 | 350.00 |
| TAXES | LAND | ANN | 1998 | .00 | .00 | 47.16 | .00 | .00 | .00 | .00 | .00 | .00 | 47.16 |
| TOTAL PER ACRE | | | | 37.24 | 164.47 | 1112.53 | 175.08 | 1295.99 | 2011.77 | 4511.56 | 400.78 | 8395.18 | 9507.71 |

TABLE 6A: MATERIALS AND SERVICES USED BY OPERATION - YEAR 1.

| OPERATION | MATERIAL AND/OR SERVICE | |
|-------------------|--------------------------------|--|
| Clear Land | Fall | Custom hire @ \$175.00/acre |
| Soil Sample | Fall | Custom hire @ \$ 12.00/acre |
| Rip Land | Fall | Custom hire @ \$100.00/acre |
| Cleanup & Disk | Fall | Custom hire @ \$150.00/acre |
| Fumigate | Fall | Custom hire @ \$565.00/acre |
| Layout & Stake | February | Layout & stake material @ \$5.00/acre |
| Fertilize | February | Rent fertilizer spreader @ \$3.00/acre Pre-plant fertilizer @ \$50.00/acre |
| Plant Trees | March | 745 Fuji trees @ \$4.50/tree Custom plant 745 trees @ \$0.60/tree |
| Plant Pollinizers | March | 44 Machurian & 23 Frettingham pollinizer trees @ \$4.50/tree |
| Seed Cover Crop | March | Rented grass seeder @ \$10.00/acre 15 lbs. of Companion seed @ \$1.25/lb. |
| Mildew Spray | April | 1.50 ozs. Rubigan @ \$2.25/oz. |
| Mildew Spray | April | 0.625 oz. Rally @ \$4.70/oz. |
| Tree Training | Season | Tree training material @ \$24.00/acre |
| Irrigate | Season | Irrigation charge & electricity @ \$150.00/acre |
| Fertigate | Season | 100 lbs. of urea @ 18¢/lb. |
| Paint Tree Trunks | May | 3.5 gals. of paint @ \$8.00/gal. |
| Install Trellis | May | Trellis material @ \$650.00/acre |
| Tie Leaders | May | Tape & twine @ \$6.00/acre |
| Mildew Spray | May | 1.25 lbs. of wetable sulfur @ 75¢/lb. |

**TABLE 6A: MATERIALS AND SERVICES USED BY OPERATION - YEAR 1
(Continued).**

| OPERATION | | MATERIAL AND/OR SERVICE |
|----------------|--------|---|
| Herbicide | June | 2.0 qts. of Surflan @ \$16.60/qt. |
| Cover Spray | July | 1.0 oz. of Provado @ \$3.57/oz. |
| Herbicide | August | 1.0 qt. of Gramoxone @ \$12.50/qt. |
| Gopher Control | Annual | 1.0 lb. of Gopher Getter Bait @ \$1.28/lb. |
| Overhead | Annual | 5% variable cost |

**TABLE 7A: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY
APPLE ORCHARD IN EASTERN WASHINGTON - YEAR 1**

| | | PRICE OR | | VALUE OR | YOUR |
|-----------------------|------|-----------|----------|----------|-------|
| | UNIT | COST/UNIT | QUANTITY | COST | FARM |
| ----- | | | | | |
| VARIABLE COSTS | | \$ | | \$ | |
| CUSTOM CLEARING | ACRE | 175.00 | 1.00 | 175.00 | _____ |
| CUSTOM RIPPING | ACRE | 100.00 | 1.00 | 100.00 | _____ |
| CLEAN-UP & DISK | ACRE | 150.00 | 1.00 | 150.00 | _____ |
| SOIL SAMPLE | ACRE | 12.00 | 1.00 | 12.00 | _____ |
| CUSTOM FUMIGATE | ACRE | 565.00 | 1.00 | 565.00 | _____ |
| CUSTOM PLANT TREES | TREE | .60 | 745.00 | 447.00 | _____ |
| RENT FERT. SPREADER | ACRE | 3.00 | 1.00 | 3.00 | _____ |
| RENT SEEDER | ACRE | 10.00 | 1.00 | 10.00 | _____ |
| PREPLANT FERTILIZER | ACRE | 50.00 | 1.00 | 50.00 | _____ |
| LAYOUT&STAKE MATERIAL | ACRE | 5.00 | 1.00 | 5.00 | _____ |
| FUJI TREES | TREE | 4.50 | 745.00 | 3352.50 | _____ |
| POLLINIZER TREES | TREE | 4.50 | 67.00 | 301.50 | _____ |
| TRELLIS MATERIAL | ACRE | 650.00 | 1.00 | 650.00 | _____ |
| TAPE & TWINE | ACRE | 6.00 | 1.00 | 6.00 | _____ |
| TREE TRAIN MATERIAL | ACRE | 24.00 | 1.00 | 24.00 | _____ |
| IRRIGATN CHG & ELECT | ACRE | 150.00 | 1.00 | 150.00 | _____ |
| PAINT | GAL. | 8.00 | 3.50 | 28.00 | _____ |
| COMPANION SEED | LB. | 1.25 | 15.00 | 18.75 | _____ |
| SURFLAN | QT. | 16.60 | 2.00 | 33.20 | _____ |
| PROVADO | OZ. | 3.57 | 1.00 | 3.57 | _____ |
| RALLY | OZ. | 4.70 | .63 | 2.94 | _____ |
| RUBIGAN | OZ. | 2.25 | 1.50 | 3.38 | _____ |
| WETABLE SULFUR | LB. | .75 | 1.25 | .94 | _____ |
| GRAMOXONE | QT. | 12.50 | 1.00 | 12.50 | _____ |
| GOPHER GETTER | LB. | 1.28 | 1.00 | 1.28 | _____ |
| UREA | LB. | .18 | 100.00 | 18.00 | _____ |
| CASUAL LABOR | HOUR | 7.50 | 114.50 | 858.75 | _____ |
| LABOR(TRAC/MACH) | HOUR | 8.75 | 49.97 | 437.24 | _____ |
| TRACTOR REPAIR | ACRE | 21.60 | 1.00 | 21.60 | _____ |
| TRACTOR FUEL/LUBE | ACRE | 26.08 | 1.00 | 26.08 | _____ |
| MACHINERY REPAIRS | ACRE | 99.41 | 1.00 | 99.41 | _____ |
| MACHINE FUEL/LUBE | ACRE | 27.99 | 1.00 | 27.99 | _____ |
| OVERHEAD | ACRE | 399.77 | 1.00 | 399.77 | _____ |
| INTEREST ON OP. CAP. | ACRE | 400.78 | 1.00 | 400.78 | _____ |
| | | | | ----- | |
| TOTAL VARIABLE COST | | | | 8395.18 | _____ |
| | | | | | |
| FIXED COSTS | | \$ | | \$ | |
| TRACTOR DEPRECIATION | ACRE | 38.40 | 1.00 | 38.40 | _____ |
| TRACTOR INTEREST | ACRE | 42.12 | 1.00 | 42.12 | _____ |
| TRACTOR INSURANCE | ACRE | 2.81 | 1.00 | 2.81 | _____ |
| TRACTOR TAXES | ACRE | 8.42 | 1.00 | 8.42 | _____ |
| MACHINE DEPRECIATION* | ACRE | 172.80 | 1.00 | 172.80 | _____ |
| MACHINE INTEREST* | ACRE | 166.72 | 1.00 | 166.72 | _____ |
| MACHINE INSURANCE* | ACRE | 11.11 | 1.00 | 11.11 | _____ |
| MACHINE TAXES* | ACRE | 22.99 | 1.00 | 22.99 | _____ |
| LAND COST | ACRE | 350.00 | 1.00 | 350.00 | _____ |
| LAND TAX - YR 1 | ACRE | 47.16 | 1.00 | 47.16 | _____ |
| MANAGEMENT | ACRE | 250.00 | 1.00 | 250.00 | _____ |
| | | | | ----- | |
| TOTAL FIXED COST | | | | 1112.53 | _____ |
| | | | | | |
| TOTAL COST | | | | 9507.71 | _____ |
| ----- | | | | | |

*INCLUDES MACHINE SHED & SHOP, WIND MACHINE AND IRRIGATION SYSTEM.

TABLE 5B: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY APPLE ORCHARD IN EASTERN WASHINGTON - YEAR 2.

| | | VARIABLE COST | | | | | | | | | | |
|------------------|--------------------------------|---------------|------------|-------------|------------------|-----------------------|---------|----------------|--------|---------------------|------------|---------|
| OPERATION | TOOLING | MTH YEAR | MACH HOURS | LABOR HOURS | TOTAL FIXED COST | FUEL, LUBE, & REPAIRS | LABOR | SERVICE MATER. | INTER. | TOTAL VARIABLE COST | TOTAL COST | |
| | | | | | \$ | \$ | \$ | \$ | \$ | \$ | \$ | |
| PRUNE | HAND LABOR (1 PERSON) | FEB 1999 | .00 | 6.20 | .57 | .00 | 46.50 | .00 | .00 | 2.79 | 49.29 | 49.86 |
| DORM. SPY + ZINC | 52HP-WT, BLAST SPRAYER | MAR 1999 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 10.71 | 1.09 | 21.82 | 30.20 |
| MILDEW/BORON SPY | 52HP-WT, BLAST SPRAYER | APR 1999 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 4.53 | .66 | 15.22 | 23.60 |
| MILDEW SPRAY | 52HP-WT, BLAST SPRAYER | APR 1999 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 1.31 | .51 | 11.85 | 20.23 |
| RENT BEEHIVES | TWO BEEHIVES PER ACRE | APR 1999 | .00 | .00 | .00 | .00 | .00 | 70.00 | .00 | 3.15 | 73.15 | 73.15 |
| IRRIGATE | SOLID SET UNDERTREE IRR SYSTEM | SEA 1999 | .00 | .00 | 203.03 | 50.00 | .00 | 150.00 | .00 | 9.00 | 209.00 | 412.03 |
| IRRIGATE | 4-WHEEL ATV W/ABOVE OPERATION | SEA 1999 | 10.00 | 10.00 | 21.94 | 10.08 | 87.50 | .00 | .00 | 4.39 | 101.97 | 123.90 |
| FERTIGATE | THROUGH THE IRRIGATION SYSTEM | SEA 1999 | .00 | 1.00 | .00 | .00 | 8.75 | .00 | 18.00 | 1.20 | 27.95 | 27.95 |
| MOW | 52HP-WT, 9' ROTARY MOWER | MAY 1999 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .28 | 7.83 | 12.78 |
| MILDEW SPRAY | 52HP-WT, BLAST SPRAYER | MAY 1999 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 4.73 | .55 | 15.31 | 23.69 |
| MILDEW SPRAY | 52HP-WT, BLAST SPRAYER | MAY 1999 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 1.31 | .43 | 11.77 | 20.15 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | MAY 1999 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 2.81 | .48 | 13.32 | 21.70 |
| TREE TRAINING | HAND LABOR | MAY 1999 | .00 | 60.00 | .00 | .00 | 468.75 | .00 | 37.50 | 18.98 | 525.23 | 525.23 |
| HERBICIDE | 52HP-WT, 100 GAL SPRAYER | JUN 1999 | .40 | .48 | 4.50 | 6.32 | 4.20 | .00 | 33.20 | 1.31 | 45.04 | 49.53 |
| MOW | 52HP-WT, 9' ROTARY MOWER | JUN 1999 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .23 | 7.78 | 12.72 |
| HAND THINNING | HAND LABOR | JUN 1999 | .00 | 5.00 | .00 | .00 | 39.07 | .00 | .00 | 1.17 | 40.23 | 40.23 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | JUN 1999 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 2.81 | .39 | 13.22 | 21.60 |
| MOW | 52HP-WT, 9' ROTARY MOWER | JUL 1999 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .17 | 7.72 | 12.67 |
| TREE TRAINING | HAND LABOR | JUL 1999 | .00 | 20.00 | .00 | .00 | 156.25 | .00 | 12.50 | 3.80 | 172.55 | 172.55 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | JUL 1999 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 3.34 | .30 | 13.67 | 22.05 |
| MOW | 52HP-WT, 9' ROTARY MOWER | AUG 1999 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .11 | 7.66 | 12.61 |
| HERBICIDE | 52HP-WT, 100 GAL SPRAYER | AUG 1999 | .40 | .48 | 4.50 | 6.32 | 4.20 | .00 | 12.50 | .35 | 23.37 | 27.87 |
| MOW | 52HP-WT, 9' ROTARY MOWER | OCT 1999 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .00 | 7.55 | 12.50 |
| HARVEST (5 BINS) | PICKERS (4 PEOPLE) | OCT 1999 | .00 | 10.00 | 1.33 | .00 | 75.00 | .00 | .00 | .00 | 75.00 | 76.33 |
| HARVEST | 52HP-WT, BACKFORK | OCT 1999 | .50 | 2.50 | 3.26 | 1.72 | 21.88 | .00 | .00 | .00 | 23.60 | 26.85 |
| BIN HANDLING | 52HP-WT, FORKLIFT | OCT 1999 | 1.50 | 1.80 | 15.64 | 9.22 | 15.75 | .00 | .00 | .00 | 24.97 | 40.61 |
| HAUL FRUIT | CUSTOM HAULING | OCT 1999 | .00 | .00 | .00 | .00 | .00 | 15.00 | .00 | .00 | 15.00 | 15.00 |
| GOPHER CONTROL | HAND LABOR | ANN 1999 | .00 | 2.00 | .00 | .00 | 15.00 | .00 | 1.28 | .73 | 17.01 | 17.01 |
| MISC USE | ½ TON PICKUP | ANN 1999 | 7.14 | 7.85 | 36.45 | 23.42 | 68.69 | .00 | .00 | 4.14 | 96.25 | 132.70 |
| MISC USE | 4-WHEEL ALL TERRAIN VEHICLE | ANN 1999 | 5.70 | .00 | 12.50 | 5.74 | .00 | .00 | .00 | .26 | 6.00 | 18.51 |
| MISC USE | MACHINE SHED & SHOP | ANN 1999 | .00 | .00 | 38.71 | .71 | .00 | .00 | .00 | .03 | .75 | 39.46 |
| MISC USE | SHOP TOOLS | ANN 1999 | .00 | .00 | 15.29 | .00 | .00 | .00 | .00 | .00 | .00 | 15.29 |
| OVERHEAD | UTILITIES, LEGAL, ACCTNG, ETC. | ANN 1999 | .00 | .00 | .00 | .00 | .00 | 84.05 | .00 | .00 | 84.05 | 84.05 |
| MANAGEMENT | OPERATOR MANAGEMENT | ANN 1999 | .00 | .00 | 250.00 | .00 | .00 | .00 | .00 | .00 | .00 | 250.00 |
| LAND COST | INTEREST ON LAND | ANN 1999 | .00 | .00 | 350.00 | .00 | .00 | .00 | .00 | .00 | .00 | 350.00 |
| TAXES | LAND | ANN 1999 | .00 | .00 | 49.78 | .00 | .00 | .00 | .00 | .00 | .00 | 49.78 |
| INTEREST COST | INTEREST ON 1ST YR ESTAB COST | ANN 1999 | .00 | .00 | 855.69 | .00 | .00 | .00 | .00 | .00 | .00 | 855.69 |
| TOTAL PER ACRE | | | 32.14 | 134.86 | 1954.95 | 165.48 | 1077.59 | 319.05 | 146.52 | 56.51 | 1765.15 | 3720.10 |

