A Cost of Production
Analysis of Conventional
vs. Integrated vs.
Organic apple
Production Systems

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## A Cost of Production Analysis of Conventional vs. Integrated vs. Organic Apple Production Systems

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## Introduction

Modern, intensive apple production practices have maintained Washington State, with nearly 172,000 acres of bearing trees yielding close to 2.5 million tons of utilized apples in 1999, as the leading apple producer in the United States (Washington State Department of Agriculture, 2000). Recent studies have, however, called into question the long-term viability of using some chemicals associated with modern conventional production practices due to their negative impacts on farm worker and community health (Hardell and Eriksson, 1999; Lu et al., 2000; Bell et al., 2001) and on the environment (Bishop et al., 1999; Nicolaus and Hansoo, 1999; Epstein et al., 2000). Furthermore, widespread financial failures of family-owned orchards in the Pacific Northwest due to overproduction, rising production costs, and the consolidation of fruit retailers have called into question conventional approaches to tree fruit production and marketing (Mullinix, 2000).

Faced with these health, environmental, and economic problems, fruit growers are increasingly interested in organic and integrated farming systems because they have the potential to reduce some of the negative environmental effects of conventional agriculture (Reganold et al., 2001) and may offer market advantages over conventional production practices (Granatstein and Dauer, 2000; Loureiro et al., 2000). Organic management practices exclude most synthetic chemical pesticide and fertilizer inputs and use naturally derived products as defined by organic certification programs (Washington State Department of Agriculture, 2001). Integrated farming systems utilize methods of conventional and organic production systems in an attempt to optimize both environmental quality and economic profit. Certified integrated farming practices have been successfully adopted in some of the major apple-growing regions in Europe where fruit from certified integrated farms enjoys access to popular markets denied to conventionally produced fruit (Sansavini, 1997).

### **Study Objective and Limitations**

Financial data were collected during a six-year study of 'Golden Delicious' apple research plots managed under conventional, integrated, and organic production methods in the Yakima Valley of Washington State from 1994 through 1999. The

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objective of this study was to determine, based on data obtained from the research plots, estimated production costs and returns for ten-acre orchard operations managed under each of the three management strategies from initial planting of trees through the sixth year for the years 1994 through 1999.

There are several critical issues that must be considered in using the data presented here. Due to the dynamic nature of the current fruit market, prices used in this study ought not be assumed to reflect current or future market conditions. Organically certified apple acreage is expected to more than double over the next several years (Granatstein and Dauer, 2000) making predictions of future prices speculative at best. As an example, a two-fold increase in reported organic Golden Delicious sales from the 1999 crop to the 2000 crop coincided with a nearly 50% fall in organic Golden Delicious prices over the same period.

For this study, prices used for fruit had a significant impact on overall production costs through their effect on interest costs. With the nearly 50% price premium above conventional fruit of similar size and grade received for organic fruit (see Budget Assumption 9 on page 4), the organic system more quickly paid off establishment costs thereby significantly reducing carryover interest costs in the latter years of the study. These costs may be considered as either interest costs in the event that a grower is borrowing money to cover the startup expenses or as opportunity costs in lieu of potential returns from alternative investments. Anecdotal reports of 20–30% higher costs of organic production typically do not take into consideration these interest costs.

In a separate analysis of this study's economic data (Reganold et al., 2001) it was estimated that 12–14% price premiums for organic fruit are required for the organic system to match the breakeven point of the conventional system. These values reflect the greater costs associated with organic production as compared with conventional production in our study. Important to note is that when no price premium was assumed for organic apples, interest costs accounted for a significant portion of production costs and resulted in lower profitability than either the conventional or integrated systems. Interest costs, and therefore production costs, are greatly influenced by fruit prices, indicating that the prices used in this study ought not necessarily be used for future production cost and return estimates.

Other critical considerations that make forecasts of financial situations difficult are the changing nature of production practices, the experience level of the grower, and how familiar the grower is with the specific production site. As was the case with this study, the lack of familiarity with managing organic and reduced-chemical systems at a particular site may result in unnecessarily high production costs while effective management strategies are being developed for that particular situation. For example, the effectiveness of a specific organic weed management strategy may be very site dependent, unlike an herbicide that works effectively at a wide range of sites.

Also, as was seen in this study, the lack of organically certified chemical thinners has proven a problem for organic growers who widely report significantly

higher thinning costs to achieve similar fruit size and yields as conventional growers employing chemical thinners. In this study it should be noted that our organic thinning costs were actually lower than in the conventional and integrated systems, but consequently, organic fruit were smaller in 1998 and 1999, and yields were significantly lower in 1999. Considering the impacts to fruit size alone, we estimate that had organic fruit size matched that of the conventional system in 1998 and 1999, receipts for the organic system would have been 20% greater. Assuming better thinning practices in the organic system could have resulted in similarly sized fruit as in the conventional system, more than \$1,200 per acre in 1998, and nearly \$2,000 per acre in 1999 were foregone in revenue due to inadequate thinning in the organic system.

Up to the present, relatively little research has been directed toward overcoming these problems. As research interest expands to fill information gaps, however, technical obstacles to organic or reduced-chemical production may be overcome and reduce their associated production costs. In contrast to possible reductions in organic and integrated production costs, production costs associated with intensive pesticide use may significantly rise over the next ten years due to government regulations associated with chemical applications (Benbrook et al., 1996). Reentry times following azinphos-methyl application, for example, have increased from 24 to 72 hours over the past few years. This results in greater difficulty in scheduling subsequent operations and may increase production costs. We do not expect, therefore, this study to fully reflect the range of management systems currently in use in Washington State, or the actual costs and returns for these systems in the future. The usefulness of this study, rather, is that it highlights the many uncertainties involved in alternative production systems, indicates the potential viability of these systems over the long term, and provides a side-by-side comparison of a range of production systems managed by the same grower.

## **Research Site Description**

Four one-third acre replicate plots for each management system were planted to Golden Delicious apples in May 1994, in a randomized complete block design on a commercial apple orchard in the Yakima Valley of Washington State. Each plot contained four rows of approximately eighty trees per row trained on a two-wire trellis system. Trees were planted at a spacing of four feet within rows and twelve feet between rows for a density of 908 trees per acre. The eight inches of average annual precipitation at the site was supplemented with an under-tree sprinkler irrigation system. Prior to installation of the experimental orchard, the site had been in grass pasture that was tilled to a depth of twelve inches in January 1994.

## **Management Practices**

In cooperation with the growers, professional consultants, and extension agents, appropriate management practices for the three systems were followed. The

organic system relied on compost and foliar sprays for nutrients. In the first three years (1994-1996), bark mulch and landscape fabric controlled weeds; thereafter, cultivation and mowing were used for weed control. Organically certified biological controls, including applications of *Bacillus thuringiensis* and pheromone mating disruption to control codling moth (*Cydia pomonella* L.), were used for pest management. Fruit thinning was by hand. The conventional system included synthetic soil fertilizers and foliar sprays, pesticides, chemical fruit thinners, and pheromone mating disruption. The integrated system used both compost and synthetic fertilizers and controlled weeds with both bark mulch and herbicides. Pest management and fruit thinning were similar to those of the conventional system. Each of the three systems had similar total soil nitrogen inputs and was monitored for pests, diseases, and physiological disorders by the growers and professional consultants. Based on their observations, recommendations were made as to the organic, conventional, or integrated treatments for their control. Specific products and practices used for each of the three production systems are listed in Appendices I–III.

## **Budget Assumptions**

The following assumptions were used to estimate production costs and returns for 10-acre operations managed under each of the three production systems:

- 1. Ten acres of 'Golden Delicious' apple trees are being added to an existing 100-acre orchard in the Yakima Valley. The new plantings utilize a two-wire trellis system and a high-density spacing of 4 x 12 feet (908 trees/acre). The site was formerly in grass pasture.
- 2. Golden Delicious trees are partially self-fruitful making additional pollenizer trees unnecessary particularly when, as in this study, they are planted near or within established orchards of differing varieties. Costs associated with pollenizer trees, therefore, were not considered in this study.
- 3. The irrigation pump and mainlines, valued at \$1,000 per acre with a 30-year life, are already established and operating.
- 4. 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.
- 5. 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.
- 6. A holding pond for frost control purposes for the 10 acres is established in the fourth year after planting. The pond costs \$7,000 and has a 20-year life.

- 7. The 10-acre 'Golden Delicious' orchard, the orchard support system, and irrigation system excluding the irrigation pump and mainlines has a 20-year life
- 8. Land, excluding trees, is valued at \$5,000 per acre. The grower desires a 7% return from the land investment.
- 9. Yields (bins/acre) for years three through six were based on measured yields of the research plots from 1996 through 1999. Price premiums for organic fruit were based on averages (for the period 1997–1999) of sales reported by the Washington Growers Clearinghouse Association and interviews with two packing houses and eight organic growers. While reported premiums for organic fruit ranged from approximately 10% to over 250% above conventional market prices during the study period, an average premium of 54% (after packing, shipping, and marketing costs are deducted) above conventional fruit was used for calculating organic prices for the actual size, grade, and quality of the fruit harvested from organic plots. Values of picked bins for conventional and integrated management systems were based on market prices averaged over 1997–1999 for the actual grade, size, and quality of fruit harvested from research plots. Three- and six-month storage tests under refrigerated regular and controlled atmosphere conditions were also conducted for each of the three management systems to determine market quality of fruit after storage. No fruit was harvested for 1994 and 1995.
- 10. Interest rates are 9% on operating loans, machinery and equipment, and all other types of loans.
- 11. 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 Fruit Productivity and Quality**

All fruit harvested in 1996 and 1997 were considered culls and sold for processing due to the high incidence of skin russeting. In 1998, harvested apples were field sorted according to whether each fruit was to be sold as processed fruit (culls) or as fresh fruit. Cullage estimates for 1998 were based on these field observations. Cullage rates for 1999 were estimated using packout information obtained from a commercial fruit-packing facility and postharvest

assessment of fruit defects on 200 fruit per plot.

Fruit quality at harvest and after three- and six-month periods of controlled atmosphere and regular atmosphere storage conditions was determined and used to

assess market value of the fruit for each of the three systems. In accordance with Washington State Department of Agriculture's Organic Certification Program, 1994 through 1996 were considered to be transitional years for the organic system during which fruit was not sold as organic, and therefore, did not receive a price premium.

Market grades (at harvest) were similar for the three production systems in 1998 and 1999 although organic fruit were smaller than conventional and integrated fruit during that same period (Reganold et al., 2001). While this resulted in an average 20% reduction in organic fruit value, integrated and conventional fruit generally stored less well resulting in lower fruit value for those two systems following storage in 1998 and 1999. As shown in Table 1, cumulative yields for the duration of the study were similar for the three production systems although organic yields were significantly lower than the conventional and integrated systems in 1999.

Table 1. Yields and Bin Values (after packing shipping and marketing costs are deducted) for the Three Production Systems 1996-1999

Production System	Year	Yield (Bin / Acre)	Bin Value
Conventional	1996	38.3	\$ 48.15
	1997	62.5	48.15
	1998	63.3	57.34
	1999	70.2	125.48
Integrated	1996	27.7	\$ 48.15
	1997	67.1	48.15
	1998	65.3	56.98
	1999	68.3	126.95
<u>Organic</u>	1996	20.9	\$ 48.15
	1997	75.1	66.88
	1998	73.7	90.55
	1999	49.8	199.40

After the sixth leaf, the decision was made to use the research site in a study to compare grafting with a new variety with that of replanting. Thus, the 'Golden Delicious' trees at the research site were cut and grafted over with 'Gala' scion wood.

## **Summary of Economic Results**

Economic analysis of each of the three management systems relied on actual records of orchard inputs for labor, equipment, and products to determine costs of production for 1994 through 1999. A summary of the economic results for each of the three production practices is presented below.

### **Results of Conventional Production Practices**

Table 2 presents the estimated annual capital requirements in land, irrigation system, operating expenses, and equipment purchased as a direct consequence of adding 10 acres to an existing 100-acre orchard. Since the 10-acre planting is being added to an existing 100-acre orchard, most field equipment, buildings, and vehicles required to operate the added orchard have already been purchased. 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. Where the situation differs from the above assumptions, adjustments in the figures presented in Table 2 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 2. Summary of Capital Requirements per Year for Establishing 10 Acres of Golden Delicious Apples in the Lower Yakima Valley, Washington, under Conventional Production Practices.<sup>a</sup>

	1994	1995	1996	1997	1998	1999
	\$	\$	\$	\$	\$	\$
Requirements:						
Land (10 acres) <sup>b</sup>	50,000					
Irrigation System <sup>c</sup>	11,500					
Equipment <sup>d</sup>				16,205		
Holding Pond				7,000		
Operating Expenses <sup>e</sup>	73,966	17,744	26,816	34,475	40,149	45,596
Total Requirements	135,466	17,774	26,816	57,680	40,149	45,596
Receipts <sup>f</sup>	-	-	18,441	30,094	36,296	88,087
Net Yearly						
Requirements	135,466	17,774	8,375	27,586	3,853	-42,491

<sup>&</sup>lt;sup>a</sup>Does not include interest on investment.