TABLE 6B: MATERIALS AND SERVICES USED BY OPERATION - YEAR 2.

| OPERATION | | MATERIAL AND/OR SERVICE |
|-------------------------|---------|--|
| Dormant Spray + Zinc | March | 1.05 gals. of Superior Oil @ \$2.60/gal. 2.80 lbs. of Zinc 50 @ \$1.29/lb. |
| Mildew/Boron Spray | April | 0.875 oz. of Rally @ \$4.70/oz. 0.525 lb. of Solubor @ 80¢/lb. |
| Mildew Spray | April | 1.75 lbs. of wetable sulfur @ 75¢/lb. |
| Rent Beehives | April | 2.0 beehives @ \$35.00/hive |
| Irrigate | Season | Irrigation charge and electricity @ \$150.00/acre |
| Fertigate | Season | 100 lbs. of urea @ 18¢/lb. |
| Mildew Spray | May | 2.10 ozs. of Rubigan @ \$2.25/oz. |
| Mildew Spray | May | 1.75 lbs. of wetable sulfur @ 75¢/lb. |
| Cover Spray | May | 0.35 lb. of Guthion @ \$8.02/lb. |
| Tree Training | May | Tape & twine @ \$37.50/acre |
| Herbicide | June | 2.0 qts. of Surflan @ \$16.60/qt. |
| Cover Spray | June | 0.35 lb. of Guthion @ \$8.02/lb. |
| Tree Training | July | Tape & twine @ \$12.50/acre |
| Cover Spray | July | 0.5 pt. of Supracide @ \$6.68/pt. |
| Herbicide | August | 1.0 qt. of Gramoxone @ \$12.50/qt. |
| Haul Fruit | October | 5.0 bins of apples hauled @ \$3.00/bin |
| Gopher Control | Annual | 1.0 lb. of Gopher Getter @ \$1.28/lb. |
| Overhead | Annual | 5% variable cost |

**TABLE 7B: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY
APPLE ORCHARD IN EASTERN WASHINGTON - YEAR 2.**

| | | PRICE OR | | VALUE OR | YOUR |
|-----------------------|-------|----------------|----------|----------|-------|
| | | UNIT COST/UNIT | QUANTITY | COST | FARM |
| ----- | | | | | |
| VARIABLE COSTS | | \$ | | \$ | |
| SUPERIOR OIL | GAL. | 2.60 | .60 | 1.56 | _____ |
| SUPRACIDE | PT. | 6.68 | 1.00 | 6.68 | _____ |
| ZINC 50 | LB. | 1.29 | 4.50 | 5.81 | _____ |
| RALLY | OZ. | 4.70 | .88 | 4.11 | _____ |
| SOLUBOR | LB. | .80 | .53 | .42 | _____ |
| WETABLE SULFUR | LB. | .75 | 3.50 | 2.62 | _____ |
| SURFLAN | QT. | 16.60 | 2.00 | 33.20 | _____ |
| RUBIGAN | OZ. | 2.25 | 2.10 | 4.73 | _____ |
| GUTHION | LB. | 8.02 | .70 | 5.62 | _____ |
| GRAMOXONE | QT. | 12.50 | 1.00 | 12.50 | _____ |
| GOPHER GETTER | LB. | 1.28 | 1.00 | 1.28 | _____ |
| UREA | LB. | .18 | 100.00 | 18.00 | _____ |
| RENT BEEHIVES | HIVE | 35.00 | 2.00 | 70.00 | _____ |
| CUSTOM HAULING | BIN | 3.00 | 5.00 | 15.00 | _____ |
| CASUAL LABOR | HOURL | 7.50 | 81.95 | 614.63 | _____ |
| LABOR (TRAC/MACH) | HOURL | 8.75 | 52.91 | 462.96 | _____ |
| TAPE & TWINE | ACRE | 50.00 | 1.00 | 50.00 | _____ |
| IRR CHARGE & ELECT | ACRE | 150.00 | 1.00 | 150.00 | _____ |
| TRACTOR REPAIR | ACRE | 13.95 | 1.00 | 13.95 | _____ |
| TRACTOR FUEL/LUBE | ACRE | 16.84 | 1.00 | 16.84 | _____ |
| MACHINERY REPAIRS | ACRE | 106.69 | 1.00 | 106.69 | _____ |
| MACHINE FUEL/LUBE | ACRE | 27.99 | 1.00 | 27.99 | _____ |
| OVERHEAD | ACRE | 84.05 | 1.00 | 84.05 | _____ |
| INTEREST ON OP. CAP. | ACRE | 56.51 | 1.00 | 56.51 | _____ |
| | | | | ----- | |
| TOTAL VARIABLE COST | | | | 1765.15 | _____ |
| | | | | | |
| FIXED COSTS | | \$ | | \$ | |
| TRACTOR DEPRECIATION | ACRE | 24.80 | 1.00 | 24.80 | _____ |
| TRACTOR INTEREST | ACRE | 27.20 | 1.00 | 27.20 | _____ |
| TRACTOR INSURANCE | ACRE | 1.81 | 1.00 | 1.81 | _____ |
| TRACTOR TAXES | ACRE | 5.44 | 1.00 | 5.44 | _____ |
| MACHINE DEPRECIATION* | ACRE | 181.08 | 1.00 | 181.08 | _____ |
| MACHINE INTEREST* | ACRE | 173.29 | 1.00 | 173.29 | _____ |
| MACHINE INSURANCE* | ACRE | 11.55 | 1.00 | 11.55 | _____ |
| MACHINE TAXES* | ACRE | 24.31 | 1.00 | 24.31 | _____ |
| LAND COST | ACRE | 350.00 | 1.00 | 350.00 | _____ |
| LAND TAXES | ACRE | 49.78 | 1.00 | 49.78 | _____ |
| MANAGEMENT | ACRE | 250.00 | 1.00 | 250.00 | _____ |
| INTEREST ON ESTAB. | ACRE | 855.69 | 1.00 | 855.69 | _____ |
| | | | | ----- | |
| TOTAL FIXED COST | | | | 1954.95 | _____ |
| | | | | | |
| TOTAL COST | | | | 3720.10 | _____ |
| ----- | | | | | |

*INCLUDES MACHINE SHED & SHOP, WIND MACHINE AND IRRIGATION SYSTEM.

TABLE 5C: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY APPLE ORCHARD IN EASTERN WASHINGTON - YEAR 3.

| | | VARIABLE COST | | | | | | | | | | | |
|------------------|--------------------------------|---------------|------|---------------|----------------|---------------|------------------|---------|---------|--------|--------|------------------|---------|
| OPERATION | TOOLING | MTH | YEAR | MACH HOURS | LABOR HOURS | TOTAL | FUEL, LUBE, & | | | | | TOTAL | TOTAL |
| | | | | | | FIXED COST | REPAIRS | LABOR | SERVICE | MATER. | INTER. | VARIABLE COST | COST |
| | | | | | | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| PRUNE | HAND LABOR (2 PEOPLE) | FEB | 2000 | .00 | 15.00 | 1.38 | .00 | 112.50 | .00 | .00 | 6.75 | 119.25 | 120.63 |
| DORM. SPY + ZINC | 52HP-WT, BLAST SPRAYER | MAR | 2000 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 9.06 | 1.00 | 20.09 | 28.47 |
| MILDEW/BORON SPY | 52HP-WT, BLAST SPRAYER | APR | 2000 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 6.47 | .74 | 17.25 | 25.63 |
| MILDEW SPRAY | 52HP-WT, BLAST SPRAYER | APR | 2000 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 1.88 | .54 | 12.44 | 20.82 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | APR | 2000 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 9.08 | .86 | 19.97 | 28.35 |
| RENT BEEHIVE | TWO BEEHIVE PER ACRE | APR | 2000 | .00 | .00 | .00 | .00 | .00 | 70.00 | .00 | 3.15 | 73.15 | 73.15 |
| IRRIGATE | SOLID SET UNDERTREE IRR SYSTEM | SEA | 2000 | 1.00 | .00 | 203.03 | 50.00 | .00 | 150.00 | .00 | 9.00 | 209.00 | 412.03 |
| IRRIGATE | 4-WHEEL ATV W/ABOVE OPERATION | SEA | 2000 | 10.00 | 10.00 | 21.94 | 10.08 | 87.50 | .00 | .00 | 4.39 | 101.97 | 123.90 |
| FERTIGATE | THROUGH THE IRRIGATION SYSTEM | SEA | 2000 | .00 | 1.00 | .00 | .00 | 8.75 | .00 | 18.00 | 1.20 | 27.95 | 27.95 |
| CALCIUM SPY (4X) | 52HP-WT, BLAST SPRAYER | SEA | 2000 | 2.00 | 2.40 | 33.52 | 19.12 | 21.00 | .00 | 2.58 | 1.92 | 44.62 | 78.14 |
| MOW | 52HP-WT, 9' ROTARY MOWER | MAY | 2000 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .28 | 7.83 | 12.78 |
| MILDEW/COVER SPY | 52HP-WT, BLAST SPRAYER | MAY | 2000 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 15.83 | .97 | 26.83 | 35.21 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | MAY | 2000 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 4.01 | .53 | 14.57 | 22.95 |
| MILDEW SPRAY | 52HP-WT, BLAST SPRAYER | MAY | 2000 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 1.88 | .45 | 12.35 | 20.73 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | MAY | 2000 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 4.52 | .55 | 15.10 | 23.48 |
| TREE TRAINING | HAND LABOR | MAY | 2000 | .00 | 20.00 | .00 | .00 | 150.00 | .00 | 12.50 | 6.09 | 168.59 | 168.59 |
| HERBICIDE | 52HP-WT, 100 GAL SPRAYER | MAY | 2000 | .40 | .48 | 4.50 | 6.32 | 4.20 | .00 | 33.20 | 1.64 | 45.36 | 49.86 |
| MOW | 52HP-WT, 9' ROTARY MOWER | JUN | 2000 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .23 | 7.78 | 12.72 |
| HAND THINNING | HAND LABOR | JUN | 2000 | .00 | 14.00 | .00 | .00 | 105.00 | .00 | .00 | 3.15 | 108.15 | 108.15 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | JUN | 2000 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 4.01 | .42 | 14.46 | 22.84 |
| BORON SPRAY | 52HP-WT, BLAST SPRAYER | JUN | 2000 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | .60 | .32 | 10.95 | 19.33 |
| MOW | 52HP-WT, 9' ROTARY MOWER | JUL | 2000 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .17 | 7.72 | 12.67 |
| TREE TRAINING | HAND LABOR | JUL | 2000 | .00 | 20.00 | .00 | .00 | 150.00 | .00 | 12.50 | 3.66 | 166.16 | 166.16 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | JUL | 2000 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 4.01 | .32 | 14.36 | 22.74 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | JUL | 2000 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 7.14 | .39 | 17.56 | 25.94 |
| HERBICIDE | 52HP-WT, 100 GAL SPRAYER | JUL | 2000 | .40 | .48 | 4.50 | 6.32 | 4.20 | .00 | 12.50 | .52 | 23.54 | 28.04 |
| MOW | 52HP-WT, 9' ROTARY MOWER | AUG | 2000 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .11 | 7.66 | 12.61 |
| MOW | 52HP-WT, 9' ROTARY MOWER | OCT | 2000 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .00 | 7.55 | 12.50 |
| HARVEST(15 BINS) | PICKERS (4 PEOPLE) | OCT | 2000 | .00 | 32.00 | 4.25 | .00 | 240.00 | .00 | .00 | .00 | 240.00 | 244.25 |
| HARVEST | 52HP-WT, BACKFORK | OCT | 2000 | 6.00 | 8.00 | 39.09 | 20.67 | 70.00 | .00 | .00 | .00 | 90.67 | 129.75 |
| BIN HANDLING | 52HP-WT, FORKLIFT | OCT | 2000 | 4.00 | 4.80 | 41.72 | 24.58 | 42.00 | .00 | .00 | .00 | 66.58 | 108.30 |
| HAUL FRUIT | CUSTOM HAULING | OCT | 2000 | .00 | .00 | .00 | .00 | .00 | 45.00 | .00 | .00 | 45.00 | 45.00 |
| HERBICIDE | 52HP-WT, 100 GAL SPRAYER | OCT | 2000 | .40 | .48 | 4.50 | 6.32 | 4.20 | .00 | 42.16 | .00 | 52.68 | 57.18 |
| GOPHER CONTROL | HAND LABOR | ANN | 2000 | .00 | 2.00 | .00 | .00 | 15.00 | .00 | 1.28 | .73 | 17.01 | 17.01 |
| MISC USE | ½ TON PICKUP | ANN | 2000 | 7.14 | 7.85 | 36.45 | 23.42 | 68.69 | .00 | .00 | 4.14 | 96.25 | 132.70 |
| MISC USE | 4-WHEEL ALL TERRAIN VEHICLE | ANN | 2000 | 5.70 | .00 | 12.50 | 5.74 | .00 | .00 | .00 | .26 | 6.00 | 18.51 |
| MISC USE | MACHINE SHED & SHOP | ANN | 2000 | .00 | .00 | 38.71 | .71 | .00 | .00 | .00 | .03 | .75 | 39.46 |
| MISC USE | SHOP TOOLS | ANN | 2000 | .00 | .00 | 15.29 | .00 | .00 | .00 | .00 | .00 | .00 | 15.29 |
| OVERHEAD | UTILITIES, LEGAL, ACCTNG, ETC. | ANN | 2000 | .00 | .00 | .00 | .00 | .00 | 96.86 | .00 | .00 | 96.86 | 96.86 |
| MANAGEMENT | OPERATOR MANAGEMENT | ANN | 2000 | .00 | .00 | 250.00 | .00 | .00 | .00 | .00 | .00 | .00 | 250.00 |
| LAND COST | INTEREST ON LAND | ANN | 2000 | .00 | .00 | 350.00 | .00 | .00 | .00 | .00 | .00 | .00 | 350.00 |
| TAXES | LAND | ANN | 2000 | .00 | .00 | 53.71 | .00 | .00 | .00 | .00 | .00 | .00 | 53.71 |
| INTEREST COST | INTEREST ON ESTABLISHMENT COST | ANN | 2000 | .00 | .00 | 1100.50 | .00 | .00 | .00 | .00 | .00 | .00 | 1100.50 |
| TOTAL PER ACRE | | | | 45.54 | 148.44 | 2340.86 | 244.36 | 1170.10 | 361.86 | 203.21 | 54.51 | 2034.02 | 4374.88 |

TABLE 6C: MATERIALS AND SERVICES USED BY OPERATION - YEAR 3.

| OPERATION | | MATERIAL AND/OR SERVICE |
|-------------------------|--------|--|
| Dormant Spray + Zinc | March | 1.5 gals. of Superior Oil @ \$2.60/gal. 4.0 lbs. of Zinc 50 @ \$1.29/lb. |
| Mildew/Boron Spray | April | 1.25 ozs. of Rally @ \$4.70/oz. 0.75 lb. of Solubor @ 80¢/lb. |
| Mildew Spray | April | 2.5 lbs. of wetable sulfur @ 75¢/lb. |
| Cover Spray | April | 1.0 lb. of DiPel @ \$9.08/lb. |
| Rent Beehives | April | 2.0 beehives @ \$35.00/hive |
| Irrigate | Season | Irrigation charge & electricity @ \$150.00/acre |
| Fertigate | Season | 100 lbs. of urea @ 18¢/lb. |
| Calcium Spray (4X) | Season | 1.5 lbs. of calcium chloride @ 43¢/lb. each spraying. |
| Mildew/Cover Spray | May | 3.0 ozs. of Rubigan @ \$2.25/oz. 1.0 lb. of DiPel @ \$9.08/lb. |
| Cover Spray | May | 0.5 lb. of Guthion @ \$8.02/lb. |
| Mildew Spray | May | 2.5 lbs. of wetable sulfur @ 75¢/lb. |
| Cover Spray | May | 0.75 pt. of Lorsban @ \$6.03/pt. |
| Tree Training | May | Tape & twine @ \$12.50/acre |
| Herbicide | May | 2.0 qts. of Surflan @ \$16.60/qt. |
| Cover Spray | June | 0.5 lb. of Guthion @ \$8.02/lb. |
| Boron Spray | June | 0.75 lb. of Solubor @ 80¢/lb. |
| Tree Training | July | Tape & twine @ \$12.50/acre |
| Cover Spray | July | 0.5 lb. of Guthion @ \$8.02/lb. |
| Cover Spray | July | 2.0 ozs. of Provado @ \$3.57/oz. |
| Herbicide | July | 1.0 qt. of Gramoxone @ \$12.50/qt. |

TABLE 6C: CONTINUED.

| OPERATION | | MATERIAL AND/OR SERVICE |
|----------------|---------|---|
| Haul Fruit | October | 15 bins of apples hauled @ \$3.00/bin |
| Herbicide | October | 2.0 qts. of Surflan @ \$16.60/qt. 2.0 qts. of Princep @ \$4.48/qt. |
| Gopher Control | Annual | 1.0 lb. of Gopher Getter @ \$1.28/lb. |
| Overhead | Annual | 5% variable cost |

TABLE 7C: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY APPLE ORCHARD IN EASTERN WASHINGTON - YEAR 3.

| | | PRICE OR | | VALUE OR | YOUR |
|-----------------------|------|----------------|----------|----------|-------|
| | | UNIT COST/UNIT | QUANTITY | COST | FARM |
| ----- | | | | | |
| VARIABLE COSTS | | \$ | | \$ | |
| UREA | LB. | .18 | 100.00 | 18.00 | _____ |
| CALCIUM CHLORIDE | LB. | .43 | 6.00 | 2.58 | _____ |
| SUPERIOR OIL | GAL. | 2.60 | 1.50 | 3.90 | _____ |
| ZINC 50 | LB. | 1.29 | 4.00 | 5.16 | _____ |
| RALLY | OZ. | 4.70 | 1.25 | 5.88 | _____ |
| SOLUBOR | LB. | .80 | 1.50 | 1.20 | _____ |
| WETABLE SULFUR | LB. | .75 | 5.00 | 3.76 | _____ |
| LORSBAN | PT. | 6.03 | .75 | 4.52 | _____ |
| RUBIGAN | OZ. | 2.25 | 3.00 | 6.75 | _____ |
| DIPEL | LB. | 9.08 | 2.00 | 18.16 | _____ |
| SURFLAN | QT. | 16.60 | 4.00 | 66.40 | _____ |
| GUTHION | LB. | 8.02 | 1.50 | 12.01 | _____ |
| GRAMOXONE | QT. | 12.50 | 1.00 | 12.50 | _____ |
| PROVADO | OZ. | 3.57 | 2.00 | 7.14 | _____ |
| PRINCEP | QT. | 4.48 | 2.00 | 8.96 | _____ |
| GOPHER GETTER | LB. | 1.28 | 1.00 | 1.28 | _____ |
| RENT BEEHIVES | HIVE | 35.00 | 2.00 | 70.00 | _____ |
| CUSTOM HAULING | BIN | 3.00 | 15.00 | 45.00 | _____ |
| CASUAL LABOR | HOUR | 7.50 | 103.00 | 772.50 | _____ |
| LABOR (TRAC/MACH) | HOUR | 8.75 | 45.44 | 397.60 | _____ |
| TAPE & TWINE | ACRE | 12.50 | 2.00 | 25.00 | _____ |
| IRR CHARGE & ELECT | ACRE | 150.00 | 1.00 | 150.00 | _____ |
| TRACTOR REPAIR | ACRE | 32.55 | 1.00 | 32.55 | _____ |
| TRACTOR FUEL/LUBE | ACRE | 39.30 | 1.00 | 39.30 | _____ |
| MACHINERY REPAIRS | ACRE | 144.51 | 1.00 | 144.51 | _____ |
| MACHINE FUEL/LUBE | ACRE | 27.99 | 1.00 | 27.99 | _____ |
| OVERHEAD | ACRE | 96.86 | 1.00 | 96.86 | _____ |
| INTEREST ON OP. CAP. | ACRE | 54.51 | 1.00 | 54.51 | _____ |
| | | | | ----- | |
| TOTAL VARIABLE COST | | | | 2034.02 | _____ |
| | | | | | |
| FIXED COSTS | | \$ | | \$ | |
| TRACTOR DEPRECIATION | ACRE | 57.87 | 1.00 | 57.87 | _____ |
| TRACTOR INTEREST | ACRE | 63.47 | 1.00 | 63.47 | _____ |
| TRACTOR INSURANCE | ACRE | 4.23 | 1.00 | 4.23 | _____ |
| TRACTOR TAXES | ACRE | 12.69 | 1.00 | 12.69 | _____ |
| MACHINE DEPRECIATION* | ACRE | 212.44 | 1.00 | 212.44 | _____ |
| MACHINE INTEREST* | ACRE | 194.45 | 1.00 | 194.45 | _____ |
| MACHINE INSURANCE* | ACRE | 12.96 | 1.00 | 12.96 | _____ |
| MACHINE TAXES* | ACRE | 28.54 | 1.00 | 28.54 | _____ |
| LAND TAXES | ACRE | 53.71 | 1.00 | 53.71 | _____ |
| LAND COST | ACRE | 350.00 | 1.00 | 350.00 | _____ |
| MANAGEMENT | ACRE | 250.00 | 1.00 | 250.00 | _____ |
| INTEREST ON ESTAB. | ACRE | 1100.50 | 1.00 | 1100.50 | _____ |
| | | | | ----- | |
| TOTAL FIXED COST | | | | 2340.86 | _____ |
| | | | | | |
| TOTAL COST | | | | 4374.88 | _____ |
| ----- | | | | | |

*INCLUDES MACHINE SHED & SHOP, WIND MACHINE AND IRRIGATION SYSTEM.