Table 3 is a per acre summary of the costs incurred during the 6-year period of establishment and production under conventional management. Appendix I presents a detailed list of the production practices, materials, and services required for conventional management. In Tables 1c1 through 1c6 and Tables 3c1 through 3c6, in Appendix I, the yearly costs are categorized as variable, fixed, and total costs. While variable cost 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

<sup>&</sup>lt;sup>b</sup>Although a land purchase in this situation may not be required, the value of the land is added to this table.

<sup>&</sup>lt;sup>c</sup>The 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 4 on page 4.

<sup>&</sup>lt;sup>d</sup>One 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 adding these 10 acres of Golden Delicious apples to the existing orchard are not listed.

<sup>&</sup>lt;sup>e</sup>Includes variable costs, land taxes, and prorated taxes and insurance on equipment and buildings (see Tables 1c1 through 3c6 in Appendix I).

<sup>&</sup>lt;sup>f</sup>See assumption 9 on page 4.

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 in Table 2. Furthermore, all opportunity costs as to operator labor, management, interest on equity capital, and returns to land investment are included in Table 3 and in the detailed results presented in Appendix I. See "Detailed Results" on page 15 for a description of how variable, fixed, and opportunity costs are allocated within the yearly budgets

Under conventional production practices the total per acre net accumulated establishment and production costs equal \$20,496 at the end of six years (Table 3). Assuming the sixth year (1999) is representative of the per acre cost for the remaining 14 years of production life, the average prices required per bin, net of marketing cost, for the investment to break even (covering all cost including opportunity cost) at various yield levels over this 14-year period are:

Average Per Acre Yield	Breakeven Price/Bin
45 bins	\$173.11
50 bins	158.86
55 bins	147.20
60 bins	137.48
65 bins	129.25
70 bins	122.21

## **Results of Integrated Production Practices**

Table 4 presents the estimated annual capital requirements in land, irrigation system, operating expenses, and equipment purchased as a direct consequence of adding 10 acres to an existing 100-acre orchard. Since the 10-acre planting is being added to an existing 100-acre orchard, most field equipment, buildings, and vehicles required to operate these 10 acres have already been purchased. 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. Where the situation differs from the above assumptions, adjustments in the figures in Table 4 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 5 is a per acre summary of the costs incurred during the 6-year period of establishment and production under integrated management. Appendix II includes a detailed list of the production practices, materials, and services required for integrated management.

Table 3. Per Acre Cost of Establishing a Golden Delicious Apple Orchard Using Conventional Production Practices.

Conventional Pro	oduction Pra	ctices.				
	1994	1995	1996	1997	1998	1999
Variable Cost:	\$	\$	\$	\$	\$	\$
Custom Soil Prep.	267.00					
Trees	3632.00					
Custom Planting	363.20					
Trellis Material	650.00					
Tape & Twine	6.00	50.00	25.00	50.00	50.00	50.00
Tree Training Material	24.00					
Grass Cover Estab.	28.75					
Fertilizer	102.85	104.55	31.09	48.91	36.69	48.96
Chemicals	116.16	178.66	478.60	670.40	565.02	651.55
Beehives	0.00	0.00	35.00	35.00	35.00	35.00
Pheromone Dispensers	0.00	0.00	110.00	110.00	110.00	110.00
Labor	1144.36	898.34	902.64	903.59	1172.96	1205.80
Custom Picking	0.00	0.00	306.40	500.00	886.70	1209.70
Custom Hauling	0.00	0.00	114.90	187.50	189.90	210.60
Irrig/Electric Charge	150.00	150.00	150.00	168.75	168.75	168.75
Equipment Repair	110.35	118.32	162.17	227.74	216.68	221.78
Equipment Fuel/Lube	45.02	44.84	67.87	147.37	145.15	149.41
Overhead	348.02	80.06	122.52	156.55	183.31	207.90
Interest	320.76	56.57	66.66	81.69	89.33	96.42
Total Variable Cost	7308.47	1681.34	2572.85	3287.50	3849.49	4365.87
Total Vallaute Cost	7300.47	1001.54	2312.03	3207.30	3047.47	4303.07
Fixed Costs:						
Equipment Deprec.	192.66	203.54	256.65	374.72	363.54	370.95
<b>Equipment Interest</b>	192.33	199.87	245.43	398.97	389.87	397.70
<b>Equipment Insurance</b>	12.81	13.32	16.36	26.53	25.93	26.45
<b>Equipment Taxes</b>	28.12	29.62	38.73	69.26	67.44	69.01
Land Tax	47.16	49.78	53.71	64.19	72.05	98.25
Land Cost	350.00	350.00	350.00	350.00	350.00	350.00
Management	250.00	250.00	250.00	250.00	250.00	250.00
Estab. Cost Interest	0.00	754.34	1072.20	1343.26	1627.22	1930.15
Total Fixed Cost	1073.08	1850.47	2283.08	2876.93	3146.05	3492.51
Total Pixed Cost	10/3.06	1030.47	2203.00	20/0.93	3140.03	3492.31
Total Cost	8381.55	3531.81	4855.93	6164.43	6995.54	7858.38
Value of Production	0.00	0.00	1844.14	3009.38	3629.62	8808.70
Net Cost	8381.55	3531.81	3011.79	3155.05	3365.92	-950.32
Net Accumulated Cost	8381.55	11913.36	14925.15	18080.21	21446.12	20495.81

Table 4. Summary of Capital Requirements per Year for Establishing 10 Acres of Golden Delicious Apples in the Lower Yakima Valley, Washington, under Integrated Production Practices.<sup>a</sup>

	1994	1995	1996	1997	1998	1999
	\$	\$	\$	\$	\$	\$
Requirements:						
Land (10 acres) <sup>b</sup>	50,000					
Irrigation System <sup>c</sup>	11,500					
Equipment <sup>d</sup>				16,205		
Holding Pond				7,000		
Operating Expenses <sup>e</sup>	86,006	17,861	26,231	33,881	38,469	43,369
Total Requirements	147,506	17,861	26,231	57,086	38,469	43,369
Receipts <sup>f</sup>	-	-	13,338	32,309	37,208	86,700
Net Yearly						
Requirements	147,506	17,861	12,893	24,777	1,261	-43,331

<sup>&</sup>lt;sup>a</sup>Does not include interest on investment.

<sup>d</sup>One 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 adding this 10 acres of Golden Delicious apples to the existing orchard are not listed.

<sup>e</sup>Includes variable costs, land taxes, and prorated taxes and insurance on equipment and buildings (see Tables 1i1 through 3i6 in Appendix II).

<sup>f</sup>See assumption 9 on page 4.

<sup>&</sup>lt;sup>b</sup>Although a land purchase in this situation may not be required, the value of the land is added to this table.

<sup>&</sup>lt;sup>c</sup>The 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 4 on page 4.

Table 5. Per Acre Cost of Establishing a Golden Delicious Apple Orchard Using Integrated Production Practices.

r roduction r ractic	1994	1995	1996	1997	1998	1999
Variable Cost:	\$	\$	\$	\$	\$	\$
Custom Soil Prep.	267.00					
Trees	3632.00					
<b>Custom Planting</b>	363.20					
Trellis Material	650.00					
Tape & Twine	6.00	50.00	25.00	50.00	50.00	50.00
Tree Training Material	24.00					
Grass Cover Estab.	28.75					
Mulch	1025.00					
Compost	35.00	35.00				
Fertilizer	51.43	59.25	39.09	48.91	36.69	48.96
Chemicals	86.60	149.09	411.45	554.90	419.95	501.48
Beehives	0.00	0.00	35.00	35.00	35.00	35.00
Pheromone Dispensers	0.00	0.00	110.00	110.00	110.00	110.00
Labor	1239.91	944.00	1320.80	917.88	1169.84	1184.22
Custom Picking	0.00	0.00	0.00	536.80	887.70	1200.70
Custom Hauling	0.00	0.00	83.10	201.30	195.90	204.90
Irrig/Electric Charge	150.00	150.00	150.00	168.75	168.75	168.75
Equipment Repair	114.74	117.73	169.80	219.99	201.35	203.57
Equipment Fuel/Lube	51.53	47.72	74.21	148.79	144.21	136.06
Overhead	405.18	80.56	124.28	153.70	175.35	197.40
Interest	378.35	58.39	67.22	81.69	87.67	94.31
Total Variable Cost	8508.69	1691.74	2609.95	3227.71	3682.41	4135.35
Fixed Costs:						
Equipment Deprec.	204.26	208.31	267.30	375.58	359.48	362.70
<b>Equipment Interest</b>	206.60	206.04	261.52	400.41	386.39	389.77
<b>Equipment Insurance</b>	13.77	13.74	17.44	26.64	25.69	25.92
<b>Equipment Taxes</b>	30.98	30.86	41.95	69.54	66.74	67.42
Land Tax	47.16	49.78	53.71	64.19	72.05	98.25
Land Cost	350.00	350.00	350.00	350.00	350.00	350.00
Management	250.00	250.00	250.00	250.00	250.00	250.00
Estab. Cost Interest	0.00	865.03	1194.93	1529.10	1804.71	2099.61
Total Fixed Cost	1102.77	1973.76	2436.85	3065.46	3315.06	3643.67
Total Cost	9611.46	3665.50	5046.80	6293.17	6997.47	7779.02
Value of Production	0.00	0.00	1333.75	3230.86	3720.79	8670.00
Net Cost	9611.46	3665.50	3713.05	3062.31	3276.68	-890.98
Net Accumulated Cost	9611.46	13276.96	16990.01	20052.32	23329.00	22438.02

Under integrated production practices the total per acre net accumulated establishment and production costs equal \$22,438 at the end of six years (Table 5). Assuming the sixth year (1999) is representative of the per acre cost for the remaining 14 years of production life, the average prices required per bin, net of marketing cost, for the investment to break even (covering all costs including opportunity cost) at various yield levels over this 14 year-period are:

Average	Breakeven
Per Acre Yield	Price/Bin
	<b></b>
45 bins	\$174.45
50 bins	160.10
55 bins	148.36
60 bins	138.57
65 bins	130.29
70 bins	123.20

## **Results of Organic Production Practices**

Table 6 presents the estimated annual capital requirements in land, irrigation system, operating expenses, and equipment purchased as a direct consequence of adding 10 acres to an existing 100-acre orchard. Since the 10-acre planting is being added to an existing 100-acre orchard, most field equipment, buildings, and vehicles required to operate these 10 acres have already been purchased. 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. Where the situation differs from the above assumptions, adjustments in the figures presented in Table 7 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 7 is a per acre summary of the costs involved during the 6-year period of establishment and production. Appendix III includes a detailed list of the production practices, materials and services use for organic management in this study.

Table 6. Summary of Capital Requirements per Year for Establishing 10 Acres of Golden Delicious Apples in the Lower Yakima Valley, Washington, under Organic Production Practices.<sup>a</sup>

Year:	1994	1995	1996	1997	1998	1999
	\$	\$	\$	\$	\$	\$
Requirements:						
Land (10 acres) <sup>b</sup>	50,000					
Irrigation System <sup>c</sup>	11,500					
Equipment <sup>d</sup>				16,205		
Holding Pond				7,000		
Operating Expenses <sup>e</sup>	85,240	29,405	24,646	36,732	40,484	37,020
	=					
Total Requirements	146,740	29,405	24,646	59,937	40,484	37,020
Receipts <sup>f</sup>	-	-	10,063	50,227	66,744	99,301
Net Yearly						
Requirements	146,740	29,405	14,583	9,710	-26,260	-62,281

<sup>&</sup>lt;sup>a</sup>Does not include interest on investment.

<sup>d</sup>One 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 adding this 10 acres of Golden Delicious apples to the existing orchard are not listed.

<sup>e</sup>Includes variable costs, land taxes, and prorated taxes and insurance on equipment and buildings (see Tables 101 through 306 in Appendix III).

<sup>f</sup>See assumption 9 on page 4.

<sup>&</sup>lt;sup>b</sup>Although a land purchase in this situation may not be required, the value of the land is added to this table.

<sup>&</sup>lt;sup>c</sup>The 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 4 on page 4.

Table 7. Per Acre Cost of Establishing a Golden Delicious Apple Orchard Using Organic Production Practices.

Production Pract	1994	1995	1996	1997	1998	1999
Variable Costs:	\$	\$	\$	\$	\$	\$
Custom Soil Prep.	267.00					
Trees	3632.00					
Custom Planting	363.20					
Trellis Material	650.00					
Tape & Twine	6.00	50.00	25.00	50.00	50.00	50.00
Tree Training Material	24.00					
Grass Cover Estab.	28.75					
Mulch	1025.00					
Compost	70.00	70.00				
Landscape Fabric	0.00	949.00				
Fertilizer	0.00	0.00	21.74	13.36	10.24	26.04
Chemicals	1.28	22.62	35.69	58.44	51.64	42.34
Beehives	0.00	0.00	35.00	35.00	35.00	35.00
Pheromone Dispensers	0.00	0.00	110.00	110.00	110.00	110.00
Labor	1294.96	1218.56	1547.86	1602.76	1624.79	1511.42
Custom Picking	0.00	0.00	0.00	600.80	965.40	831.30
Custom Hauling	0.00	0.00	62.70	225.30	221.10	149.40
Irrig/Electric Charge	150.00	150.00	150.00	168.75	168.75	168.75
Equipment Repair	97.53	97.75	129.84	216.36	202.82	184.89
Equipment Fuel/Lube	48.09	46.10	61.62	166.91	160.71	145.83
Overhead	401.68	135.67	112.38	166.91	184.60	167.21
Interest	375.85	109.33	68.09	90.48	91.61	89.22
Total Variable Cost	8435.34	2849.03	2359.92	3505.07	3876.66	3511.40
Fixed Costs:						
Equipment Deprec.	189.80	192.41	234.18	403.63	387.55	361.63
Equipment Interest	194.64	195.46	230.06	429.55	413.50	386.03
Equipment Insurance	12.97	13.03	15.34	28.58	27.51	25.68
Equipment Taxes	28.57	28.74	35.66	75.38	72.17	66.67
Land Tax	47.16	49.78	53.71	64.19	72.05	98.25
Land Cost	350.00	350.00	350.00	350.00	350.00	350.00
Management	250.00	250.00	250.00	250.00	250.00	250.00
Estab. Cost Interest	0.00	855.76	1286.34	1629.14	1783.30	1833.54
Total Fixed Cost	1073.14	1935.18	2455.29	3230.47	3356.08	3371.80
Total Cost	9508.48	4784.21	4815.21	6735.54	7232.74	6883.20
Value of Production	0.00	0.00	1006.34	5022.69	6674.44	9930.12
Net Cost	9508.48	4784.21	3808.87	1712.85	558.30	-3046.92
Net Accumulated Cost	9508.48	14292.69	18101.57	19814.42	20372.71	17325.80

Under organic production practices the total per acre net accumulated establishment and production costs equal \$17,326 at the end of six years (Table 7). Accumulated costs are significantly less under organic management after the sixth year than under conventional and integrated management primarily due to the price premiums received for organic fruit in years 4 through 6. Assuming the sixth year (1999) is representative of the per acre cost for the remaining 14 years of production life, the average prices required per bin, net of marketing cost, for the investment to break even (covering all costs including opportunity cost) at various yield levels over this 14-year period are:

Average	Breakeven
Per Acre Yield	Price/Bin
45 bins	\$158.47
50 bins	145.63
55 bins	135.13
60 bins	126.38
65 bins	118.97
70 bins	112.62

### **Detailed Results**

The detailed estimated costs for the establishment and production years are in Appendices I, II and III for conventional, integrated and organic production practices, respectively. Since the format of each appendix is the same, an explanation of only Appendix I (conventional production practices) will be presented in this section.

Tables 1c1 through 1c6 outline the schedule of field operations and per acre cost by calendar month, type of machinery and labor used, and hours used per acre on an annual basis. The costs of field operations are divided into fixed and variable categories. Fixed costs include annual costs of machinery, building, irrigation pump and mainline, land ownership, and management. Variable costs include costs 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 (Table 5c). 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 costs 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. For each year, beginning with year 2, a fixed cost of 9% of the cumulative establishment costs summed through the previous year 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. Operator management was valued, as an opportunity cost, at \$250 per acre, annually.

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 1c1 through 1c6, 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 2c1 through 2c6 present by year, month, and operation the services and/or materials that went into the calculation of these figures for Table 1c1 through 1c6, respectively.

Tables 3c1 through 3c5 are itemized lists of the costs for each respective year. Most items are self-explanatory or have been explained previously. However, "Tractor Interest" and "Machinery Interest" 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 the previous page for building, irrigation, and machinery fixed cost.

Table 4c 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 5c.

<sup>&</sup>lt;sup>2</sup>Machinery interest includes interest on the machine shed and shop, irrigation pump, and mainlines.

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.

## **Summary and Conclusion**

The data used in this study were taken from an actual research project of high density 'Golden Delicious' apple orchard plots in the Yakima Valley of Washington State grown under conventional, integrated, and organic production practices. The objective of this study was to determine, based on data obtained from the research plots, estimated production costs and returns for ten-acre orchard operations managed under each of the three management strategies from initial planting of trees through the sixth year.

Costs of production for 1994 through 1999 were based on actual records of orchard inputs for each of the three management systems at the research site for labor, equipment, and products. In determining the net per acre accumulated cost of establishing the ten-acre orchard over six years, all material and input costs, including opportunity costs for operator labor, management and invested equity capital, were included. As shown in Table 8, deducted from these cost figures was the value of production for the fruit actually produced on the various research plots expanded to a per acre basis. Thus, the net accumulated per acre costs of establishing a ten-acre 'Golden Delicious' orchard using conventional, integrated and organic production practices were \$20,496, \$22,438 and \$17,326, respectively. Some of the major factors affecting the net accumulated cost, other than material and services, were poor fruit quality in the first three years of production, resulting in low fruit prices in those years, and the price premiums received for organic fruit in years 5 and 6.

Based on the net accumulated cost figures for establishment and production during the first six years of orchard life and assuming that year 6 costs are representative of an average mature production year, Table 9 summarizes the prices that must be received for the fruit grown under the three different production systems, at various average yield levels, if the orchard is to break even (covering all cost including opportunity cost) over the remaining 14 years of a 20-year production life.

Under conventional and integrated management the added 10-acre orchard will need to maintain relatively high levels of productivity and fruit quality and receive approximately \$140/bin to be a profitable 20-year business endeavor. Under organic management, however, the added 10-acre orchard can produce at a lower level of production than the conventional and integrated orchards and still remain profitable only because of the price premium received for

organic fruit during the establishment years. As important as market prices are to overall profitability, maintenance of high levels of fruit quality is necessary to capture premium market prices over the remaining 14 years of the orchard's productive life. As was found in this study, high yields of poor quality fruit result in unprofitable operations even in years of relatively high market prices.

Table 8. Per Acre Cost Summary of Establishing a Golden Delicious Apple Orchard Using Conventional, Integrated and Organic Production Practices.

	1994	1995	1996	1997	1998	1999
Conventional Practices:						
Total Cost	8381.55	3531.81	4855.93	6164.43	6995.54	7858.38
Value of Production	0.00	0.00	1844.14	3009.38	3629.62	8808.70
Net Cost	8381.55	3531.81	3011.79	3155.05	3365.92	-950.32
Net Accumulated Cost	8381.55	11913.36	14925.15	18080.21	21446.12	20495.81
Integrated Practices:						
Total Cost	9611.46	3665.50	5046.80	6293.17	6997.47	7779.02
Value of Production	0.00	0.00	1333.75	3230.86	3720.79	8670.00
Net Cost	9611.46	3665.50	3713.05	3062.31	3276.68	-890.98
Net Accumulated Cost	9611.46	13276.96	16990.01	20052.32	23329.00	22438.02
Organic Practices:						
Total Cost	9508.48	4784.21	4815.21	6735.54	7232.74	6883.20
Value of Production	0.00	0.00	1006.34	5022.69	6674.44	9930.12
Net Cost	9508.48	4784.21	3808.87	1712.85	558.30	-3046.92
Net Accumulated Cost	9508.48	14292.69	18101.57	19814.42	20372.71	17325.80

Table 9. Average Prices Needed per Bin To Be Received by the Producer, Net of Marketing Cost, for the Orchard Investment to Break Even over the Remaining Fourteen Years of Productive Life.

Average Annual Yield	Breakeven Price Conventional Practices	Breakeven Prices Integrated Practices	Breakeven Prices Organic Practices
	\$	\$	\$
40 bins	190.93	192.38	174.51
45 bins	173.11	174.45	158.47
50 bins	158.86	160.10	145.63
55 bins	147.20	148.36	135.13
60 bins	137.48	138.57	126.38
65 bins	129.25	130.29	118.97
70 bins	122.21	123.20	112.62

Due to the procedures and assumptions used in this study, the results should be used with care. As a research study that benefitted from the expert input of many growers and professional horticulturalists and that was located on a larger, well-equipped orchard, the situation outlined is not typical of all orchard or farm operations. For example, economies were gained by planting 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, field dimensions, topography, and the need for roads, windbreaks, buildings, and service areas may reduce the number of actual acres of orchard.

It must also be restated for this study, prices used for fruit had a significant impact on overall production costs through their effect on interest costs. With the nearly 50% price premium above conventional fruit of similar size and grade received for organic fruit (see Budget Assumption 9 on page 4), the organic system more quickly paid off establishment costs thereby significantly reducing carryover interest costs in the latter years of the study. Anecdotal reports of 20–30 % higher costs of organic production typically do not take into consideration these interest costs.

In a separate analysis of this study's economic data (Reganold et al., 2001) it was estimated that 12–14% price premiums for organic fruit are required for the organic system to match the breakeven point of the conventional system. These values reflect the greater costs associated with organic production as compared with conventional production in our study. It is also important to note that when no price premium was assumed for organic apples, interest costs accounted for a significant portion of production costs and resulted in lower profitability than either the conventional or integrated systems. Interest costs, and therefore production costs, are greatly influenced by fruit prices indicating that the prices used in this study ought not necessarily be used for future production cost and return estimates.

Thus, it is essential that this publication be used primarily as a guide in determining establishment costs and 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 technology used at a research site in the lower Yakima Valley in eastern Washington.

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# Appendix I

Cost of Establishing a High Density

Golden Delicious Apple Orchard

Using Conventional Production Practices

TOTAL PER ACRE

TABLE 1c1: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER CONVENTIONAL PRODUCTION PRACTICES - 1994.

VARIABLE COST TOTAL FUEL, MACH LABOR FIXED LUBE, & VARIABLE TOTAL TOOLING MTH YEAR HOURS HOURS COST REPAIRS LABOR SERVICE MATER. INTER. COST \$ \$ \$ \$ \$ \$ \$ 

 FEB 1994
 .00
 .00
 .00
 .00
 12.00
 .00
 .72
 12.72
 12.72

 FEB 1994
 .00
 .00
 .00
 .00
 100.00
 .00
 6.00
 106.00
 106.00

 SOIL SAMPLE CUSTOM HIRE CUSTOM HIRE RIP LAND CLEAN UP & DISK CUSTOM HIRE FEB 1994 .00 .00 .00 .00 .00 100.00 LAYOUT & STAKE HAND LABOR FEB 1994 .00 4.00 .00 .00 .00 30.00 .00 FERTILIZE 52HP-WT, TRAILER W/HAND LABOR MAR 1994 2.00 6.30 17.09 8.62 49.87 .00 .00 9.00 159.00 159.00 .00 .00 30.00 .00 5.00 2.10 37.10 37.10 .00 102.85 8.47 169.82 186.91 CUSTOM PLANTED MAR 1994 .00 .00 .00 .00 .00 363.20 3632.00 209.75 4204.95 4204.95 EP 52HP-WT, ROTOTILLER MAR 1994 2.50 2.75 24.84 17.94 24.06 .00 .00 2.21 44.21 69.05 PLANT TREES COVER CROP PREP 52HP-WT, ROTOTILLER SEED COVER CROP 52HP-WT, ROTOTILLER MAR 1994 2.50 2.75 24.84 17.94 24.06 .00

SEED COVER CROP 52HP-WT, RENTED SEEDER MAR 1994 1.10 1.21 7.01 3.64 10.59 10.00

PRUNE HAND LABOR (1 PERSON) MAR 1994 .00 1.00 .09 .00 7.50 .00

MILDEW SPRAY 52HP-WT, BLAST SPRAYER APR 1994 .50 .60 8.38 4.78 5.25 .00

TREE TRAINING HAND LABOR SEA 1994 .00 20.00 .00 .00 150.00 .00 45.24 18.75 2.26 52.25 .00 .39 7.89 7.99 .00 26.00 1.62 37.65 46.03 MILDEW SPRAY 52HP-WT, BLAST SPRAYER
TREE TRAINING HAND LABOR .00 20.00 7.83 181.83 181.83 SEA 1994 .00 .00 150.00 24.00 .00 .00 203.03 50.00 .00 150.00 9.00 209.00 412.03 IRRIGATE .00 SOLID SET UNDERTREE IRR SYSTEM SEA 1994 4-WHEEL ATV W/ABOVE OPERATION SEA 1994 10.00 10.00 21.94 10.08 87.50 .00 4.39 101.97 123.90 IRRIGATE .00 41.95 1160.70 1160.70 INSTALL TRELLIS HAND LABOR MAY 1994 .00 60.00 TIE LEADERS HAND LABOR MAY 1994 .00 15.00 4.44 122.94 122.94 52HP-WT, BLAST SPRAYER MAY 1994 52HP-WT, 100 GAL SPRAYER JUN 1994 .60 MILDEW SPRAY .50 1.35 37.33 45.71 6.32 4.20 .00 150.00 .48 4.50 41.30 45.80 HERBICIDE .40 1.20 JUN 1994 .40 .48 4.50 154.50 154.50 .00 HOE AROUND TREES HAND LABOR .00 4.95 MOW ORCHARD 52HP-WT, 9' ROTARY MOWER JUL 1994 .50 .55 2.74 4.81 .00 .00 .17 7.72 12.67 .00 29.58 52HP-WT, 100 GAL. SPRAYER JUL 1994 .40 .48 4.50 6.32 4.20 41.00 HERBICIDE .90 45.50 JUL 1994 .50 .60 8.38 4.78 5.25 .00 3.78 .31 14.12 COVER SPRAY 52HP-WT, BLAST SPRAYER 22.50 .00 .00 MOW ORCHARD 52HP-WT, 9' ROTARY MOWER AUG 1994 .50 .55 4.95 2.74 4.81 .11 7.66 12.61 MOW ORCHARD 52HP-WT, 9' ROTARY MOWER OCT 1994 .50 .55 4.95 2.74 4.81 .00 .00 .00 7 55 12.50 GOPHER CONTROL HAND LABOR .00 15.00 .00 ANN 1994 .00 2.00 .00 1.28 .73 17.01 17.01 .00 36.45 23.42 .00 .00 .00 MISC USE 1/2 TON PICKUP ANN 1994 7.14 1.05 24.47 60.92 4-WHEEL ALL TERRAIN VEHICLE ANN 1994 5.70 .00 12.50 5.74 .00 .00 .26 MISC USE .00 6.00 18.51 MACH SHED & SHOP ANN 1994 .00 .00 38.71 .03 .75 39.46 MISC USE .71 .00 .00 .00 .00 15.29 .00 .00 .00 .00 .00 .00 15.29 .00 .00 .00 .00 348.02 .00 .00 348.02 348.02 MISC USE SHOP TOOLS ANN 1994 .00 UTILITIES, LEGAL, ACCTNG, ETC. ANN 1994 .00 OVERHEAD MANAGEMENT OPERATOR MANAGEMENT ANN 1994 .00 .00 250.00 .00 .00 .00 .00 .00 .00 250.00 MANAGERILL. LAND COST .00 350.00 .00 .00 .00 .00 .00 350.00 INTEREST ON LAND ANN 1994 .00 .00 .00 .00 .00 .00 .00 .00 .00 47.16 LAND ANN 1994 .00 47.16

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32.24 146.67 1073.08 155.38 1144.36 1133.22 4554.77 320.74 7308.47 8381.56

TABLE 2c1: MATERIALS AND SERVICES USED BY CONVENTIONAL PRACTICES - 1994.