TABLE 5D: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY APPLE ORCHARD IN EASTERN WASHINGTON - YEAR 4.

| | | ----- | | | | | | | | | | | |
|------------------|--------------------------------|--|------|---------------|----------------|---------------|--------------------|--------|---------|--------|--------|------------------|--------|
| | | VARIABLE COST | | | | | | | | | | | |
| OPERATION | TOOLING | MTH | YEAR | MACH HOURS | LABOR HOURS | TOTAL | FUEL, | | | | | TOTAL | TOTAL |
| | | | | | | FIXED COST | LUBE, & REPAIRS | LABOR | SERVICE | MATER. | INTER. | VARIABLE COST | COST |
| | | ----- | | | | | | | | | | | |
| | | \$ \$ \$ \$ \$ \$ \$ | | | | | | | | | | | |
| PRUNE | HAND LABOR (2 PEOPLE) | FEB | 2001 | .00 | 25.00 | 2.30 | .00 | 187.50 | .00 | .00 | 11.25 | 198.75 | 201.05 |
| DORM. SPY + ZINC | 52HP-WT, BLAST SPRAYER | MAR | 2001 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 12.68 | 1.19 | 23.91 | 32.29 |
| MILDEW/BORON SPY | 52HP-WT, BLAST SPRAYER | APR | 2001 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 9.06 | .86 | 19.95 | 28.33 |
| MILDEW SPRAY | 52HP-WT, BLAST SPRAYER | APR | 2001 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 2.63 | .57 | 13.23 | 21.60 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | APR | 2001 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 12.71 | 1.02 | 23.77 | 32.15 |
| THINNING SPRAY | 52HP-WT, BLAST SPRAYER | APR | 2001 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 54.69 | 2.91 | 67.63 | 76.01 |
| RENT BEEHIVES | TWO BEEHIVES PER ACRE | APR | 2001 | .00 | .00 | .00 | .00 | .00 | 70.00 | .00 | 3.15 | 73.15 | 73.15 |
| FROST CONTROL | WIND MACHINE | APR | 2001 | .00 | 2.00 | 152.11 | 92.79 | 17.50 | .00 | .00 | 4.96 | 115.25 | 267.36 |
| FROST CONTROL | FROST ALARM & THERMOMETERS | APR | 2001 | .00 | .00 | 2.97 | .00 | .00 | .00 | .00 | .00 | .00 | 2.97 |
| FROST CONTROL | UNDERTREE SPRINKLERS | APR | 2001 | .00 | .00 | 74.90 | 10.00 | .00 | 18.75 | .00 | 1.29 | 30.04 | 104.94 |
| IRRIGATE | SOLID SET UNDERTREE IRR SYSTEM | SEA | 2001 | .00 | .00 | 203.03 | 50.00 | .00 | 150.00 | .00 | 9.00 | 209.00 | 412.03 |
| IRRIGATE | 4-WHEEL ATV W/ABOVE OPERATION | SEA | 2001 | 10.00 | 10.00 | 21.94 | 10.08 | 87.50 | .00 | .00 | 4.39 | 101.97 | 123.90 |
| FERTIGATE | THROUGH THE IRRIGATION SYSTEM | SEA | 2001 | .00 | 1.00 | .00 | .00 | 8.75 | .00 | 18.00 | 1.20 | 27.95 | 27.95 |
| CALCIUM SPY (4X) | 52HP-WT, BLAST SPRAYER | SEA | 2001 | 2.00 | 2.40 | 33.52 | 19.12 | 21.00 | .00 | 3.61 | 1.97 | 45.70 | 79.22 |
| MOW | 52HP-WT, 9' ROTARY MOWER | MAY | 2001 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .28 | 7.83 | 12.78 |
| MILDEW/COVER SPY | 52HP-WT, BLAST SPRAYER | MAY | 2001 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 22.16 | 1.21 | 33.40 | 41.78 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | MAY | 2001 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 5.61 | .59 | 16.23 | 24.61 |
| MILDEW SPRAY | 52HP-WT, BLAST SPRAYER | MAY | 2001 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 2.63 | .47 | 13.13 | 21.51 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | MAY | 2001 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 6.33 | .61 | 16.98 | 25.36 |
| THINNING SPRAY | 52HP-WT, BLAST SPRAYER | MAY | 2001 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 2.27 | .46 | 12.76 | 21.14 |
| MOW | 52HP-WT, 9' ROTARY MOWER | JUN | 2001 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .23 | 7.78 | 12.72 |
| HAND THINNING | HAND LABOR | JUN | 2001 | .00 | 23.00 | .00 | .00 | 172.50 | .00 | .00 | 5.18 | 177.67 | 177.67 |
| HERBICIDE | 52HP-WT, 100 GAL SPRAYER | JUN | 2001 | .40 | .48 | 4.50 | 6.32 | 4.20 | .00 | 11.91 | .67 | 23.11 | 27.61 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | JUN | 2001 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 5.61 | .47 | 16.11 | 24.49 |
| THINNING SPRAY | 52HP-WT, BLAST SPRAYER | JUN | 2001 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 7.06 | .51 | 17.60 | 25.98 |
| MOW | 52HP-WT, 9' ROTARY MOWER | JUL | 2001 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .17 | 7.72 | 12.67 |
| TREE TRAINING | HAND LABOR | JUL | 2001 | .00 | 25.00 | .00 | .00 | 187.50 | .00 | 50.00 | 5.34 | 242.84 | 242.84 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | JUL | 2001 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 5.61 | .35 | 16.00 | 24.38 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | JUL | 2001 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 10.00 | .45 | 20.48 | 28.86 |
| MOW | 52HP-WT, 9' ROTARY MOWER | AUG | 2001 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .11 | 7.66 | 12.61 |
| HERBICIDE | 52HP-WT, 100 GAL SPRAYER | AUG | 2001 | .40 | .48 | 4.50 | 6.32 | 4.20 | .00 | 11.91 | .34 | 22.77 | 27.27 |
| MOW | 52HP-WT, 9' ROTARY MOWER | OCT | 2001 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .00 | 7.55 | 12.50 |
| HARVEST(25 BINS) | PICKERS (10 PEOPLE) | OCT | 2001 | .00 | .00 | 6.64 | .00 | .00 | 562.50 | .00 | .00 | 562.50 | 569.14 |
| HARVEST | 52HP-WT, BACKFORK | OCT | 2001 | 5.00 | 5.50 | 32.57 | 17.22 | 48.13 | .00 | .00 | .00 | 65.35 | 97.92 |
| CHECK BINS | CHECKER FOR PICKING CREW | OCT | 2001 | .00 | 5.00 | .00 | .00 | 37.50 | .00 | .00 | .00 | 37.50 | 37.50 |
| BIN HANDLING | 52HP-WT, BIN TRAILER | OCT | 2001 | 2.50 | 2.75 | 19.64 | 10.42 | 24.06 | .00 | .00 | .00 | 34.48 | 54.12 |
| LOAD FRUIT | 52HP-WT, FORKLIFT | OCT | 2001 | 1.00 | 1.10 | 10.43 | 6.14 | 9.63 | .00 | .00 | .00 | 15.77 | 26.20 |
| HAUL FRUIT | CUSTOM HAULING | OCT | 2001 | .00 | .00 | .00 | .00 | .00 | 75.00 | .00 | .00 | 75.00 | 75.00 |
| HERBICIDE | 52HP-WT, 100 GAL SPRAYER | OCT | 2001 | .40 | .48 | 4.50 | 6.32 | 4.20 | .00 | 42.16 | .00 | 52.68 | 57.18 |
| GOPHER CONTROL | HAND LABOR | ANN | 2001 | .00 | 2.00 | .00 | .00 | 15.00 | .00 | 1.28 | .73 | 17.01 | 17.01 |

TABLE 5D: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY APPLE ORCHARD IN EASTERN WASHINGTON - YEAR 4 (CONTINUED).

| ----- | | | | | | | | | | | | |
|----------------|--------------------------------|----------|------------|-------------|------------------|-----------------------|--------|---------|--------|--------|---------------------|------------|
| VARIABLE COST | | | | | | | | | | | | |
| ----- | | | | | | | | | | | | |
| OPERATION | TOOLING | MTH YEAR | MACH HOURS | LABOR HOURS | TOTAL FIXED COST | FUEL, LUBE, & REPAIRS | LABOR | SERVICE | MATER. | INTER. | TOTAL VARIABLE COST | TOTAL COST |
| ----- | | | | | | | | | | | | |
| | | | | | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| MISC USE | ½ TON PICKUP | ANN 2001 | 7.14 | 7.85 | 36.45 | 23.42 | 68.69 | .00 | .00 | 4.14 | 96.25 | 132.70 |
| MISC USE | 4-WHEEL ALL TERRAIN VEHICLE | ANN 2001 | 5.70 | .00 | 12.50 | 5.74 | .00 | .00 | .00 | .26 | 6.00 | 18.51 |
| MISC USE | MACHINE SHED & SHOP | ANN 2001 | .00 | .00 | 38.71 | .71 | .00 | .00 | .00 | .03 | .75 | 39.46 |
| MISC USE | SHOP TOOLS | ANN 2001 | .00 | .00 | 15.29 | .00 | .00 | .00 | .00 | .00 | .00 | 15.29 |
| OVERHEAD | UTILITIES, LEGAL, ACCTNG, ETC. | ANN 2001 | .00 | .00 | .00 | .00 | .00 | 129.06 | .00 | .00 | 129.06 | 129.06 |
| MANAGEMENT | OPERATOR MANAGEMENT | ANN 2001 | .00 | .00 | 250.00 | .00 | .00 | .00 | .00 | .00 | .00 | 250.00 |
| LAND COST | INTEREST ON LAND | ANN 2001 | .00 | .00 | 350.00 | .00 | .00 | .00 | .00 | .00 | .00 | 350.00 |
| TAXES | LAND | ANN 2001 | .00 | .00 | 64.19 | .00 | .00 | .00 | .00 | .00 | .00 | 64.19 |
| INTEREST COST | INTEREST ON ESTABLISHMENT COST | ANN 2001 | .00 | .00 | 1224.24 | .00 | .00 | .00 | .00 | .00 | .00 | 1224.24 |
| TOTAL PER ACRE | | | 44.04 | 125.19 | 2706.97 | 345.25 | 995.41 | 1005.31 | 297.94 | 66.39 | 2710.30 | 5417.27 |
| ----- | | | | | | | | | | | | |

TABLE 6D: MATERIALS AND SERVICES USED BY OPERATION - YEAR 4.

| OPERATION | | MATERIAL AND/OR SERVICE |
|-------------------------|--------|---|
| Dormant Spray + Zinc | March | 2.1 gals. of Superior Oil @ \$2.60/gal. 5.6 lbs. of Zinc 50 @ \$1.29/lb. |
| Mildew/Boron Spray | April | 1.75 ozs. of Rally @ \$4.70/oz. 1.05 lbs. of Solubor @ 80¢/lb. |
| Mildew Spray | April | 3.5 lbs. of wetable sulfur @ 75¢/lb. |
| Cover Spray | April | 1.4 lb. of DiPel @ \$9.08/lb. |
| Thinning Spray | April | 4.0 qts. of Wilthin @ \$11.61/qt. 3.0 pts. of Regulaid @ \$2.75/pt. |
| Rent Beehives | April | 2.0 beehives @ \$35.00/hive |
| Frost Control | April | Irrigation charge & electricity @ \$18.50/acre |
| Irrigate | Season | Irrigation charge & electricity @ \$150.00/acre |
| Fertigate | Season | 100 lbs. of urea @ 18¢/lb. |
| Calcium Spray (4X) | Season | 2.1 lbs. of calcium chloride @ 43¢/lb. each spraying |
| Mildew/Cover Spray | May | 4.2 ozs. of Rubigan @ \$2.25/oz. 1.4 lb. of DiPel @ \$9.08/lb. |
| Cover Spray | May | 0.7 lb. of Guthion @ \$8.02/lb. |
| Mildew Spray | May | 3.5 lbs. of wetable sulfur @ 75¢/lb. |
| Cover Spray | May | 1.05 pts. of Lorsban @ \$6.03/pt. |
| Thinning Spray | May | 0.7 pt. of Carbaryl 4L @ \$3.24/pt. |
| Herbicide | June | 1.0 qt. of Roundup @ \$11.91/qt. |
| Cover Spray | June | 0.7 lb. of Guthion @ \$8.02/lb. |
| Thinning Spray | June | 1.4 pts. of Carbaryl 4L @ \$3.24/pt. 1.4 ozs. of NAA 200 @ 82¢/oz. 0.5 pt. of Regulaid @ \$2.75/pt. |
| Tree Training | July | Tape & twine @ \$50.00/acre |

TABLE 6D: MATERIALS AND SERVICES USED BY OPERATION - YEAR 4.
(Continued)

| OPERATION | | MATERIAL AND/OR SERVICE |
|----------------|---------|---|
| Cover Spray | July | 0.7 lb. of Guthion @ \$8.02/lb. |
| Cover Spray | July | 2.8 ozs. of Provado @ \$3.57/oz. |
| Herbicide | August | 1.0 qt. of Roundup @ \$11.91/qt. |
| Harvest | October | 25.0 bins of apples picked @ \$22.50/bin |
| Haul Fruit | October | 25.0 bins of apples @ \$3.00/bin |
| Herbicide | October | 2.0 qts. of Surflan @ \$16.60/qt. 2.0 qts. of Princep @ \$4.48/qt. |
| Gopher Control | Annual | 1.0 lb. of Gopher Getter @ \$1.28/lb. |
| Overhead | Annual | 5% variable cost |

TABLE 7D: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY APPLE ORCHARD IN EASTERN WASHINGTON - YEAR 4.