OPERATION		MATERIAL AND/OR SERVICE
Soil Sample	February	Custom hire @ \$12.00/acre
Rip Land	February	Custom hire @ \$100.00/acre
Cleanup & Disk	February	Custom hire @ \$150.00/acre
Layout & Stake	February	Layout & state material @ \$5.00/acre
Fertilize	March	605 lbs. calcium nitrate @ 17¢/lb
Plant Trees	March	908 Standard Golden Delicious trees @ \$4.00/tree Custom plant 908 trees @ 40¢/tree
Seed Cover Crop	March	Rented grass seeder @ \$10.00/acre 15.0 lbs. of Companion seed @ \$1.25/lb
Mildew Spray	April	5.0 ozs. Rally @ \$5.20/oz.
Tree Training	Season	Tree training material @ \$24.00/acre
Irrigate	Season	Irrigation charge & electricity @ \$150.00/acre
Install Trellis	May	Trellis material @ \$650.00/acre
Tie Leaders	May	Tape & twine @ \$6.00/acre
Mildew Spray	May	0.5 lbs. of Procure @ \$51.90/lb.
Herbicide	June	0.5 gals. of Roundup @ \$59.15/gal.
Herbicide	July	0.5 gals of Roundup @ \$59.15/gal.
Cover Spray	July	1.0 oz. of Provado @ \$3.78/oz.
Gopher Control	Annual	1.0 lb. of Gopher Getter Bait @ \$1.28/lb.
Overhead	Annual	5% variable cost

TABLE 3c1: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER CONVENTIONAL PRODUCTION PRACTICES - 1994.

		PRICE OR		 Value or	VOLIB
	UNIT				
VARIABLE COSTS  SOIL SAMPLE CUSTOM RIPPING CLEAN-UP & DISK LAYOUT & STAKE MATER. GOLDEN TREES CUSTOM PLANT TREES COMPANION SEED RENT SEEDER TRELLIS MATERIALS TAPE & TWINE TREE TRAIN MAT. CALCIUM NITRATE RALLY PROCURE ROUNDUP PROVADO GOPHER GETTER IRR. CHG. & ELECT. CASUAL LABOR LABOR(TRAC/MACH) TRACTOR REPAIR TRACTOR FUEL/LUBE MACHINERY REPAIRS MACHINE FUEL/LUBE OVERHEAD INTEREST ON OP. CAP.		 \$		 \$	
SOIL SAMPLE	ACRE	12.00	1.00	12.00	
CUSTOM RIPPING	ACRE	100.00	1.00	100.00	
CLEAN-UP & DISK	ACRE	150.00	1.00	150.00	
LAYOUT & STAKE MATER.	ACRE	5.00	1.00	5.00	
GOLDEN TREES	TREE	4.00	908.00	3632.00	
CUSTOM PLANT TREES	TREE	.40	908.00	363.20	
COMPANION SEED	LB.	1.25	15.00	18.75	
RENT SEEDER	ACRE	10.00	1.00	10.00	
TRELLIS MATERIALS	ACRE	650.00	1.00	650.00	
TAPE & TWINE	ACRE	6.00	1.00	6.00	
TREE TRAIN MAT.	ACRE	24.00	1.00	24.00	
CALCIUM NITRATE	LB.	.17	605.00	102.85	
RALLY	OZ.	5.20	5.00	26.00	
PROCURE	LB.	51.90	.50	25.95	
ROUNDUP	GAL.	59.15	1.00	59.15	
PROVADO	OZ.	3.78	1.00	3.78	
GOPHER GETTER	LB.	1.28	1.00	1.28	
IRR. CHG. & ELECT.	ACRE	150.00	1.00	150.00	
CASUAL LABOR	HOUR	7.50	111.20	834.00	
LABOR (TRAC/MACH)	HOUR	8.75	35.47	310.36	
TRACTOR REPAIR	ACRE	14.10	1.00	14.10	
TRACTOR FUEL/LUBE	ACRE	17.03	1.00	17.03	
MACHINERY REPAIRS	ACRE	96.25	1.00	96.25	
MACHINE FUEL/LUBE	ACRE	27.99	1.00	27.99	
OVERHEAD	ACRE	348.02	1.00	348.02	
INTEREST ON OP. CAP.	ACRE	320.76	1.00	320.76	
TOTAL VARIABLE COST				7308.47	
TOTAL VARIABLE COST				7300.47	
FIXED COSTS		\$		\$	
FIXED COSTS TRACTOR DEPRECIATION	ACRE	25.07	1.00	25.07	
TRACTOR INTEREST	ACRE	27.50	1.00	27.50	
TRACTOR INSURANCE	ACRE	1.83	1.00	1.83	
TRACTOR TAXES	ACRE	5.50	1.00	5.50	
MACHINE DEPRECIATION	ACRE	167.60	1.00	167.60	
MACHINE INTEREST	ACRE	164.83	1.00	164.83	
MACHINE INSURANCE	ACRE	10.99	1.00	10.99	
MACHINE TAXES	ACRE	22.62	1.00	22.62	
LAND TAX - YR 1	ACRE	47.16	1.00	47.16	
LAND COST	ACRE	350.00	1.00	350.00	
TRACTOR DEPRECIATION TRACTOR INTEREST TRACTOR INSURANCE TRACTOR TAXES MACHINE DEPRECIATION MACHINE INTEREST MACHINE INSURANCE MACHINE TAXES LAND TAX - YR 1 LAND COST MANAGEMENT	ACRE	250.00	1.00	250.00	
TOTAL FIXED COST				1073.08	
TOTAL COST				8381.56	
TOTAL COST				0201.20	

TABLE 1c2: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER CONVENTIONAL PRODUCTION PRACTICES - 1995.

UNDER CONVENTIONAL PRODUCTION PRACTICES = 1995.

							VAR	IABLE COS	ST			
OPERATION	TOOLING	MTH YEAR	HOURS	LABOR HOURS	TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	LABOR	SERVICE			TOTAL VARIABLE COST	TOTAL COST
					\$	\$	\$	\$	\$	\$	\$	\$
PRUNE	HAND LABOR (1 PERSON)	FEB 1995	.00	6.20	.57	.00	46.50	.00	.00	2.79	49.29	49.86
DORM. SPY + ZINC	52HP-WT, BLAST SPRAYER	MAR 1995	.50	.60	8.38	4.78	5.25	.00	6.85	.89	17.77	26.15
FERTILIZE	52HP-WT, TRAILER W/HAND LABOR	APR 1995	2.00	6.30	17.09	8.62	49.87	.00	90.61	6.71	155.82	172.91
FOLIAR SPRAY	52HP-WT, BLAST SPRAYER	APR 1995	.50	.60	8.38	4.78	5.25	.00	9.82	.89	20.74	29.12
IRRIGATE	SOLID SET UNDERTREE IRR SYSTEM	SEA 1995	.00	.00	203.03	50.00	.00	150.00	.00	9.00	209.00	412.03
IRRIGATE	4-WHEEL ATV W/ABOVE OPERATION	SEA 1995	10.00	10.00	21.94	10.08	87.50	.00	.00	4.39	101.97	123.90
MOW	52HP-WT, 9' ROTARY MOWER	MAY 1995	.50	.55	4.95	2.74	4.81	.00	.00	.28	7.83	12.78
MILDEW SPRAY	52HP-WT, BLAST SPRAYER	MAY 1995	.50	.60	8.38	4.78	5.25	.00	26.00	1.35	37.38	45.76
MILDEW SPRAY	52HP-WT, BLAST SPRAYER	MAY 1995	.50	.60	8.38	4.78	5.25	.00	9.30	.72	20.06	28.44
TREE TRAINING	HAND LABOR	MAY 1995	.00	60.00	.00	.00	468.75	.00	37.50	18.98	525.23	525.23
HERBICIDE	52HP-WT, 100 GAL SPRAYER	JUN 1995	.40	.48	4.50	6.32	4.20	.00	29.58	1.20	41.30	45.80
MOW	52HP-WT, 9' ROTARY MOWER	JUN 1995	.50	.55	4.95	2.74	4.81	.00	.00	.23	7.78	12.72
COVER SPRAY	52HP-WT, BLAST SPRAYER	JUN 1995	.50	.60	8.38	4.78	5.25	.00	16.04	.78	26.85	35.23
MOW	52HP-WT. 9' ROTARY MOWER	JUL 1995	.50	.55	4.95	2.74	4.81	.00	.00	.17	7.72	12.67
TREE TRAINING	HAND LABOR 52HP-WT, BLAST SPRAYER	JUL 1995	.00	20.00	.00	.00	156.25	.00	12.50	3.80	172.55	172.55
COVER SPRAY (2X)	52HP-WT, BLAST SPRAYER	JUL 1995	.50	.60	8.38	4.78	5.25	.00	32.08	.95	43.06	51.44
MOW	52HP-WT, 9' ROTARY MOWER	AUG 1995	.50	.55	4.95	2.74	4.81	.00	.00	.11	7.66	12.61
HERBICIDE	52HP-WT, 100 GAL SPRAYER	AUG 1995	.40	.48	4.50	6.32	4.20	.00	29.58	.60	40.70	45.20
COVER SPRAY	52HP-WT, BLAST SPRAYER	AUG 1995	.50	.60	8.38	4.78	5.25	.00	16.04	.39	26.46	34.84
MOW	52HP-WT, 9' ROTARY MOWER	SEP 1995	.50	.55	4.95		4.81	.00	.00		7.66	12.55
COVER SPRAY	52HP-WT, BLAST SPRAYER	SEP 1995	.50	.60	8.38	4.78	5.25	.00	16.04	.20	26.27	34.65
GOPHER CONTROL	HAND LABOR	ANN 1995	.00	2.00	.00	.00	15.00	.00	1.28	.73	17.01	17.01
MISC USE	HAND LABOR 1/2 TON PICKUP	ANN 1995	7.14	.00	36.45		.00	.00	.00		24.47	60.92
MISC USE	4-WHEEL ALL TERRAIN VEHICLE	ANN 1995	5.70	.00	12.50	5.74	.00	.00	.00	.26	6.00	18.51
MISC USE	MACHINE SHED & SHOP	ANN 1995	.00	.00	38.71	.71	.00	.00	.00		.75	39.46
MISC USE	SHOP TOOLS	ANN 1995	.00	.00	15.29	.00	.00	.00	.00		.00	15.29
OVERHEAD	UTILITIES, LEGAL, ACCTNG, ETC.		.00	.00	.00		.00	80.06	.00		80.06	80.06
MANAGEMENT	OPERATOR MANAGEMENT	ANN 1995	.00	.00	250.00		.00	.00	.00		.00	250.00
LAND COST	INTEREST ON LAND	ANN 1995	.00	.00	350.00	.00	.00	.00	.00			350.00
TAXES	INTEREST ON LAND LAND	ANN 1995	.00	.00	49.78	.00	.00	.00	.00			49.78
INTEREST COST	INTEREST ON 1ST YR ESTAB COST		.00	.00	754.34		.00	.00	.00			754.34
TOTAL PER ACRE			32.14	113.01	1850.47	163.16	898.33	230.05	333.22	56.57	1681.34	3531.81

TABLE 2c2: MATERIALS AND SERVICES USED BY CONVENTIONAL PRACTICES - 1995.