| | | PRICE OR | | VALUE OR | YOUR |
|-----------------------|------|----------------|----------|----------|-------|
| | | UNIT COST/UNIT | QUANTITY | COST | FARM |
| VARIABLE COSTS | | \$ | | \$ | |
| UREA | LB. | .18 | 100.00 | 18.00 | _____ |
| CALCIUM CHLORIDE | LB. | .43 | 8.40 | 3.61 | _____ |
| SUPERIOR OIL | GAL. | 2.60 | 2.10 | 5.46 | _____ |
| ZINC 50 | LB. | 1.29 | 5.60 | 7.22 | _____ |
| WILTHIN | QT. | 11.61 | 4.00 | 46.44 | _____ |
| RALLY | OZ. | 4.70 | 1.75 | 8.23 | _____ |
| SOLUBOR | LB. | .80 | 1.05 | .84 | _____ |
| WETABLE SULFUR | LB. | .75 | 7.00 | 5.26 | _____ |
| RUBIGAN | OZ. | 2.25 | 4.20 | 9.45 | _____ |
| DIPEL | LB. | 9.08 | 2.80 | 25.42 | _____ |
| LORSBAN | PT. | 6.03 | 1.05 | 6.33 | _____ |
| CARBARYL 4L | PT. | 3.24 | 2.10 | 6.81 | _____ |
| REGULAID | PT. | 2.75 | 3.50 | 9.63 | _____ |
| GUTHION | LB. | 8.02 | 2.10 | 16.83 | _____ |
| NAA 200 | OZ. | .82 | 1.40 | 1.15 | _____ |
| ROUNDUP | QT. | 11.91 | 2.00 | 23.82 | _____ |
| PROVADO | OZ. | 3.57 | 2.80 | 10.00 | _____ |
| SURFLAN | QT. | 16.60 | 2.00 | 33.20 | _____ |
| PRINCEP | QT. | 4.48 | 2.00 | 8.96 | _____ |
| GOPHER GETTER | LB. | 1.28 | 1.00 | 1.28 | _____ |
| RENT BEEHIVES | HIVE | 35.00 | 2.00 | 70.00 | _____ |
| CASUAL LABOR | HOUR | 7.50 | 80.00 | 600.00 | _____ |
| LABOR (TRAC/MACH) | HOUR | 8.75 | 45.19 | 395.41 | _____ |
| PICKING LABOR | BIN | 22.50 | 25.00 | 562.50 | _____ |
| CUSTOM HAULING | BIN | 3.00 | 25.00 | 75.00 | _____ |
| TAPE & TWINE | ACRE | 50.00 | 1.00 | 50.00 | _____ |
| IRR CHARGE & ELECT | ACRE | 168.75 | 1.00 | 168.75 | _____ |
| TRACTOR REPAIR | ACRE | 31.80 | 1.00 | 31.80 | _____ |
| TRACTOR FUEL/LUBE | ACRE | 38.40 | 1.00 | 38.40 | _____ |
| MACHINERY REPAIRS | ACRE | 184.27 | 1.00 | 184.27 | _____ |
| MACHINE FUEL/LUBE | ACRE | 90.78 | 1.00 | 90.78 | _____ |
| OVERHEAD | ACRE | 129.06 | 1.00 | 129.06 | _____ |
| INTEREST ON OP. CAP. | ACRE | 66.39 | 1.00 | 66.39 | _____ |
| TOTAL VARIABLE COST | | | | 2710.30 | _____ |
| FIXED COSTS | | \$ | | \$ | |
| TRACTOR DEPRECIATION | ACRE | 56.53 | 1.00 | 56.53 | _____ |
| TRACTOR INTEREST | ACRE | 62.01 | 1.00 | 62.01 | _____ |
| TRACTOR INSURANCE | ACRE | 4.13 | 1.00 | 4.13 | _____ |
| TRACTOR TAXES | ACRE | 12.40 | 1.00 | 12.40 | _____ |
| MACHINE DEPRECIATION* | ACRE | 297.15 | 1.00 | 297.15 | _____ |
| MACHINE INTEREST* | ACRE | 313.35 | 1.00 | 313.35 | _____ |
| MACHINE INSURANCE* | ACRE | 20.83 | 1.00 | 20.83 | _____ |
| MACHINE TAXES* | ACRE | 52.14 | 1.00 | 52.14 | _____ |
| LAND TAXES | ACRE | 64.19 | 1.00 | 64.19 | _____ |
| LAND COST | ACRE | 350.00 | 1.00 | 350.00 | _____ |
| MANAGEMENT | ACRE | 250.00 | 1.00 | 250.00 | _____ |
| INTEREST ON ESTAB. | ACRE | 1224.24 | 1.00 | 1224.24 | _____ |
| TOTAL FIXED COST | | | | 2706.97 | _____ |
| TOTAL COST | | | | 5417.27 | _____ |

*INCLUDES MACHINE SHED & SHOP, WIND MACHINE AND IRRIGATION SYSTEM.

TABLE 5E: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY APPLE ORCHARD IN EASTERN WASHINGTON - YEAR 5.

| | | ----- | | | | | | | | | | |
|------------------|--------------------------------|--|------------|-------------|------------|-----------------------|---------|--------|--------|---------------|--------|--------|
| | | VARIABLE COST | | | | | | | | | | |
| OPERATION | TOOLING | MTH YEAR | MACH HOURS | LABOR HOURS | TOTAL | FUEL, LUBE, & REPAIRS | | | | | TOTAL | TOTAL |
| | | | | | FIXED COST | LABOR | SERVICE | MATER. | INTER. | VARIABLE COST | COST | |
| | | ----- | | | | | | | | | | |
| | | \$ \$ \$ \$ \$ \$ \$ | | | | | | | | | | |
| PRUNE | HAND LABOR (2 PEOPLE) | FEB 2002 | .00 | 30.00 | 2.76 | .00 | 225.00 | .00 | .00 | 13.50 | 238.50 | 241.26 |
| DORM. SPY + ZINC | 52HP-WT, BLAST SPRAYER | MAR 2002 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 16.31 | 1.38 | 27.72 | 36.10 |
| MILDEW/BORON SPY | 52HP-WT, BLAST SPRAYER | APR 2002 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 11.66 | .98 | 22.66 | 31.04 |
| MILDEW SPRAY | 52HP-WT, BLAST SPRAYER | APR 2002 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 3.38 | .60 | 14.01 | 22.39 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | APR 2002 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 16.34 | 1.19 | 27.56 | 35.94 |
| THINNING SPRAY | 52HP-WT, BLAST SPRAYER | APR 2002 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 66.30 | 3.43 | 79.77 | 88.15 |
| RENT BEEHIVE | TWO BEEHIVES PER ACRE | APR 2002 | .00 | .00 | .00 | .00 | .00 | 70.00 | .00 | 3.15 | 73.15 | 73.15 |
| FROST CONTROL | WIND MACHINE | APR 2002 | .00 | 2.00 | 152.11 | 92.79 | 17.50 | .00 | .00 | 4.96 | 115.25 | 267.36 |
| FROST CONTROL | FROST ALARM & THERMOMETERS | APR 2002 | .00 | .00 | 2.97 | .00 | .00 | .00 | .00 | .00 | .00 | 2.97 |
| FROST CONTROL | UNDERTREE SPRINKLERS | APR 2002 | .00 | .00 | 74.90 | 10.00 | .00 | 18.75 | .00 | 1.29 | 30.04 | 104.94 |
| IRRIGATE | SOLID SET UNDERTREE IRR SYSTEM | SEA 2002 | .00 | .00 | 203.03 | 50.00 | .00 | 150.00 | .00 | 9.00 | 209.00 | 412.03 |
| IRRIGATE | 4-WHEEL ATV W/ABOVE OPERATION | SEA 2002 | 10.00 | 10.00 | 21.94 | 10.08 | 87.50 | .00 | .00 | 4.39 | 101.97 | 123.90 |
| FERTIGATE | THROUGH THE IRRIGATION SYSTEM | SEA 2002 | .00 | 1.00 | .00 | .00 | 8.75 | .00 | 18.00 | 1.20 | 27.95 | 27.95 |
| CALCIUM SPY (4X) | 52HP-WT, BLAST SPRAYER | SEA 2002 | 2.00 | 2.40 | 33.52 | 19.12 | 21.00 | .00 | 6.19 | 2.08 | 48.40 | 81.92 |
| MOW | 52HP-WT, 9' ROTARY MOWER | MAY 2002 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .28 | 7.83 | 12.78 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | MAY 2002 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 16.34 | .99 | 27.36 | 35.74 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | MAY 2002 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 7.22 | .65 | 17.90 | 26.28 |
| MILDEW SPRAY | 52HP-WT, BLAST SPRAYER | MAY 2002 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 3.38 | .50 | 13.91 | 22.29 |
| THINNING SPRAY | 52HP-WT, BLAST SPRAYER | MAY 2002 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 5.83 | .59 | 16.46 | 24.84 |
| MOW | 52HP-WT, 9' ROTARY MOWER | JUN 2002 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .23 | 7.78 | 12.72 |
| HERBICIDE | 52HP-WT, 100 GAL SPRAYER | JUN 2002 | .40 | .48 | 4.50 | 6.32 | 4.20 | .00 | 11.91 | .67 | 23.11 | 27.61 |
| THINNING SPRAY | 52HP-WT, BLAST SPRAYER | JUN 2002 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 10.06 | .60 | 20.69 | 29.07 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | JUN 2002 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 7.22 | .52 | 17.77 | 26.15 |
| THINNING SPRAY | 52HP-WT, BLAST SPRAYER | JUN 2002 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 36.73 | 1.40 | 48.17 | 56.55 |
| HAND THINNING | HAND LABOR | JUN 2002 | .00 | 32.50 | .00 | .00 | 243.75 | .00 | .00 | 7.31 | 251.06 | 251.06 |
| MOW | 52HP-WT, 9' ROTARY MOWER | JUL 2002 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .17 | 7.72 | 12.67 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | JUL 2002 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 7.22 | .39 | 17.64 | 26.02 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | JUL 2002 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 12.85 | .51 | 23.40 | 31.78 |
| MOW | 52HP-WT, 9' ROTARY MOWER | AUG 2002 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .11 | 7.66 | 12.61 |
| HERBICIDE | 52HP-WT, 100 GAL SPRAYER | AUG 2002 | .40 | .48 | 4.50 | 6.32 | 4.20 | .00 | 11.91 | .34 | 22.77 | 27.27 |
| MOW | 52HP-WT, 9' ROTARY MOWER | OCT 2002 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .00 | 7.55 | 12.50 |
| HARVEST(35 BINS) | PICKERS (10 PEOPLE) | OCT 2002 | .00 | .00 | 9.29 | .00 | .00 | 787.50 | .00 | .00 | 787.50 | 796.79 |
| HARVEST | 52HP-WT, BACKFORK | OCT 2002 | 7.00 | 7.70 | 45.60 | 24.11 | 67.37 | .00 | .00 | .00 | 91.49 | 137.09 |
| CHECK BINS | CHECKER FOR PICKING CREW | OCT 2002 | .00 | 7.00 | .00 | .00 | 52.50 | .00 | .00 | .00 | 52.50 | 52.50 |
| BIN HANDLING | 52HP-WT, BIN TRAILER | OCT 2002 | 3.50 | 3.85 | 27.49 | 14.59 | 33.69 | .00 | .00 | .00 | 48.28 | 75.77 |
| LOAD FRUIT | 52HP-WT, FORKLIFT | OCT 2002 | 1.40 | 1.54 | 14.60 | 8.60 | 13.47 | .00 | .00 | .00 | 22.08 | 36.68 |
| HAUL FRUIT | CUSTOM HAULING | OCT 2002 | .00 | .00 | .00 | .00 | .00 | 105.00 | .00 | .00 | 105.00 | 105.00 |
| HERBICIDE | 52HP-WT, 100 GAL SPRAYER | OCT 2002 | .40 | .48 | 4.50 | 6.32 | 4.20 | .00 | 42.16 | .00 | 52.68 | 57.18 |
| GOPHER CONTROL | HAND LABOR | ANN 2002 | .00 | 2.00 | .00 | .00 | 15.00 | .00 | 1.28 | .73 | 17.01 | 17.01 |
| MISC USE | ½ TON PICKUP | ANN 2002 | 7.14 | 7.85 | 36.45 | 23.42 | 68.69 | .00 | .00 | 4.14 | 96.25 | 132.70 |

TABLE 5E: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY APPLE ORCHARD IN EASTERN WASHINGTON - YEAR 5 (CONTINUED).