OPERATION		MATERIAL AND/OR SERVICE
		1.05 gals. of Superior Oil @ \$2.60/gal. 0.5 gals. of Zinc 10% @ \$8.25/gal.
Fertilize	April	533 lbs. of calcium nitrate @ 17¢/lb.
Foliar Spray	April	2.0 gals. of 3-18-18 @ \$4.55/gal. 4.0 lbs. of urea @ 18¢/lb.
Irrigate	Season	Irrigation charge and electricity @ \$150.00/acre
Mildew Spray	May	5.0 ozs. of Rally @ \$5.20/oz.
Mildew Spray	May	10.0 lbs. of Microthiol @ 93¢/lb.
Tree Training	May	Tape & twine @ \$37.50/acre
Herbicide	June	0.5 gal. of Roundup @ \$59.15/gal.
Cover Spray	June	2.0 lbs. of Guthion @ \$8.02/lb.
Tree Training	July	Tape & twine @ \$12.50/acre
Cover Spray (2x)	July	2.0 lbs. of Guthion @ \$8.02/lb. ea. time
Herbicide	August	0.5 gal. of Roundup @ \$59.15/gal.
Cover Spray	August	2.0 lbs. of Guthion @ \$8.02/lb.
Cover Spray	September	2.0 lbs. of Guthion @ \$8.02/lb.
Gopher Control	Annual	1.0 lb. of Gopher Getter Bait @ \$1.28/lb.
Overhead	Annual	5% variable cost

TABLE 3c2: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER CONVENTIONAL PRODUCTION PRACTICES - 1995.

INODOCTION IN	ACIIC.	LS - 1999.			
		PRICE OR COST/UNIT	QUANTITY	COST	FARM
VARIABLE COSTS SUPERIOR OIL ZINC 10%		 خ		 ¢	
SUPERIOR OIL	GAT.	2 60	1 05	2 73	
ZINC 10%	GAI.	8 25	50	4 12	
3-18-18	GAI.	8.25 4.55 .18	2 00	9 10	
UREA	LB.	.18	4.00	.72	
CALCIUM NITRATE MICROTHIOL	LB.	.17	533.00	90.61	
MICROTHIOL	LB.	.93	10.00	9.30	
MICROTHIOL RALLY ROUNDUP GUTHION	OZ.	5.20	5.00	26.00	
ROUNDUP	GAL.	59.15	1.00	59.15	
GUTHION	LB.	59.15 8.02	10.00	80.20	
GOPHER GETTER TAPE & TWINE IRR. CHG. & ELECT.	LB.	1.28	1.00	1.28	
TAPE & TWINE	ACRE	50.00	1.00	50.00 150.00	
IRR. CHG. & ELECT.	ACRE	150.00	1.00	150.00	
CASUAL LABOR LABOR(TRAC/MACH) TRACTOR REPAIR	HOUR	7.50	72.40	543.00 355.34 13.95	
LABOR (TRAC/MACH)	HOUR	8.50	41.80	355.34	
TRACTOR REPAIR	ACRE	13.95	1.00	13.95	
TRACTOR FUEL/LUBE MACHINERY REPAIRS	ACRE	16.84	1.00	16.84	
MACHINERY REPAIRS	ACRE	104.37	1.00	104.37	
MACHINE FUEL/LUBE	ACRE	27.99	1.00	27.99	
INTEREST ON OP. CAP.	ACRE	56.57	1.00	56.57	
INTEREST ON OP. CAP. OVERHEAD	ACRE	80.06	1.00	80.06	
TOTAL VARIABLE COST				1681.34	
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 INSURANCE TRACTOR TAXES	ACRE	5.44	1.00	1.81 5.44	
MACHINE DEPRECIATION			1.00	178.74 172.66 11.51	
MACHINE INTEREST	ACRE	172.66	1.00	172.66	
MACHINE INTEREST MACHINE INSURANCE	ACRE	11.77	1.00	11.51	
MACHINE TAXES LAND TAX - YR 2 LAND COST	ACRE	24.18	1.00	24.18	
LAND TAX - YR 2	ACRE	49.78	1.00	49.78	
LAND COST	ACRE	350.00	1.00	350.00	
MANAGEMENT	ACRE	250.00	1.00	250.00	
MANAGEMENT INTEREST ON ESTAB.	ACRE	754.34	1.00	754.34	
TOTAL FIXED COST				1850.47	
TOTAL COST				3531.81	

TABLE 1c3: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER CONVENTIONAL PRODUCTION PRACTICES - 1996.

	VARIABLE COST												
						TOTAL	FUEL,					TOTAL	
					LABOR	FIXED	LUBE, &					VARIABLE	TOTAL
OPERATION	TOOLING	MTH	YEAR	HOURS	HOURS	COST	REPAIRS	LABOR	SERVICE	MATER.	INTER.	COST	COST
						\$	\$	\$	\$	\$	\$	\$	\$
PRUNE	HAND LABOR (2 PEOPLE)	FEB	1996	.00	15.00	1.38		112.50	.00	.00		119.25	120.63
DORMANT SPRAY	52HP-WT, BLAST SPRAYER		1996	.50	.60	8.38		5.25	.00	17.33		28.79	37.17
COVER SPRAY	52HP-WT, BLAST SPRAYER		1996	.50	.60	8.38	4.78	5.25	.00	24.76		36.12	45.00
RENT BEEHIVE	ONE BEEHIVE PER ACRE		1996	.00	.00	.00	.00	.00	35.00	.00	1.58	36.58	36.58
IRRIGATE	SOLID SET UNDERTREE IRR SYSTEM			1.00	.00	203.03	50.00	.00		.00	9.00	209.00	412.03
IRRIGATE HANG DISPENSERS	4-WHEEL ATV W/ABOVE OPERATION HAND LABOR		1996	10.00	10.00	21.94		87.50 7.50	.00	.00 110.00	4.39 5.29	101.97 122.79	123.90 122.79
MOW	52HP-WT, 9' ROTARY MOWER		1996	.50	.55	4.95		4.81	.00	.00	.28	7.83	12.78
=	52HP-WT, BLAST SPRAYER	MAY		.50	.60	8.38		5.25	.00	51.14	2.29	63.46	71.84
MILDEW SPRAY				.50	.60	8.38		5.25	.00	26.00	1.35	37.38	45.76
THINNING SPRAY	52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER HAND LABOR 52HP-WT, 100 GAL SPRAYER 52HP-WT, 9' ROTARY MOWER	MAY	1996	.50	.60	8.38		5.25	.00	117.15	4.77	131.95	140.33
TREE TRAINING	HAND LABOR	MAY	1996	.00	20.00	.00	.00	150.00	.00	12.50	6.09	168.59	168.59
HERBICIDE	52HP-WT, 100 GAL SPRAYER	MAY	1996	.40	.48	4.50	6.32	4.20	.00	29.58	1.50	41.60	46.10
MOW	52HP-WT, 9' ROTARY MOWER	JUN	1996	.50	.55	4.95		4.81	.00	.00	.23	7.78	12.72
HAND THINNING			1996	.00	14.00	.00		105.00	.00	.00		108.15	108.15
MILDEW/COVER SPY	52HP-WT, BLAST SPRAYER 52HP-WT, 100 GAL SPRAYER 52HP-WT, 9' ROTARY MOWER	JUN		.50	.60	8.38		5.25	.00	42.04	1.56	53.63	62.01
HERBICIDE	52HP-WT, 100 GAL SPRAYER	JUN	1996	.40	.48	4.50		4.20	.00	29.58	1.20	41.30	45.80
MOW	HAND LABOR	JUL		.50	.55 20.00	4.95		4.81	.00	.00 12.50	.17	7.72	12.67
TREE TRAINING CALCIUM/COVER	HAND LABOR	JUL	1006	.50	.60	.00 8.38		5.25	.00	51.44	3.66 1.38	166.16 62.86	166.16 71.24
HERBICIDE	52HP-WI, BLASI SPRAILER 52HD-WT 100 CAI CDDAVED	TIIT.	1006	.40	.48	4.50		4.20	.00	29.58	.90	41.00	45.50
CALCIUM/COVER	52HP-WT BLAST SPRAYER	AIIG	1996	.50	.60	8.38	4.78	5.25	.00	19.16	.44	29.63	38.01
MOW	52HP-WT, 9' ROTARY MOWER	AUG	1996	.50	.55	4.95	2.74	4.81	.00	.00	.11	7.66	12.61
HARVEST(38.3 BN)	PICKERS (7 PEOPLE)	SEP	1996	.00	.00	9.29	.00	306.40	.00	.00		308.70	317.99
HARVEST	52HP-WT, BACKFORK	SEP	1996	7.66	8.43	49.90	26.39	73.76	.00	.00	.75	100.90	150.80
BIN HANDLING	52HP-WT, FORKLIFT	SEP	1996	3.83	4.21	30.09	15.96	36.84	.00	.00		53.20	83.29
CHECK BINS	CHECKER FOR PICKING CREW	SEP	1996	.00	7.66	.00		57.45	.00	.00		57.88	57.88
LOAD FRUIT	50HP-WT, FORKLIFT	SEP	1996	1.53	1.69	15.96		14.79	.00	.00		24.37	40.33
HAUL FRUIT	CUSTOM HAULING	SEP	1996	.00	.00	.00		.00		.00		115.76	115.76
HERBICIDE	52HP-WT, 100 GAL SPRAYER	SEP	1996	.40	.48	4.50		4.20	.00	29.58	.30	40.40	44.90
MOW	HAND LABOR 52HP-WT, BLAST SPRAYER 52HP-WT, 100 GAL SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, 9' ROTARY MOWER PICKERS (7 PEOPLE) 52HP-WT, BACKFORK 52HP-WT, FORKLIFT CHECKER FOR PICKING CREW 50HP-WT, FORKLIFT CUSTOM HAULING 52HP-WT, 100 GAL SPRAYER 52HP-WT, 9' ROTARY MOWER 52HP-WT, 100 GAL SPRAYER 52HP-WT, 100 GAL SPRAYER 52HP-WT, 100 GAL SPRAYER	OCT	1996	.50 .40	.55 .48	4.95		4.81 4.20	.00	.00 29.58	.00	7.55 40.10	12.50 44.60
HERBICIDE	52HP-WI, BLAST SPRAYER HAND LABOR 1/2 TON PICKUP	OCT	1996	.50	.48	4.50 8.38	6.32 4.78	5.25	.00	29.58 11.50	.00	21.73	29.91
GODHER CONTROL	HAND LABOR	ANN		.00	2.00	.00		15.00	.00	1.28	.73	17.01	17.01
MISC USE	1/2 TON PICKUP	ANN		7.14	.00	36.45		.00	.00	.00	1.05	24.47	60.92
MISC USE	4-WHEEL ALL TERRAIN VEHICLE	ANN		5.70	.00	12.50		.00	.00	.00	.26	6.00	18.51
MISC USE	MACHINE SHED & SHOP	ANN	1996	1.00	.00	38.71	.71	.00	.00	.00	.03	.75	39.46
MISC USE	SHOP TOOLS		1996	1.00	.00	15.29	.00	.00	.00	.00	.00	.00	15.29
OVERHEAD	UTILITIES, LEGAL, ACCTNG, ETC.			.00	.00	.00	.00	.00		.00	.00	122.52	122.52
MANAGEMENT	OPERATOR MANAGEMENT	ANN	1996	.00	.00	250.00		.00	.00	.00		.00	250.00
LAND COST	INTEREST ON LAND	ANN	1996	.00	.00	350.00		.00	.00	.00			350.00
TAXES	LAND	AMM	1990	.00	.00	53.71	.00	.00	.00	.00			53.71
INTEREST COST	INTEREST ON ESTABLISHMENT COST	ANN 	1996	.00	.00	1072.20	.00	.00	.00	.00	.00	.00	1072.20
TOTAL PER ACRE				62.86	114.54	2283.08	230.05	1209.04	422.42	644.68	66.66	2572.85	4855.93

TABLE 2c3: MATERIALS AND SERVICES USED BY CONVENTIONAL PRACTICES - 1996.

OPERATION MATERIAL AND/OR SERVICE Dormant Spray 1.5 gals. of Superior Oil @ \$2.60/gal. March 0.5 gal. of Zinc 10% @ 8.25/gal. + Zinc 10.0 lbs. of Microthiol @ 93¢/lb. Cover Spray March 4.0 pints of Lorsban @ \$6.19/pint Rent Beehive April 1.0 beehive @ \$35.00/hive Irrigate Irrigation charge & electricity Season @ \$150.00/acre 400 ties @ 27.5¢/tie Hang Dispensers Season 2.0 lbs. of Guthion @ \$8.02/lb. Mildew/Fertilizer/ May 5.0 ozs. of Rally @ \$5.20/oz. Cover Spray 2.0 gals. of 3-18-18 @ \$4.55/gal. Mildew Spray May 5.0 ozs. of Rally @ \$5.20/oz. Thinning Spray 6.6 ozs. of Accel @ \$12.58/oz.a May 5.0 ozs. of Rally @ \$5.20/oz. 5.0 lbs. of Solubor @ 80¢/lb. 0.5 gal. of Zinc 10% @ \$8.25/gal. Tree Training Tape & twine @ \$12.50/acre May 0.5 gal. of Roundup @ \$59.15/gal. Herbicide May Mildew/Cover Spray June 2.0 lbs. of Guthion @ \$8.02/lb. 5.0 ozs. of Rally @ \$5.20/oz. Herbicide June 0.5 gal. of Roundup @ \$59.15/gal. Tree Training Tape & twine @ \$12.50/acre July 6.0 lbs. of calcium chloride @ 52¢/lb. Calcium/Cover Spray July 2.0 lbs. of Guthion @ \$8.02/lb. 2.0 ozs. of Provado @ \$3.78/oz. 0.25 gal. of Sylgard @ \$98.90/gal. Herbicide 0.5 gal. of Roundup @ \$59.15/gal. July Calcium/Cover Spray 6.0 lbs. of calcium chloride @ 52¢/lb. August 2.0 lbs. of Guthion @ \$8.02/lb. 38.3 bins of apples picked @ \$8.00/bin Harvest September Haul Fruit 38.3 bins of apples hauled @ \$3.00/bin September Herbicide September 0.5 gal. of Roundup @ \$59.15/gal. Herbicide October 0.5 gal. of Roundup @ \$59.15/gal. Foliar Fertilizer October 5.0 gals of zinc sulfate @ \$1.50/gal. 5.0 lbs. of Solubor @ 80¢/lb. Gopher Control 1.0 lb. of Gopher Getter @ \$1.28/lb. Annual 5% variable cost Overhead Annual

<sup>a</sup>Accel may not be typically used in thinning Golden Delicious fruit, but was used at this site to achieve larger fruit size.