| ----- | | | | | | | | | | | | | |
|----------------|--------------------------------|-----|------|---------------|----------------|------------------------|-----------------------------|--------|---------|--------|--------|---------------------------|---------------|
| VARIABLE COST | | | | | | | | | | | | | |
| ----- | | | | | | | | | | | | | |
| OPERATION | TOOLING | MTH | YEAR | MACH HOURS | LABOR HOURS | TOTAL FIXED COST | FUEL, LUBE, & REPAIRS | LABOR | SERVICE | MATER. | INTER. | TOTAL VARIABLE COST | TOTAL COST |
| ----- | | | | | | | | | | | | | |
| | | | | | | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| MISC USE | 4-WHEEL ALL TERRAIN VEHICLE | ANN | 2002 | 5.70 | .00 | 12.50 | 5.74 | .00 | .00 | .00 | .26 | 6.00 | 18.51 |
| MISC USE | MACHINE SHED & SHOP | ANN | 2002 | .00 | .00 | 38.71 | .71 | .00 | .00 | .00 | .03 | .75 | 39.46 |
| MISC USE | SHOP TOOLS | ANN | 2002 | .00 | .00 | 15.29 | .00 | .00 | .00 | .00 | .00 | .00 | 15.29 |
| OVERHEAD | UTILITIES, LEGAL, ACCTNG, ETC. | ANN | 2002 | .00 | .00 | .00 | .00 | .00 | 141.71 | .00 | .00 | 141.71 | 141.71 |
| MANAGEMENT | OPERATOR MANAGEMENT | ANN | 2002 | .00 | .00 | 250.00 | .00 | .00 | .00 | .00 | .00 | .00 | 250.00 |
| LAND COST | INTEREST ON LAND | ANN | 2002 | .00 | .00 | 350.00 | .00 | .00 | .00 | .00 | .00 | .00 | 350.00 |
| TAXES | LAND | ANN | 2002 | .00 | .00 | 72.05 | .00 | .00 | .00 | .00 | .00 | .00 | 72.05 |
| INTEREST COST | INTEREST ON ESTABLISHMENT COST | ANN | 2002 | .00 | .00 | 1261.80 | .00 | .00 | .00 | .00 | .00 | .00 | 1261.80 |
| TOTAL PER ACRE | | | | 47.44 | 120.43 | 2780.57 | 358.76 | 964.39 | 1272.96 | 312.28 | 67.61 | 2976.00 | 5756.57 |
| ----- | | | | | | | | | | | | | |

TABLE 6E: MATERIALS AND SERVICES USED BY OPERATION - YEAR 5.

| OPERATION | | MATERIAL AND/OR SERVICE |
|-------------------------|--------|--|
| Dormant Spray + Zinc | March | 2.7 gals. of Superior Oil @ \$2.60/gal. 7.2 lbs. of Zinc 50 @ \$1.29/lb. |
| Mildew/Boron Spray | April | 2.25 ozs. of Rally @ \$4.70/oz. 1.35 lbs. of Solubor @ 80¢/lb. |
| Mildew Spray | April | 4.5 lbs. of wetable sulfur @ 75¢/lb. |
| Cover Spray | April | 1.8 lb. of DiPel @ \$9.08/lb. |
| Thinning Spray | April | 5.0 qts. of Wilthin @ \$11.61/qt. 3.0 pts. of Regulaid @ \$2.75/pt. |
| Rent Beehives | April | 2.0 beehives @ \$35.00/hive |
| Frost Control | April | Irrigation charge & electricity @ \$18.50/acre |
| Irrigate | Season | Irrigation charge & electricity @ \$150.00/acre |
| Fertigate | Season | 100 lbs. of urea @ 18¢/lb. |
| Calcium Spray (4X) | Season | 3.6 lbs. of calcium chloride @ 43¢/lb. each spraying |
| Cover Spray | May | 1.8 lb. of DiPel @ \$9.08/lb. |
| Cover Spray | May | 0.9 lb. of Guthion @ \$8.02/lb. |
| Mildew Spray | May | 4.5 lbs. of wetable sulfur @ 75¢/lb. |
| Thinning Spray | May | 1.8 pt. of Carbaryl 4L @ \$3.24/pt. |
| Herbicide | June | 1.0 qt. of Roundup @ \$11.91/qt. |
| Thinning Spray | June | 1.8 pts. of Carbaryl 4L @ \$3.24/pt. 1.8 ozs. of NAA 200 @ 82¢/oz. 1.0 pt. of Regulaid @ \$2.75/pt. |
| Cover Spray | June | 0.9 lb. of Guthion @ \$8.02/lb. |
| Thinning Spray | June | 1.8 pts. of Ethrel @ \$5.00/pt. 7.2 ozs. of Amid-ThinW @ \$3.47/oz. 1.0 pt. of Regulaid @ \$2.75/pt. |

TABLE 6E: MATERIALS AND SERVICES USED BY OPERATION - YEAR 5.
(Continued)

| OPERATION | | MATERIAL AND/OR SERVICE |
|----------------|---------|---|
| Cover Spray | July | 0.9 lb. of Guthion @ \$8.02/lb. |
| Cover Spray | July | 3.6 ozs. of Provado @ \$3.57/oz. |
| Herbicide | August | 1.0 qt. of Roundup @ \$11.91/qt. |
| Harvest | October | 35.0 bins of apples picked @ \$22.50/bin |
| Haul Fruit | October | 35.0 bins of apples @ \$3.00/bin |
| Herbicide | October | 2.0 qts. of Surflan @ \$16.60/qt. 2.0 qts. of Princep @ \$4.48/qt. |
| Gopher Control | Annual | 1.0 lb. of Gopher Getter @ \$1.28/lb. |
| Overhead | Annual | 5% variable cost |

TABLE 7E: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY APPLE ORCHARD IN EASTERN WASHINGTON - YEAR 5.

| | | PRICE OR | | VALUE OR | YOUR |
|-----------------------|------|----------------|----------|----------|-------|
| | | UNIT COST/UNIT | QUANTITY | COST | FARM |
| VARIABLE COSTS | | \$ | | \$ | |
| UREA | LB. | .18 | 100.00 | 18.00 | _____ |
| CALCIUM CHLORIDE | LB. | .43 | 14.40 | 6.19 | _____ |
| SUPERIOR OIL | GAL. | 2.60 | 2.70 | 7.02 | _____ |
| ZINC 50 | LB. | 1.29 | 7.20 | 9.29 | _____ |
| WILTHIN | QT. | 11.61 | 5.40 | 58.05 | _____ |
| RALLY | OZ. | 4.70 | 2.25 | 10.58 | _____ |
| SOLUBOR | LB. | .80 | 1.35 | 1.08 | _____ |
| WETABLE SULFUR | LB. | .75 | 9.00 | 6.76 | _____ |
| DIPEL | LB. | 9.08 | 3.60 | 32.68 | _____ |
| GUTHION | LB. | 8.02 | 2.70 | 21.65 | _____ |
| CARBARYL 4L | PT. | 3.24 | 3.60 | 11.66 | _____ |
| REGULOID | PT. | 2.75 | 5.00 | 13.75 | _____ |
| ROUNDUP | QT. | 11.91 | 2.00 | 23.82 | _____ |
| NAA 200 | OZ. | .82 | 1.80 | 1.48 | _____ |
| ETHREL | PT. | 5.00 | 1.80 | 9.00 | _____ |
| AMID-THINW | OZ. | 3.47 | 7.20 | 24.98 | _____ |
| PROVADO | OZ. | 3.57 | 3.60 | 12.85 | _____ |
| SURFLAN | QT. | 16.60 | 2.00 | 33.20 | _____ |
| PRINCEP | QT. | 4.48 | 2.00 | 8.96 | _____ |
| GOPHER GETTER | LB. | 1.28 | 1.00 | 1.28 | _____ |
| RENT BEEHIVES | HIVE | 35.00 | 2.00 | 70.00 | _____ |
| CASUAL LABOR | HOUR | 7.50 | 71.50 | 536.25 | _____ |
| LABOR (TRAC/MACH) | HOUR | 8.75 | 48.93 | 428.14 | _____ |
| PICKING LABOR | BIN | 22.50 | 35.00 | 787.50 | _____ |
| CUSTOM HAULING | BIN | 3.00 | 35.00 | 105.00 | _____ |
| IRR CHARGE & ELECT | ACRE | 168.75 | 1.00 | 168.75 | _____ |
| TRACTOR REPAIR | ACRE | 36.90 | 1.00 | 36.90 | _____ |
| TRACTOR FUEL/LUBE | ACRE | 44.56 | 1.00 | 44.56 | _____ |
| MACHINERY REPAIRS | ACRE | 186.52 | 1.00 | 186.52 | _____ |
| MACHINE FUEL/LUBE | ACRE | 90.78 | 1.00 | 90.78 | _____ |
| OVERHEAD | ACRE | 141.71 | 1.00 | 141.71 | _____ |
| INTEREST ON OP. CAP. | ACRE | 67.61 | 1.00 | 67.61 | _____ |
| TOTAL VARIABLE COST | | | | 2976.00 | _____ |
| FIXED COSTS | | \$ | | \$ | |
| TRACTOR DEPRECIATION | ACRE | 65.60 | 1.00 | 65.60 | _____ |
| TRACTOR INTEREST | ACRE | 71.96 | 1.00 | 71.96 | _____ |
| TRACTOR INSURANCE | ACRE | 4.80 | 1.00 | 4.80 | _____ |
| TRACTOR TAXES | ACRE | 14.39 | 1.00 | 14.39 | _____ |
| MACHINE DEPRECIATION* | ACRE | 301.43 | 1.00 | 301.43 | _____ |
| MACHINE INTEREST* | ACRE | 315.10 | 1.00 | 315.10 | _____ |
| MACHINE INSURANCE* | ACRE | 20.95 | 1.00 | 20.95 | _____ |
| MACHINE TAXES* | ACRE | 52.49 | 1.00 | 52.49 | _____ |
| LAND TAXES | ACRE | 72.05 | 1.00 | 72.05 | _____ |
| LAND COST | ACRE | 350.00 | 1.00 | 350.00 | _____ |
| MANAGEMENT | ACRE | 250.00 | 1.00 | 250.00 | _____ |
| INTEREST ON ESTAB. | ACRE | 1261.80 | 1.00 | 1261.80 | _____ |
| TOTAL FIXED COST | | | | 2780.57 | _____ |
| TOTAL COST | | | | 5756.57 | _____ |

*INCLUDES MACHINE SHED & SHOP, WIND MACHINE AND IRRIGATION SYSTEM.

TABLE 5F: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR A MATURE HIGH DENSITY APPLE ORCHARD IN EASTERN WASHINGTON.