TABLE 3c3: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER CONVENTIONAL PRODUCTION PRACTICES - 1996.

VARIABLE COSTS  SUPERIOR OIL GAL. ZINC 10% GAL. MICROTHIOL LB. LORSBAN PINT ACCEL OZ. RALLY OZ. SOLUBOR LB. GUTHION LB. 3-18-18 GAL. ROUNDUP GAL. CALCIUM CHLORIDE LB. PROVADO OZ. SYLGARD GAL. ZINC SULFATE GAL. GOPHER GETTER LB. TAPE & TWINE ACRE	/TINITT	OII∆NTTTV	VALUE OR COST	FARM
VARIABLE COSTS SUPERIOR OIL GAL. ZINC 10% GAL.	\$ 2.60 8.25	1 50	 \$	
SUPERIOR OIL GAL. ZINC 10% GAL.	2.60 8.25	1 50		
ZINC 10% GAL.	8.25		3 90	
Dine io	0.25	1 00	8 25	
MTCROTHIOI. I.B	93	10.00	9 30	
I.ORSBAN PINT	6 19	4 00	24 76	
ACCEI. OZ	12 58	6.60	83 03	
DATIV 07	5 20	20.00	104.00	
COLIDOD ID	2.20	10.00	2 00	
CUTUTON I D	0 00	0.00	64 16	
3 10 10 CAT	0.02	2.00	04.10	
3-10-10 GAL.	4.33	2.00	147 00	
ROUNDUP GAL.	59.15	2.50	147.88	
CALCIUM CHLORIDE LB.	2 70	12.00	0.2 <del>4</del>	
PROVADO OZ.	3./8	2.00	7.50	
SYLGARD GAL.	98.90	.25	24./3	
ZINC SULFATE GAL.	1.50	5.00	7.50	
GOPHER GETTER LB.	1.28	1.00	1.28	
TAPE & TWINE ACRE	25.00	1.00	25.00	
RENT BEEHIVE HIVE	35.00	1.00	35.00	
PHEROMONE DISPENSERS DISP	.28	400.00	110.00	
CUSTOM PICKING BIN	8.00	38.30	306.40	
CUSTOM HAULING BIN	3.00	38.30	114.90	
GOPHER GETTER LB. TAPE & TWINE ACRE RENT BEEHIVE HIVE PHEROMONE DISPENSERS DISP CUSTOM PICKING BIN CUSTOM HAULING BIN IRR. CHG. & ELECT. ACRE 1 CASUAL LABOR HOUR LABOR (TRAC/MACH) HOUR TRACTOR REPAIR ACRE	50.00	1.00	150.00	
CASUAL LABOR HOUR	7.50	79.66	597.45	
LABOR(TRAC/MACH) HOUR	8.50	35.91	305.20	
TRACTOR REPAIR ACRE	33.03	1.00	33.03	
TRACTOR FUEL/LUBE ACRE MACHINERY REPAIRS ACRE 1 MACHINE FUEL/LUBE ACRE	39.88	1.00	39.88	
MACHINERY REPAIRS ACRE 1	29.14	1.00	129.14	
MACHINE FUEL/LUBE ACRE	27.99	1.00	27.99	
INTEREST ON OP. CAP. ACRE	66.66	1.00	66.66	
OVERHEAD ACRE 1	22.52	1.00	122.52	
TOTAL VARIABLE COST			2572.85	
FIXED COSTS	\$		\$	
FIXED COSTS TRACTOR DEPRECIATION ACRE	58 72	1 00	58 72	
TDACTOR DELICECTATION ACRE	64 41	1.00	64 41	
TRACTOR INTEREST ACRE TRACTOR INSURANCE ACRE TRACTOR TAXES ACRE	1 20	1.00	64.41 4.29	
TRACTOR INSURANCE ACRE	12 00	1.00	12.88	
MACUTAR DEDDECTATION ACRE 1	07 02	1.00	107 02	
MACHINE DEPRECIATION ACRE 1 MACHINE INTEREST ACRE 1	Q1 00	1 00	191.93	
	12.07	1.00	12.07	
	25.85	1.00		
	53.71	1.00	350.00	
	50.00			
	50.00	1.00	250.00	
INTEREST ON ESTAB. ACRE 10	72.20	1.00	1072.20	
TOTAL FIXED COST			2283.08	
TOTAL COST			4855.93	

TABLE 1c4: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER CONVENTIONAL PRODUCTION PRACTICES - 1997.

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									IABLE COS				
OPERATION	TOOLING		EAR		HOURS	TOTAL FIXED COST	FUEL, LUBE, & REPAIRS					TOTAL VARIABLE COST	TOTAL COST
						\$	\$	\$	\$	\$	\$	\$	\$
PRUNE	HAND LABOR 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER ONE BEEHIVE PER ACRE	FEB 1	997	.00	25.00	2.30		187.50	.00	.00		198.75	201.05
DORM. SPY + ZINC	52HP-WT, BLAST SPRAYER	MAR 1	997	.50	.60	8.38	4.78	5.25	.00	43.64	2.82	56.49	64.87
MILDEW SPRAY	52HP-WT, BLAST SPRAYER	APR 1	997	.50	.60	8.38	4.78	5.25					55.70
RENT BEEHIVE	ONE BEEHIVE PER ACRE 52HP-WT, 100 GAL SPRAYER	APR 1	997	.00	.00	.00	.00	.00		.00		36.58	36.58
HERBICIDE	52HP-WT, 100 GAL SPRAYER	APR I	997	.40		4.50	6.32	4.20	.00			41.90	46.40
FROST CONTROL	WIND MACHINE	APR I	991	.00		152.11	92.79	17.50				115.25	267.36
FROST CONTROL FROST CONTROL	FROST ALARM & THERMOMETERS UNDERTREE SPRINKLERS	APR 1 APR 1		.00	.00	2.97 74.90	.00 10.00	.00		.00		.00 30.04	2.97 104.94
IRRIGATE	SOLID SET UNDERTREE IRR SYSTEM			.00	.00	203.03	50.00		150.00	.00		209.00	412.03
IRRIGATE	4-WHEEL ATV W/ABOVE OPERATION			10.00	10.00	21.94	10.08	87.50	.00	.00		101.97	123.90
HANG DIGDENGEDG	HAND LADOD	OD 3 1	007	0.0	1.00	.00	.00	7.50	.00			122.79	122.79
MOW	HAND LABOR  52HP-WT, 9' ROTARY MOWER  52HP-WT, 100 GAL SPRAYER  52HP-WT, BLAST SPRAYER  52HP-WT, 9' ROTARY MOWER  52HP-WT, 100 GAL SPRAYER  52HP-WT, 9' ROTARY MOWER  HAND LABOR  52HP-WT, BLAST SPRAYER  52HP-WT, BOTARY MOWER  52HP-WT, FORKLIFT  CUSTOM HAULING  52HP-WT, 9' ROTARY MOWER  52HP-WT, 100 GAL SPRAYER  HAND LABOR  1/2 TON PICKIIP	MAY 1	997	.50	.55	4.95	2.74	4.81		.00		7.83	12.78
HERBICIDE	52HP-WT, 100 GAL SPRAYER	MAY 1	997	.40	.48	4.50	6.32	4.20		29.58		41.60	46.10
MILDEW/COVER SPY	52HP-WT, BLAST SPRAYER	MAY 1	997	.50	.60	8.38	4.78	5.25	.00	21.35	1.18	32.56	40.94
COVER SPRAY	52HP-WT, BLAST SPRAYER	MAY 1	997	.50		8.38	4.78	5.25	.00	6.50		17.15	25.53
FERT/MILDW/INSCT	52HP-WT, BLAST SPRAYER	MAY 1	997	.50		8.38	4.78	5.25	.00	60.23		72.89	81.27
COVER SPRAY	52HP-WT, BLAST SPRAYER	MAY 1	997	.50	.60	8.38	4.78	5.25	.00	77.09	3.27	90.39	98.77
THIN. SPRAY (2X)	52HP-WT, BLAST SPRAYER	MAY 1	997	.50	.60	8.38	4.78	5.25	.00			182.69	191.07
MILDEW SPRAY	52HP-WT, BLAST SPRAYER	MAY I	997	.50	.60	8.38	4.78	5.25	.00	9.30		20.06	28.44
MOW COVER SPRAY	52HP-WT, 9' ROTARY MOWER	JUN I	997	.50 .50	.55 .60	4.95 8.38	2.74 4.78	4.81 5.25	.00	.00 45.16		7.78 56.85	12.72 65.23
HERBICIDE	52DP-WI, BLASI SPRAILER	TITT 1	991	.40	.48	4.50	6.32	4.20	.00			41.00	45.50
MOW	52HP-WT, 100 GAL SPRAILER	.ттт. 1	997	.50	.55	4.95	2.74	4.81	.00	.00		7.72	12.67
TREE TRAINING	HAND LABOR	ли. 1	997	00	25.00	.00		187.50	.00	50.00		242.84	242.84
COVER SPRAY	52HP-WT, BLAST SPRAYER	JUL 1	997	.50	.60	8.38	4.78	5.25	.00	30.07		41.00	49.38
COVER SPRAY	52HP-WT, BLAST SPRAYER	AUG 1	997	.50	.60	8.38	4.78	5.25	.00	19.16		29.63	38.01
MOW	52HP-WT, 9' ROTARY MOWER	AUG 1	997	.50	.55	4.95	2.74	4.81	.00	.00	.11	7.66	12.61
HERBICIDE	52HP-WT, 100 GAL SPRAYER	AUG 1	997	.40	.48	4.50	6.32	4.20	.00	29.58	.60	40.70	45.20
HARVEST(62.5 BN)	PICKERS	SEP 1	997	.00	.00	13.27	.00		500.00	.00		503.75	517.02
HARVEST	52HP-WT, BACKFORK	SEP 1	997	12.50	13.75	81.43		120.31	.00	.00		164.60	246.02
CHECK BINS	CHECKER FOR PICKING CREW	SEP 1	997	.00	12.50	.00	.00	93.75	.00	.00		94.45	94.45
BIN HANDLING	52HP-WT, BIN TRAILER	SEP I	997	6.25	6.88	49.10	26.05	60.16	.00	.00		86.86	135.95
LOAD FRUIT HAUL FRUIT	52HP-WT, FORKLIFT	SEP I	997	2.50	2.75	26.07 .00	15.36	24.06	.00 187.50	.00		39.72 188.91	65.79 188.91
MOW	ESUD WT OF BOTARY MOWER	OCT 1	991	.50	.55	4.95	.00 2.74	4.81		.00		7.55	12.50
HERBICIDE	52HP-WT 100 GAL SPRAYER	OCT 1	997	.40	.48	4.50	6.32	4.20		85.92		96.44	100.94
GOPHER CONTROL	HAND LABOR	ANN 1	997	.00	2.00	.00	.00	15.00		1.28		17.01	17.01
MISC USE	1/2 TON PICKUP	ANN 1	997	7.14	.00	36.45	23.42	.00		.00		24.47	60.92
MISC USE	4-WHEEL ALL TERRAIN VEHICLE	ANN 1		5.70	.00	12.50	5.74	.00		.00		6.00	18.51
MISC USE	MACHINE SHED & SHOP	ANN 1	997	.00	.00	38.71	.71	.00	.00	.00			39.46
MISC USE	SHOP TOOLS	ANN 1		.00	.00	15.29	.00	.00	.00	.00			15.29
OVERHEAD	UTILITIES, LEGAL, ACCTNG, ETC.			.00	.00	.00	.00		156.55	.00	.00	156.55	156.55
MANAGEMENT	OPERATOR MANAGEMENT			.00	.00	250.00	.00	.00		.00	.00	.00	250.00
LAND COST	INTEREST ON LAND	ANN 1		.00		350.00	.00	.00				.00	350.00
TAXES	LAND	ANN 1			.00	64.19	.00	.00					64.19
INTEREST COST	INTEREST ON ESTABLISHMENT COST	ANN I	997	.00	.00	1343.26	.00	.00	.00	.00	.00	.00	1343.26
TOTAL PER ACRE				54.09	112.63	2876.93	375.11	903.59	1047.80	879.30	81.70	3287.50	6164.43

TABLE 2c4: MATERIALS AND SERVICES USED BY CONVENTIONAL PRACTICES - 1997.

\_\_\_\_\_\_ OPERATION MATERIAL AND/OR SERVICE 2.1 gals. of Superior Oil @ \$2.60/gal. Dormant Spray March + Zinc 0.5 gal. of Zinc 10% @ \$8.25/gal. 4.0 pints of Lorsban @ \$6.19/pt. 10.0 lbs. of Microthiol @ .93¢/lb. 10.0 lbs. of Microthiol @ .93¢/lb. Mildew Spray April 0.5 lb. of Procure @ \$51.90/lb. 1.0 beehive @ \$35.00/hive Rent Beehive April Herbicide 0.5 gal. of Roundup @ \$59.15/gal. April Frost Control April Irrigation charge & electricity @ \$18.75/acre Irrigate Season Irrigation charge & electricity @ \$150.00/acre Hang Dispensers Season 400 ties @ 27.5¢/tie Herbicide 0.5 gal. of Roundup @ \$59.15/gal. May Mildew/Cover Spray 4.2 ozs. of Rubigan @ \$2.25/oz. May 1.4 lbs. of DiPel @ \$8.50/lb. Cover Spray 1.05 pints of Lorsban @ \$6.19/pt. May Foliar Fertilizer/ 2.0 gals. of 3-18-18 @ \$4.55/gal. May Mildew/Insecticide 0.5 gal. of Zinc 10% @ \$8.25/gal. 5.0 lbs. of Solubor @ .80¢/lb. 5.0 ozs. of Rally @ \$5.20/oz. 2.0 lbs. of DiPel @ \$8.50/lb. 2.0 lbs. of Guthion @ \$8.02/lb. Cover Spray May 5.0 ozs. of Rally @ \$5.20/oz. 0.5 lb. of Procure @ \$51.90/lb. 2.0 gals. of 3-18-18 @ \$4.55/gal. Thinning Spray 6.6 ozs. of Accel @ \$12.58/oz.a May 6.6 ozs. of Accel @ \$12.58/oz.a Thinning Spray May 10.0 lbs. of Microthiol @ .93¢/lb. Mildew Spray May Cover Spray June 2.0 lbs. of Guthion @ \$8.02/lb. 6.0 lbs. of calcium chloride @ .52¢/lb. 5.0 ozs. of Rally @ \$5.20/oz. Herbicide July 0.5 gal. of Roundup @ \$59.15/gal. Tree Training July Tape & Twine @ \$50.00/acre 2.0 gals. of 3-18-18 @ \$4.55/gal. Cover Spray July 2.0 lbs. of Guthion @ \$8.02/lb. 6.0 lbs. of calcium chloride @ .52¢/lb. 1.0 pint of Trifol @ \$1.81/pt.

TABLE 2c4: MATERIALS AND SERVICES USED BY CONVENTIONAL PRACTICES - 1997. (Continued)

MATERIAL AND/OR SERVICE OPERATIONS -----August 2.0 lbs. of Guthion @ \$8.02/lb. 6.0 lbs. of calcium chloride @ .52¢/lb. Cover Spray Herbicide August 0.5 gal. of Roundup @ \$59.15/gal. Harvest September 62.5 bins of apples picked @ \$8.00/bin September 62.5 bins of apples @ \$3.00/bin Haul Fruit Herbicide October 0.5 gal. of Roundup @ \$59.15/gal. 2.5 lbs. of Solicam @ \$20.50/lb. 1.0 qt. of Simazine @ \$5.09/qt. Gopher Control Annual 1.0 lb. of Gopher Getter @ \$1.28/lb. 5% variable cost. Overhead Annual

<sup>&</sup>lt;sup>a</sup>Accel may not be typically used in thinning Golden Delicious fruit, but was used at this site to achieve larger fruit size.

TABLE 3c4: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER CONVENTIONAL PRODUCTION PRACTICES - 1997.

	UNIT	PRICE OR COST/UNIT	OUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS SUPERIOR OIL ZINC 10% LORSBAN MICROTHIOL		 \$		 \$	
SUPERIOR OIL	GAT.	2.60	2.10	5.46	
ZINC 10%	GAL	8 25	1 00	8 25	
LORSBAN	PINT	6 19	5.05	31 26	
MICROTHIOL	I.B	93	30.00	27 90	
MICROTHIOL ROUNDUP PROCURE	GAT.	59 15	2 50	147.88	
PROCURE	T.R	51 90	1 00	51 90	
ACCEL	OZ.	12 58	1.00 13.20 4.20	166 06	
RUBIGAN	OZ.	2 25	1 20	9.45	
DIPEL	TD.	Q 50	3.40	28 00	
GUTHION	LB.	0.30	0 00	20.90 . 64 16	
GUITION	OZ.	0.UZ	8.00 15.00	70 00	
		5.∠∪	15.00	78.00	
3-18-18	GAL.	4.55	6.00	4.00	
SOLUBOR CALCIUM CHLORIDE	TB.	.80	5.00 18.00	4.00	
CALCIUM CHLORIDE	LB.	.52	18.00	9.36	
	PT.	1.81	1.00	1.81	
SOLICAM SIMAZINE	LB. QT.	20.50 5.09	2.50	51.25 5.09	
SIMAZINE	QT.	5.09	1.00	5.09	
GOPHER GETTER	LB.	1.28		1.28	
TAPE & TWINE	ACRE	50.00 35.00	1.00	50.00 35.00	
RENT BEEHIVE	HIVE	35.00	1.00	35.00	
PHEROMONE DISPENSERS	DISP	.28	400.00	110.00	
CUSTOM PICKING CUSTOM HAULING IRR CHG & ELECT	BIN	8.00	62.50 62.50	500.00	
CUSTOM HAULING	BIN	3.00	62.50	187.50	
IRR CHG & ELECT	ACRE	168.75	1.00	168.75	
CASUAL LABOR LABOR(TRAC/MACH) TRACTOR REPAIR	HOUR	7.50	65.50	491.25 412.34 46.88	
LABOR(TRAC/MACH)	HOUR	8.50	48.51	412.34	
TRACTOR REPAIR	ACRE	46.88	1.00	46.88	
TRACTOR FUEL/LUBE	ACRE	56.60	1.00	56.60	
MACHINERY REPAIRS	ACRE	180.86	1.00	180.86	
TRACTOR FUEL/LUBE MACHINERY REPAIRS MACHINE FUEL/LUBE	ACRE	90.78	1.00	90.78	
INTEREST ON OP. CAP.	ACRE	81.69	1.00	81.69	
OVERHEAD	ACRE	156.55	1.00	156.55	
- ,					
OTAL VARIABLE COST				3287.50	
IXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	83.33	1.00	83.33	
TRACTOR INTEREST	ACRE	91.41	1.00	91.41	
TRACTOR INTEREST TRACTOR INSURANCE	ACRE	6.09	1.00	91.41 6.09	
TRACTOR TAXES	ACRE	18.28	1.00		
MACHINE DEPRECIATION			1.00	291.38	
	ACRE			307.56	
MACHINE INTEREST				20.44	
LAND TAX - YR 4	ACRE ACRE	64.19	1 00	50.98 64.19	
LAND COST	ACRE	350.00	1 00	350.00	
			1.00		
MANAGEMENT INTEREST ON ESTAB.	ACKE	1242 26	1.00	250.00	
INTEREST ON ESTAB.	ACRE	1343.26	1.00	1343.26	
OTAL FIXED COST				2876.93	
OTAL COST				6164.43	

TABLE 1c5: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER CONVENTIONAL PRODUCTION PRACTICES - 1998.

					VARIABLE COST								
OPERATION	TOOLING	мтн у	EAR 1	MACH		TOTAL FIXED COST	FUEL, LUBE, &		SERVICE			TOTAL VARIABLE COST	TOTAL COST
		1	000	0.0	20.00	\$	\$	\$	\$	\$	\$	\$	\$
PRUNE	HAND LABOR	FEB 1 MAR 1		.00	30.00	2.76 8.38		225.00	.00	.00	13.50 2.82	238.50 56.49	241.26 64.87
MILDEW SPRAY	52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER	APR 1		.50 .50	.60	8.38	4.78 4.78	5.25 5.25		43.64 35.25		47.32	55.70
HERBICIDE	52HP-WT, 100 GAL SPRAYER	APR 1	998	.40	.48	4.50	6.32	4.20		29.58		41.90	46.40
RENT BEEHIVE	ONE BEEHIVE PER ACRE	APR 1 APR 1	998	.00	.00	.00	.00	.00		.00		36.58	36.58
FROST CONTROL	WIND MACHINE	APR 1	998	.00	2.00	152.11	92.79	17.50		.00		115.25	267.36
FROST CONTROL	FROST ALARM & THERMOMETERS	APR 1		.00	.00	2.97	.00	.00		.00		.00	2.97
FROST CONTROL	UNDERTREE SPRINKLERS	APR 1		.00	.00	74.90	10.00	.00		.00	1.29	30.04	104.94
IRRIGATE	SOLID SET UNDERTREE IRR SYSTEM	SEA 1	998	.00	.00	203.03	50.00	.00	150.00	.00	9.00	209.00	412.03
IRRIGATE	4-WHEEL ATV W/ABOVE OPERATION			10.00	10.00	21.94	10.08	87.50	.00	.00		101.97	123.90
	HAND LABOR	SEA 1		.00	1.00	.00	.00	7.50	.00		5.29	122.79	122.79
HERBICIDE	52HP-WT, 100 GAL SPRAYER	MAY 1		.40	.48	4.50	6.32	4.20		29.58	1.50	41.60	46.10
MOM	52HP-WT, 9' ROTARY MOWER	MAY 1	998	.50	.55	4.95	2.74	4.81		.00	.28	7.83	12.78
COVER SPRAY	52HP-WT, BLAST SPRAYER	MAY I	998	.50	.60	8.38	4.78	5.25		6.50	.62	17.15	25.53
MILDEW SPRAY	52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER	MAY 1	998	.50 .50	.60 .60	8.38 8.38	4.78 4.78	5.25 5.25	.00	9.30 166.06	.72 6.60	20.06 182.69	28.44 191.07
FFDT/MILDW/INCCT	52HP-WT, BLAST SPRAYER	MAV 1	990 998	.50	.60	8.38	4.78	5.25	.00	60.23	2.63	72.89	81.27
MOW MOW	52HP-WT 9' ROTARY MOWER	JUNI 1	998	.50	.55	4.95	2.74	4.81	.00	.00	.23	7.78	12.72
COVER SPRAY	52HP-WT, BLAST SPRAYER	JUN 1	998	.50	.60	8.38	4.78	5.25		45.16	1.66	56.85	65.23
HAND THINNING	HAND LABOR	JUN 1	998	.00	32.50	.00	.00	243.75		.00		251.06	251.06
MOW	52HP-WT, 9' ROTARY MOWER	JUL 1	998	.50	.55	4.95	2.74	4.81	.00	.00	.17	7.72	12.67
HERBICIDE	52HP-WT, 9' ROTARY MOWER 52HP-WT, BLAST SPRAYER HAND LABOR 52HP-WT, 9' ROTARY MOWER 52HP-WT, 9' ROTARY MOWER 52HP-WT, 100 GAL SPRAYER HAND LABOR 52HP-WT BLAST SPRAYER	JUL 1	998	.40	.48	4.50	6.32	4.20	.00	29.58	.90	41.00	45.50
TREE TRAINING	HAND LABOR	JUL 1	998	.00	25.00	.00		187.50		50.00		242.84	242.84
COVER SPRAY	52HP-WT, BLAST SPRAYER 52HP-WT, 9' ROTARY MOWER	оод т	,,,,	.50	.60	8.38	4.78	5.25		30.07	.90	41.00	49.38
MOW	52HP-WT, 9' ROTARY MOWER	AUG 1		.50	.55	4.95	2.74	4.81	.00	.00		7.66	12.61
HERBICIDE	52HP-WT, 100 GAL SPRAYER	AUG 1		.40	.48	4.50	6.32	4.20	.00	29.58	.60	40.70	45.20
HARVEST(27.2 BN) HARVEST(36.1 BN)	PICKERS	SEP 1	998	.00	.00	5.71 7.56	.00	.00		.00	3.67 2.98	493.27 400.08	498.98 407.64
HARVEST (30.1 BN)	EJUD WIL BYCKEODK	OEP 1	990	12.66	13.93	82.47		121.89	.00	.00		166.74	249.21
CHECK BINS	CHECKER FOR PICKING CREW	SEP 1	998	.00	12.66	.00	.00	94.95	.00	.00		95.66	95.66
BIN HANDLING	52HP-WT. BIN TRAILER	SEP 1	998	6.33	6.96	49.73	26.39	60.90	.00	.00		87.94	137.67
LOAD FRUIT	52HP-WT, FORKLIFT	SEP 1	998	2.53	2.79	26.39	15.55	24.41	.00	.00		40.26	66.64
HAUL FRUIT	PICKERS PICKERS 52HP-WT, BACKFORK CHECKER FOR PICKING CREW 52HP-WT, BIN TRAILER 52HP-WT, FORKLIFT CUSTOM HAULING 52HP-WT, 9' ROTARY MOWER 52HP-WT, 100 GAL SPRAYER HAND LABOR	SEP 1	998	.00	.00	.00	.00		189.90	.00		191.32	191.32
MOW	52HP-WT, 9' ROTARY MOWER	OCT 1	998	.50	.55	4.95	2.74	4.81	.00	.00	.00	7.55	12.50
HERBICIDE	52HP-WT, 100 GAL SPRAYER	OCT 1	998	.40	.48	4.50	6.32	4.20	.00	85.92	.00	96.44	100.94
00111211 001111102	111112 2112011			.00	2.00	.00	.00	15.00		1.28	.73	17.01	17.01
	1/2 TON PICKUP	ANN 1		7.14	.00	36.45	23.42	.00		.00		24.47	60.92
MISC USE	4-WHEEL ALL TERRAIN VEHICLE	ANN 1		5.70	.00	12.50	5.74	.00		.00		6.00	18.51
	MACHINE SHED & SHOP	ANN 1		.00	.00	38.71	.71	.00		.00		.75	39.46
MISC USE	SHOP TOOLS	ANN 1		.00	.00	15.29	.00	.00		.00		.00	15.29
	UTILITIES, LEGAL, ACCTNG, ETC.	ANN 1 ANN 1		.00	.00	.00 250.00	.00	.00	183.31	.00			183.31 250.00
	OPERATOR MANAGEMENT INTEREST ON LAND	ANN 1 ANN 1		.00	.00	350.00	.00	.00		.00		.00	350.00
	LAND	ANN 1		.00	.00	72.05	.00	.00		.00			72.05
INTEREST COST	INTEREST ON ESTABLISHMENT COST			.00		1627.22	.00	.00		.00		.00	1627.22
TOTAL PER ACRE						3146.05	361.84					3849.49	6995.54

TABLE 2c5: MATERIALS AND SERVICES USED BY CONVENTIONAL PRACTICES - 1998.