| OPERATION | TOOLING | MTH | YEAR | MACH HOURS | LABOR HOURS | TOTAL FIXED COST | VARIABLE COST | | | | | TOTAL VARIABLE COST | TOTAL COST |
|------------------|--------------------------------|-----|------|---------------|----------------|------------------------|-----------------------------|--------|---------|--------|--------|---------------------------|---------------|
| | | | | | | | FUEL, LUBE, & REPAIRS | LABOR | SERVICE | MATER. | INTER. | | |
| | | | | | | \$ | \$ | \$ | \$ | \$ | \$ | \$ | |
| PRUNE | HAND LABOR (2 PEOPLE) | FEB | 2003 | .00 | 37.50 | 3.45 | .00 | 281.25 | .00 | .00 | 16.88 | 298.12 | 301.58 |
| DORM. SPY + ZINC | 52HP-WT, BLAST SPRAYER | MAR | 2003 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 18.12 | 1.48 | 29.63 | 38.01 |
| MILDEW/BORON SPY | 52HP-WT, BLAST SPRAYER | APR | 2003 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 12.95 | 1.03 | 24.01 | 32.39 |
| MILDEW SPRAY | 52HP-WT, BLAST SPRAYER | APR | 2003 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 3.75 | .62 | 14.40 | 22.78 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | APR | 2003 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 18.16 | 1.27 | 29.46 | 37.84 |
| THINNING SPRAY | 52HP-WT, BLAST SPRAYER | APR | 2003 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 80.66 | 4.08 | 94.77 | 103.15 |
| RENT BEEHIVE | TWO BEEHIVES PER ACRE | APR | 2003 | .00 | .00 | .00 | .00 | .00 | 70.00 | .00 | 3.15 | 73.15 | 73.15 |
| FROST CONTROL | WIND MACHINE | APR | 2003 | .00 | 2.00 | 152.11 | 92.79 | 17.50 | .00 | .00 | 4.96 | 115.25 | 267.36 |
| FROST CONTROL | FROST ALARM & THERMOMETERS | APR | 2003 | .00 | .00 | 2.97 | .00 | .00 | .00 | .00 | .00 | .00 | 2.97 |
| FROST CONTROL | UNDERTREE SPRINKLERS | APR | 2003 | .00 | .00 | 74.90 | 10.00 | .00 | 18.75 | .00 | 1.29 | 30.04 | 104.94 |
| IRRIGATE | SOLID SET UNDERTREE IRR SYSTEM | SEA | 2003 | .00 | .00 | 203.03 | 50.00 | .00 | 150.00 | .00 | 9.00 | 209.00 | 412.03 |
| IRRIGATE | 4-WHEEL ATV W/ABOVE OPERATION | SEA | 2003 | 10.00 | 10.00 | 21.94 | 10.08 | 87.50 | .00 | .00 | 4.39 | 101.97 | 123.90 |
| FERTIGATE | THROUGH THE IRRIGATION SYSTEM | SEA | 2003 | .00 | 1.00 | .00 | .00 | 8.75 | .00 | 18.00 | 1.20 | 27.95 | 27.95 |
| CALCIUM SPY (4X) | 52HP-WT, BLAST SPRAYER | SEA | 2003 | 2.00 | 2.40 | 33.52 | 19.12 | 21.00 | .00 | 6.88 | 2.12 | 49.12 | 82.64 |
| MOW | 52HP-WT, 9' ROTARY MOWER | MAY | 2003 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .28 | 7.83 | 12.78 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | MAY | 2003 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 18.16 | 1.06 | 29.25 | 37.63 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | MAY | 2003 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 8.02 | .68 | 18.73 | 27.11 |
| MILDEW SPRAY | 52HP-WT, BLAST SPRAYER | MAY | 2003 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 3.75 | .52 | 14.30 | 22.68 |
| THINNING SPRAY | 52HP-WT, BLAST SPRAYER | MAY | 2003 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 6.48 | .62 | 17.13 | 25.51 |
| MOW | 52HP-WT, 9' ROTARY MOWER | JUN | 2003 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .23 | 7.78 | 12.72 |
| THINNING SPRAY | 52HP-WT, BLAST SPRAYER | JUN | 2003 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 40.51 | 1.52 | 52.06 | 60.44 |
| HERBICIDE | 52HP-WT, 100 GAL SPRAYER | JUN | 2003 | .40 | .48 | 4.50 | 6.32 | 4.20 | .00 | 11.91 | .67 | 23.11 | 27.61 |
| THINNING SPRAY | 52HP-WT, BLAST SPRAYER | JUN | 2003 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 10.87 | .63 | 21.53 | 29.91 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | JUN | 2003 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 8.02 | .54 | 18.59 | 26.97 |
| HAND THINNING | HAND LABOR | JUN | 2003 | .00 | 42.00 | .00 | .00 | 315.00 | .00 | .00 | 9.45 | 324.45 | 324.45 |
| MOW | 52HP-WT, 9' ROTARY MOWER | JUL | 2003 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .17 | 7.72 | 12.67 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | JUL | 2003 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 8.02 | .41 | 18.46 | 26.84 |
| COVER SPRAY | 52HP-WT, BLAST SPRAYER | JUL | 2003 | .50 | .60 | 8.38 | 4.78 | 5.25 | .00 | 14.28 | .55 | 24.86 | 33.24 |
| MOW | 52HP-WT, 9' ROTARY MOWER | AUG | 2003 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .11 | 7.66 | 12.61 |
| HERBICIDE | 52HP-WT, 100 GAL SPRAYER | AUG | 2003 | .40 | .48 | 4.50 | 6.32 | 4.20 | .00 | 11.91 | .34 | 22.77 | 27.27 |
| MOW | 52HP-WT, 9' ROTARY MOWER | OCT | 2003 | .50 | .55 | 4.95 | 2.74 | 4.81 | .00 | .00 | .00 | 7.55 | 12.50 |
| HARVEST(45 BINS) | PICKERS (10 PEOPLE) | OCT | 2003 | .00 | .00 | 11.94 | .00 | .00 | 1012.50 | .00 | .00 | 1012.50 | 1024.44 |
| HARVEST | 52HP-WT, BACKFORK | OCT | 2003 | 9.00 | 9.90 | 58.63 | 31.00 | 86.62 | .00 | .00 | .00 | 117.63 | 176.26 |
| CHECK BINS | CHECKER FOR PICKING CREW | OCT | 2003 | .00 | 9.00 | .00 | .00 | 67.50 | .00 | .00 | .00 | 67.50 | 67.50 |
| BIN HANDLING | 52HP-WT, BIN TRAILER | OCT | 2003 | 4.50 | 4.95 | 35.35 | 18.76 | 43.31 | .00 | .00 | .00 | 62.07 | 97.42 |
| LOAD FRUIT | 52HP-WT, FORKLIFT | OCT | 2003 | 1.40 | 1.54 | 14.60 | 8.60 | 13.47 | .00 | .00 | .00 | 22.08 | 36.68 |
| HAUL FRUIT | CUSTOM HAULING | OCT | 2003 | .00 | .00 | .00 | .00 | .00 | 135.00 | .00 | .00 | 135.00 | 135.00 |
| HERBICIDE | 52HP-WT, 100 GAL SPRAYER | OCT | 2003 | .40 | .48 | 4.50 | 6.32 | 4.20 | .00 | 42.16 | .00 | 52.68 | 57.18 |
| GOPHER CONTROL | HAND LABOR | ANN | 2003 | .00 | 2.00 | .00 | .00 | 15.00 | .00 | 1.28 | .73 | 17.01 | 17.01 |
| MISC USE | ½ TON PICKUP | ANN | 2003 | 7.14 | 7.85 | 36.45 | 23.42 | 68.69 | .00 | .00 | 4.14 | 96.25 | 132.70 |
| MISC USE | 4-WHEEL ALL TERRAIN VEHICLE | ANN | 2003 | 5.70 | .00 | 12.50 | 5.74 | .00 | .00 | .00 | .26 | 6.00 | 18.51 |

TABLE 5F: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR A MATURE HIGH DENSITY APPLE ORCHARD IN EASTERN WASHINGTON (CONTINUED).

| OPERATION | TOOLING | MTH | YEAR | MACH HOURS | LABOR HOURS | TOTAL FIXED COST | VARIABLE COST | | | | | TOTAL VARIABLE COST | TOTAL COST |
|------------------|--------------------------------|-----|------|---------------|----------------|------------------------|-----------------------------|---------|---------|--------|--------|---------------------------|---------------|
| | | | | | | | FUEL, LUBE, & REPAIRS | LABOR | SERVICE | MATER. | INTER. | | |
| | | | | | | \$ | \$ | \$ | \$ | \$ | \$ | \$ | |
| MISC USE | MACHINE SHED & SHOP | ANN | 2003 | .00 | .00 | 38.71 | .71 | .00 | .00 | .00 | .03 | .75 | 39.46 |
| MISC USE | SHOP TOOLS | ANN | 2003 | .00 | .00 | 15.29 | .00 | .00 | .00 | .00 | .00 | .00 | 15.29 |
| OVERHEAD | UTILITIES, LEGAL, ACCTNG, ETC. | ANN | 2003 | .00 | .00 | .00 | .00 | .00 | 165.51 | .00 | .00 | 165.51 | 165.51 |
| MANAGEMENT | OPERATOR MANAGEMENT | ANN | 2003 | .00 | .00 | 250.00 | .00 | .00 | .00 | .00 | .00 | .00 | 250.00 |
| LAND COST | INTEREST ON LAND | ANN | 2003 | .00 | .00 | 350.00 | .00 | .00 | .00 | .00 | .00 | .00 | 350.00 |
| TAXES | LAND | ANN | 2003 | .00 | .00 | 98.25 | .00 | .00 | .00 | .00 | .00 | .00 | 98.25 |
| ESTABLISHMT COST | AMORTIZED @ 9% OVER 15 YRS. | ANN | 2003 | .00 | .00 | 1585.04 | .00 | .00 | .00 | .00 | .00 | .00 | 1585.04 |
| TOTAL PER ACRE | | | | 50.44 | 142.73 | 3154.24 | 369.82 | 1135.76 | 1551.76 | 343.89 | 74.40 | 3475.63 | 6629.87 |

TABLE 6F: MATERIALS AND SERVICES USED BY OPERATION - MATURE ORCHARD.

| OPERATION | | MATERIAL AND/OR SERVICE |
|-------------------------|--------|--|
| Dormant Spray + Zinc | March | 3.0 gals. of Superior Oil @ \$2.60/gal. 8.0 lbs. of Zinc 50 @ \$1.29/lb. |
| Mildew/Boron Spray | April | 2.5 ozs. of Rally @ \$4.70/oz. 1.5 lbs. of Solubor @ 80¢/lb. |
| Mildew Spray | April | 5.0 lbs. of wetable sulfur @ 75¢/lb. |
| Cover Spray | April | 2.0 lb. of DiPel @ \$9.08/lb. |
| Thinning Spray | April | 6.0 qts. of Wilthin @ \$11.61/qt. 4.0 pts. of Regulaid @ \$2.75/pt. |
| Rent Beehives | April | 2.0 beehives @ \$35.00/hive |
| Frost Control | April | Irrigation charge & electricity @ \$18.50/acre |
| Irrigate | Season | Irrigation charge & electricity @ \$150.00/acre |
| Fertigate | Season | 100 lbs. of urea @ 18¢/lb. |
| Calcium Spray (4X) | Season | 4.0 lbs. of calcium chloride @ 43¢/lb. each spraying |
| Cover Spray | May | 2.0 lb. of DiPel @ \$9.08/lb. |
| Cover Spray | May | 1.0 lb. of Guthion @ \$8.02/lb. |
| Mildew Spray | May | 5.0 lbs. of wetable sulfur @ 75¢/lb. |
| Thinning Spray | May | 2.0 pts. of Carbaryl 4L @ \$3.24/pt. |
| Herbicide | June | 1.0 qt. of Roundup @ \$11.91/qt. |
| Thinning Spray | June | 2.0 pts. of Carbaryl 4L @ \$3.24/pt. 2.0 ozs. of NAA 200 @ 82¢/oz. 1.0 pt. of Regulaid @ \$2.75/pt. |
| Cover Spray | June | 1.0 lb. of Guthion @ \$8.02/lb. |
| Thinning Spray | June | 2.0 pts. of Ethrel @ \$5.00/pt. 8.0 ozs. of Amid-ThinW @ \$3.47/oz. 1.0 pt. of Regulaid @ \$2.75/pt. |

TABLE 6F: MATERIALS AND SERVICES USED BY OPERATION - MATURE ORCHARD (Continued).

| OPERATION | | MATERIAL AND/OR SERVICE |
|----------------|---------|---|
| Cover Spray | July | 1.0 lb. of Guthion @ \$8.02/lb. |
| Cover Spray | July | 4.0 ozs. of Provado @ \$3.57/oz. |
| Herbicide | August | 1.0 qt. of Roundup @ \$11.91/qt. |
| Harvest | October | 45.0 bins of apples picked @ \$22.50/bin |
| Haul Fruit | October | 45.0 bins of apples @ \$3.00/bin |
| Herbicide | October | 2.0 qts. of Surflan @ \$16.60/qt. 2.0 qts. of Princep @ \$4.48/qt. |
| Gopher Control | Annual | 1.0 lb. of Gopher Getter @ \$1.28/lb. |
| Overhead | Annual | 5% variable cost |

TABLE 7F: ITEMIZED COST PER ACRE FOR A MATURE HIGH DENSITY APPLE ORCHARD IN EASTERN WASHINGTON.

| | | PRICE OR | | VALUE OR | YOUR |
|-----------------------|-------|----------------|----------|----------|-------|
| | | UNIT COST/UNIT | QUANTITY | COST | FARM |
| VARIABLE COSTS | | \$ | | \$ | |
| UREA | LB. | .18 | 100.00 | 18.00 | _____ |
| CALCIUM CHLORIDE | LB. | .43 | 16.00 | 6.88 | _____ |
| SUPERIOR OIL | GAL. | 2.60 | 3.00 | 7.80 | _____ |
| ZINC 50 | LB. | 1.29 | 8.00 | 10.32 | _____ |
| WILTHIN | QT. | 11.61 | 6.00 | 69.66 | _____ |
| RALLY | OZ. | 4.70 | 2.50 | 11.75 | _____ |
| SOLUBOR | LB. | .80 | 1.50 | 1.20 | _____ |
| WETABLE SULFUR | LB. | .75 | 10.00 | 7.50 | _____ |
| DIPEL | LB. | 9.08 | 4.00 | 36.32 | _____ |
| GUTHION | LB. | 8.02 | 3.00 | 24.06 | _____ |
| CARBARYL 4L | PT. | 3.24 | 4.00 | 12.96 | _____ |
| REGULAID | PT. | 2.75 | 6.00 | 16.50 | _____ |
| ROUNDUP | QT. | 11.91 | 2.00 | 23.82 | _____ |
| NAA 200 | OZ. | .82 | 2.00 | 1.64 | _____ |
| ETHREL | PT. | 5.00 | 2.00 | 10.00 | _____ |
| AMID-THINW | OZ. | 3.47 | 8.00 | 27.76 | _____ |
| PROVADO | OZ. | 3.57 | 4.00 | 14.28 | _____ |
| SURFLAN | QT. | 16.60 | 2.00 | 33.20 | _____ |
| PRINCEP | QT. | 4.48 | 2.00 | 8.96 | _____ |
| GOPHER GETTER | LB. | 1.28 | 1.00 | 1.28 | _____ |
| RENT BEEHIVES | HIVE | 35.00 | 2.00 | 70.00 | _____ |
| CASUAL LABOR | HOURL | 7.50 | 90.50 | 678.75 | _____ |
| LABOR (TRAC/MACH) | ACRE | 8.75 | 52.23 | 457.01 | _____ |
| PICKING LABOR | BIN | 22.50 | 45.00 | 1012.50 | _____ |
| CUSTOM HAULING | BIN | 3.00 | 45.00 | 135.00 | _____ |
| IRR CHARGE & ELECT | ACRE | 168.75 | 1.00 | 168.75 | _____ |
| TRACTOR REPAIR | ACRE | 41.40 | 1.00 | 41.40 | _____ |
| TRACTOR FUEL/LUBE | ACRE | 49.99 | 1.00 | 49.99 | _____ |
| MACHINERY REPAIRS | ACRE | 187.65 | 1.00 | 187.65 | _____ |
| MACHINE FUEL/LUBE | ACRE | 90.78 | 1.00 | 90.78 | _____ |
| OVERHEAD | ACRE | 165.51 | 1.00 | 165.51 | _____ |
| INTEREST ON OP. CAP. | ACRE | 74.40 | 1.00 | 74.40 | _____ |
| TOTAL VARIABLE COST | | | | 3475.63 | _____ |
| FIXED COSTS | | \$ | | \$ | |
| TRACTOR DEPRECIATION | ACRE | 73.60 | 1.00 | 73.60 | _____ |
| TRACTOR INTEREST | ACRE | 80.73 | 1.00 | 80.73 | _____ |
| TRACTOR INSURANCE | ACRE | 5.38 | 1.00 | 5.38 | _____ |
| TRACTOR TAXES | ACRE | 16.15 | 1.00 | 16.15 | _____ |
| MACHINE DEPRECIATION* | ACRE | 305.20 | 1.00 | 305.20 | _____ |
| MACHINE INTEREST* | ACRE | 316.17 | 1.00 | 316.17 | _____ |
| MACHINE INSURANCE* | ACRE | 21.02 | 1.00 | 21.02 | _____ |
| MACHINE TAXES* | ACRE | 52.70 | 1.00 | 52.70 | _____ |
| LAND TAXES | ACRE | 98.25 | 1.00 | 98.25 | _____ |
| AMMORT. ESTAB. COST | ACRE | 1585.04 | 1.00 | 1585.04 | _____ |
| LAND COST | ACRE | 350.00 | 1.00 | 350.00 | _____ |
| MANAGEMENT | ACRE | 250.00 | 1.00 | 250.00 | _____ |
| TOTAL FIXED COST | | | | 3154.24 | _____ |
| TOTAL COST | | | | 6629.87 | _____ |

*INCLUDES MACHINE SHED & SHOP, WIND MACHINE AND IRRIGATION SYSTEM.

Table 8: Equipment and Building Data

| Machine Name | Purchase Price (\$) | Years of Use | Salvage Value (\$) | Annual Repair Cost (\$) | Annual Hours of Use | Gallons of Fuel Use Per Hour |
|----------------------|---------------------|--------------|--------------------|-------------------------|------------------------|------------------------------|
| 55HP-Wheel Tractor | 21,000 | 15 | 5,000 | 600 | 400 | 1.5 Diesel |
| 4WD-ATV | 6,000 | 10 | 1,500 | 150 | 400 | .5 Gas |
| Pickup | 25,000 | 15 | 3,000 | 450 | 600 | 2.0 Gas |
| 6' Rototiller | 3,500 | 10 | 350 | 580 | 150 | |
| 100 Gallon Sprayer | 2,000 | 10 | 500 | 750 | 60 | |
| Backfork | 200 | 20 | 0 | 20 | 150 | |
| PTO Blast Sprayer | 14,000 | 10 | 2,800 | 1,250 | 200 | |
| Front-end Loader | 5,000 | 15 | 1,000 | 425 | 150 | |
| Bin Trailer | 3,500 | 10 | 700 | 300 | 350 | |
| 9' Rotary Mower | 3,500 | 10 | 500 | 325 | 150 | |
| Pruning Tools | 30 | 4 | 0 | 0 | 100 | |
| Picking Equipment | 17 | 3 | 0 | 0 | 50 | |
| Machine Shed & Shop | 30,000 | 30 | 0 | 50 | 70 acres | |
| Shop Tools | 10,000 | 20 | 0 | 0 | 70 acres | |
| Wind Machine | 16,000 | 30 | 3,200 | 300 | 40 hours over 10 acres | 13.0 Propane |
| Alarm & Thermometers | 205 | 10 | 0 | 0 | 10 acres | |
| Pump & Mainline | 1,000 | 30 | 0 | 20 | 1 acre | |
| Irrigation System | 1,150 | 20 | 0 | 30 | 1 acre | |
| Holding Pond | 7,000 | 20 | 0 | 100 | 10 acres | |

TABLE 9: PER HOUR AND PER ACRE EQUIPMENT AND BUILDING COSTS

| MACHINERY | PURCHASE PRICE | YEARS TO TRADE | ANNUAL HOURS | DEPREC- IATION | INTER- EST | INSUR- ANCE | TAXES | HOUSING | COST PER HOUR | | FUEL AND LUBE | TOTAL VARIABLE COST | TOTAL COST |
|---------------------|----------------|----------------|---------------|----------------|------------|-------------|-------|---------|---------------|--------|---------------|---------------------|------------|
| | | | | | | | | | FIXED COST | REPAIR | | | |
| | \$ | | | | | | | | | | | | |
| 52HP-WHEEL TRACTOR | 21,000.00 | 15 | 400 | 2.67 | 2.93 | .20 | .59 | .00 | 6.37 | 1.50 | 1.81 | 3.31 | 9.68 |
| 4-WHEEL ATV | 6,000.00 | 10 | 400 | 1.13 | .84 | .06 | .17 | .00 | 2.19 | .38 | .63 | 1.01 | 3.20 |
| PICKUP | 25,000.00 | 15 | 600 | 2.44 | 2.10 | .14 | .42 | .00 | 5.10 | .75 | 2.53 | 3.28 | 8.38 |
| 6' ROTOTILLER | 3,500.00 | 10 | 150 | 2.10 | 1.16 | .08 | .23 | .00 | 3.56 | 3.87 | .00 | 3.87 | 7.43 |
| 100 GAL SPRAYER | 2,000.00 | 10 | 60 | 2.50 | 1.88 | .13 | .38 | .00 | 4.88 | 12.50 | .00 | 12.50 | 17.37 |
| BACKFORK | 200.00 | 20 | 150 | .07 | .06 | .00 | .01 | .00 | .14 | .13 | .00 | .13 | .28 |
| PTO BLT SPRAYER | 14,000.00 | 10 | 200 | 5.60 | 3.78 | .25 | .76 | .00 | 10.39 | 6.25 | .00 | 6.25 | 16.64 |
| FRONT-END LOADER | 5,000.00 | 15 | 150 | 1.78 | 1.80 | .12 | .36 | .00 | 4.06 | 2.83 | .00 | 2.83 | 6.89 |
| BIN TRAILER | 3,500.00 | 10 | 350 | .80 | .54 | .04 | .11 | .00 | 1.48 | .86 | .00 | .86 | 2.34 |
| 9' ROTARY MOWER | 3,500.00 | 10 | 150 | 2.00 | 1.20 | .08 | .24 | .00 | 3.52 | 2.17 | .00 | 2.17 | 5.69 |
| PRUNING TOOLS | 30.00 | 4 | 100 | .08 | .01 | .00 | .00 | .00 | .09 | .00 | .00 | .00 | .09 |
| PICKING EQUIPMENT | 17.00 | 3 | 50 | .11 | .02 | .00 | .00 | .00 | .13 | .00 | .00 | .00 | .13 |
| | | | ACRES COVERED | | | | | | | | | | |
| MACH SHED & SHOP | 30,000.00 | 30 | 70 | 14.29 | 19.29 | 1.29 | 3.86 | .00 | 38.71 | .71 | .00 | .71 | 39.43 |
| SHOP TOOLS | 10,000.00 | 20 | 70 | 7.14 | 6.43 | .43 | 1.29 | .00 | 15.29 | .00 | .00 | .00 | 15.29 |
| WIND MACHINE | 16,000.00 | 30 | 10 | 42.67 | 86.40 | 5.76 | 17.28 | .00 | 152.11 | 30.00 | 62.79 | 92.79 | 244.90 |
| ALARM & THERMOMETER | 205.00 | 10 | 10 | 2.05 | .92 | .00 | .00 | .00 | 2.97 | .00 | .00 | .00 | 2.97 |
| PUMP & MAINLINES | 1,000.00 | 30 | 1 | 33.33 | 45.00 | 3.00 | 9.00 | .00 | 90.33 | 20.00 | .00 | 20.00 | 110.33 |
| IRRIGATION SYSTEM | 1,150.00 | 20 | 1 | 57.50 | 51.75 | 3.45 | 10.35 | .00 | 123.05 | 30.00 | .00 | 30.00 | 153.05 |
| HOLDING POND | 7,000.00 | 20 | 10 | 35.00 | 31.50 | 2.10 | 6.30 | .00 | 74.90 | 10.00 | .00 | 10.00 | 84.90 |

Table 10: Prices

| Item Name | Unit | Price |
|--|-------------|--------------|
| | | \$ |
| Soil sample | Acre | 12.00 |
| Custom clearing of land | Acre | 175.00 |
| Custom ripping of soil | Acre | 180.00 |
| Custom cleanup and disk | Acre | 150.00 |
| Custom fumigate | Acre | 565.00 |
| Custom planting of trees | Tree | 0.60 |
| Custom hauling of fruit | Bin | 3.00 |
| Rental of fertilizer spreader | Acre | 3.00 |
| Rental of trencher | Hour | 12.50 |
| Rental of grass seeder | Acre | 10.00 |
| Rental of beehives | Hive | 35.00 |
| Irrigation/electrical charge | Acre | 150.00 |
| Irrigation/electrical charge (frost control) | Acre | 18.50 |
| Machinery and supervisory labor | Hour | 8.75 |
| Casual labor | Hour | 7.50 |
| Picking labor | Bin | 22.50 |
| Companion grass seed | Pound | 1.25 |
| Gopher Getter bait | Pound | 1.28 |
| Layout and stake material | Acre | 5.00 |
| Paint | Gallon | 8.00 |
| Pre-plant fertilizer | Acre | 50.00 |
| Trees | Tree | 4.50 |
| Amid-ThinW | Ounce | 3.47 |
| Calcium chloride | Pound | 0.43 |
| Carbaryl 4L | Pint | 3.24 |
| DiPel | Pound | 9.08 |
| Ethrel | Pint | 5.00 |
| Gramoxone | Quart | 12.50 |
| Guthion | Pound | 8.02 |
| Lorsban | Pint | 6.03 |
| NAA 200 | Ounce | 0.82 |
| Princep | Quart | 4.48 |
| Provado | Ounce | 3.57 |
| Rally | Ounce | 4.70 |
| Regulaid | Pint | 2.75 |
| Roundup | Quart | 11.91 |
| Rubigan | Ounce | 2.25 |
| Sevin XLR7 | Gallon | 32.40 |
| Solubar | Pound | 0.80 |
| Sulfur (wettable) | Pound | 0.75 |
| Supracide | Pound | 6.68 |
| Superior oil | Gallon | 2.60 |
| Surflan | Quart | 16.60 |
| Urea | Pound | 0.18 |
| Wilthin | Quart | 11.61 |
| Zinc 50 | Pound | 1.29 |

Table 10: Prices (Continued)

| Item Name | Unit | Price |
|-----------------------------|-------------|--------------|
| | | \$ |
| Land taxes - year 1 | Acre | 47.16 |
| Land taxes - year 2 | Acre | 49.78 |
| Land taxes - year 3 | Acre | 53.71 |
| Land taxes - year 4 | Acre | 64.19 |
| Land taxes - year 5 | Acre | 72.05 |
| Land taxes - mature orchard | Acre | 98.25 |
| Gasoline fuel | Gallon | 1.10 |
| Diesel fuel | Gallon | 1.05 |
| Propane fuel | Gallon | 1.05 |

Use pesticides with care. Apply them only to plants, animals, or sites listed on the label. When mixing and applying pesticides, follow all label precautions to protect yourself and others around you. It is violation of law to disregard label directions. If pesticides are spilled on skin or clothing, remove clothing and wash skin thoroughly. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

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