\_\_\_\_\_\_ OPERATION MATERIAL AND/OR SERVICE 2.1 gals. of Superior Oil @ \$2.60/gal. Dormant Spray March + Zinc 0.5 gal. of Zinc 10% @ \$8.25/gal. 4.0 pts. of Lorsban @ \$6.19/pt. 10.0 lbs. of Microthiol @ .93¢/lb. Mildew Spray 10.0 lbs. of Microthiol @ .93¢/lb. April 0.5 lb. of Procure @ \$51.90/lb. 0.5 gal. of Roundup @ \$59.15/gal. Herbicide April Rent Beehive 1.0 beehive @ \$35.00/hive April Frost Control April Irrigation charge & electricity @ \$18.75/acre Irrigate Season Irrigation charge & electricity @ \$150.00/acre Hang Dispensers Season 400 ties/acre @ 27.5¢/tie (\$110/acre) Herbicide 0.5 gal. of Roundup @ \$59.15/gal. May Cover Spray 1.05 pts. of Lorsban @ \$6.19/pt. May 10.0 lbs. of Microthiol @ .93¢/lb. Mildew Spray May 6.6 ozs. of Accel @ \$12.58/oz.a Thinning Spray May Thinning Spray 6.6 ozs. of Accel @ \$12.58/oz.a May Foliar Fertilizer/ 2.0 gals. of 3-18-18 @ \$4.55/gal. May Mildew/Insecticide 0.5 gal. of Zinc 10% @ \$8.25/gal. 5.0 lbs. of Solubor @ .80¢/lb. 5.0 ozs. of Rally @ \$5.20/oz. 2.0 lbs. of DiPel @ \$8.50/lb. Cover Spray 2.0 lbs. of Guthion @ \$8.02/lb. June 6.0 lbs. of calcium chloride @ .52¢/lb. 5.0 ozs. of Rally @ \$5.20/oz. Herbicide July 0.5 gal. of Roundup @ \$59.15/gal. Tree Training Tape & Twine @ \$50.00/acre July Cover Spray July 2.0 gals. of 3-18-18 @ \$4.55/gal. 2.0 lbs. of Guthion @ \$8.02/lb. 6.0 lbs. of calcium chloride @ .52¢/lb.1.0 pint of Trifol @ \$1.81/pt. Herbicide August 0.5 gal. of Roundup @ \$59.15/gal. Harvest September 27.2 bins of apples picked @ \$18.00/bin 36.1 bins of apples picked @ \$11.00/bin Harvest September Haul Fruit September 63.3 bins of apples @ \$3.00/bin

TABLE 2c5: MATERIALS AND SERVICES USED BY CONVENTIONAL PRACTICES - 1998. (Continued)

OPERATION

MATERIAL AND/OR SERVICE

Herbicide

October

0.5 gals. of Roundup @ \$59.15/gal.
2.5 lbs. of Solicam @ \$20.50/lb.
1.0 qt. of Simazine @ \$5.09/qt.

Gopher Control

Annual

1.0 lb. of Gopher Getter @ \$1.28/lb.

Overhead

Annual

5% variable cost.

<sup>&</sup>lt;sup>a</sup>Accel may not be typically used in thinning Golden Delicious fruit, but was used at this site to achieve larger fruit size.

TABLE 3c5: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER CONVENTIONAL PRODUCTION PRACTICES - 1998.

VARIABLE COSTS		UNIT	PRICE OR COST/UNIT		VALUE OR COST	YOUR FARM
SOLICAM LB. 20.50 2.50 51.25  SIMAZINE QT. 5.09 1.00 5.09  GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHIVE HIVE 35.00 1.00 35.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR(TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR REPAIR ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINER FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR INSURANCE ACRE 5.85 1.00 8.05  TRACTOR TAXES ACRE 175.66 1.00 17.56  MACHINE INTEREST ACRE 87.81 1.00 87.81  TRACTOR INSURANCE ACRE 5.85 1.00 87.81  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 283.48 1.00 283.48  LAND TAX - YR 5 ACRE 72.05 1.00 72.05  LAND COST ACRE 350.00 1.00 350.00  MANAGEMENT ACRE 350.00 1.00 250.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	VARIABLE COSTS		 \$		 \$	
SOLICAM LB. 20.50 2.50 51.25  SIMAZINE QT. 5.09 1.00 5.09  GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHIVE HIVE 35.00 1.00 35.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR(TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR REPAIR ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINER FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 175.66 1.00 17.56  MACHINE INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 72.05 1.00 72.05  LAND COST ACRE 350.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	SUPERIOR OIL	GAL.	2.60	2.10	5.46	
SOLICAM LB. 20.50 2.50 51.25  SIMAZINE QT. 5.09 1.00 5.09  GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHIVE HIVE 35.00 1.00 35.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR(TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR REPAIR ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINER FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 175.66 1.00 17.56  MACHINE INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 72.05 1.00 72.05  LAND COST ACRE 350.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	ZINC 10%	GAL.	8.25	1.00	8.25	
SOLICAM LB. 20.50 2.50 51.25  SIMAZINE QT. 5.09 1.00 5.09  GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHIVE HIVE 35.00 1.00 35.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR(TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR REPAIR ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINER FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 175.66 1.00 17.56  MACHINE INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 72.05 1.00 72.05  LAND COST ACRE 350.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	LORSBAN	PINT	6.19	5.05	31.26	
SOLICAM LB. 20.50 2.50 51.25  SIMAZINE QT. 5.09 1.00 5.09  GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHIVE HIVE 35.00 1.00 35.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR(TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR REPAIR ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINER FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 175.66 1.00 17.56  MACHINE INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 72.05 1.00 72.05  LAND COST ACRE 350.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	MICROTHIOL	LB.	.93	30.00	27.90	
SOLICAM LB. 20.50 2.50 51.25  SIMAZINE QT. 5.09 1.00 5.09  GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHIVE HIVE 35.00 1.00 35.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR(TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR REPAIR ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINER FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 175.66 1.00 17.56  MACHINE INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 72.05 1.00 72.05  LAND COST ACRE 350.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	ROUNDUP	GAL.	59.15	2.50	147.88	
SOLICAM LB. 20.50 2.50 51.25  SIMAZINE QT. 5.09 1.00 5.09  GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHIVE HIVE 35.00 1.00 35.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR(TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR REPAIR ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINER FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 175.66 1.00 17.56  MACHINE INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 72.05 1.00 72.05  LAND COST ACRE 350.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	PROCURE	LB.	51.90	.50	25.95	
SOLICAM LB. 20.50 2.50 51.25  SIMAZINE QT. 5.09 1.00 5.09  GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHIVE HIVE 35.00 1.00 35.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR(TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR REPAIR ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINER FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 175.66 1.00 17.56  MACHINE INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 72.05 1.00 72.05  LAND COST ACRE 350.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	ACCEL	OZ.	12.58	13.20	166.06	
SOLICAM LB. 20.50 2.50 51.25  SIMAZINE QT. 5.09 1.00 5.09  GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHIVE HIVE 35.00 1.00 35.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR(TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR REPAIR ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINER FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 175.66 1.00 17.56  MACHINE INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 72.05 1.00 72.05  LAND COST ACRE 350.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	3-18-18	GAL.	4.55	4.00	18.20	
SOLICAM LB. 20.50 2.50 51.25  SIMAZINE QT. 5.09 1.00 5.09  GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHIVE HIVE 35.00 1.00 35.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR(TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR REPAIR ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINER FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 175.66 1.00 17.56  MACHINE INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 72.05 1.00 72.05  LAND COST ACRE 350.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	SOLUBOR	LB.	.80	5.00	4.00	
SOLICAM LB. 20.50 2.50 51.25  SIMAZINE QT. 5.09 1.00 5.09  GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHIVE HIVE 35.00 1.00 35.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR(TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR REPAIR ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINER FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 175.66 1.00 17.56  MACHINE INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 72.05 1.00 72.05  LAND COST ACRE 350.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	RALLY	OZ.	5.20	10.00	52.00	
SOLICAM LB. 20.50 2.50 51.25  SIMAZINE QT. 5.09 1.00 5.09  GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHIVE HIVE 35.00 1.00 35.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR(TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINER YEPAIRS ACRE 171.66 1.00 171.66  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 87.81  TRACTOR INSURANCE ACRE 5.85 1.00 80.05  TRACTOR INSURANCE ACRE 5.85 1.00 87.81  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INSURANCE ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 72.05 1.00 72.05  LAND COST ACRE 350.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	DIPEL	LB.	8.50	2.00	17.00	
SOLICAM LB. 20.50 2.50 51.25  SIMAZINE QT. 5.09 1.00 5.09  GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHIVE HIVE 35.00 1.00 35.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR(TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR REPAIR ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINER FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 175.66 1.00 17.56  MACHINE INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 72.05 1.00 72.05  LAND COST ACRE 350.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	GUTHION	LB.	8.02	4.00	32.08	
SOLICAM LB. 20.50 2.50 51.25  SIMAZINE QT. 5.09 1.00 5.09  GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHIVE HIVE 35.00 1.00 35.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR(TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR REPAIR ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINER FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 175.66 1.00 17.56  MACHINE INTEREST ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 75.85 1.00 5.85  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 72.05 1.00 72.05  LAND COST ACRE 350.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	CALCIUM CHLORIDE	LB.	.52	12.00	6.24	
SOLICAM  SIMAZINE  QT. 5.09 1.00 5.09  GOPHER GETTER  LB. 1.28 1.00 1.28  RENT BEEHIVE  HIVE 35.00 1.00 35.00  TAPE & TWINE  PHEROMONE DISPENSERS DISP  CUSTOM PICKING  BIN 11.00 36.10 397.10  CUSTOM PICKING  BIN 18.00 27.20 489.60  CUSTOM HAULING  BIN 3.00 63.30 189.90  CUSTOM HAULING  BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75  CASUAL LABOR  HOUR 7.50 103.16 773.70  LABOR (TRAC/MACH)  HOUR 8.50 46.97 399.26  TRACTOR REPAIR  ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 45.03 1.00 54.37  MACHINERY REPAIRS ACRE 171.66 1.00 171.66  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD  TOTAL VARIABLE COST  S  TRACTOR INTEREST ACRE 87.81 1.00 89.33  OVERHEAD  TRACTOR INTEREST ACRE 87.81 1.00 89.33  OVERHEAD  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE DEPRECIATION ACRE 87.81 1.00 87.81  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE DEPRECIATION ACRE 87.81 1.00 88.05  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE DEPRECIATION ACRE 283.48 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 20.08 1.00 283.48  MACHINE INTEREST ACRE 302.06 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 72.05 1.00 72.05  LAND COST ACRE 350.00 1.00 350.00  MANAGEMENT ACRE 350.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	TRIFOL	PT.	1.81	1.00	1.81	
GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHLVE HIVE 35.00 1.00 35.00  TAPE & TWINE ACRE 50.00 1.00 50.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR (TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR REPAIR ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINERY REPAIRS ACRE 171.66 1.00 171.66  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 183.31  TOTAL VARIABLE COST  FIXED COSTS  TRACTOR INSURANCE ACRE 87.81 1.00 87.81  TRACTOR INSURANCE ACRE 5.85 1.00 5.85  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE DEPRECIATION ACRE 80.05 1.00 87.81  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE DEPRECIATION ACRE 283.48 1.00 283.48  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INSURANCE ACRE 20.08 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 350.00 1.00 350.00  MANAGEMENT ACRE 250.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	SOLICAM	LB.	20.50	2.50	51.25	
GOPHER GETTER LB. 1.28 1.00 1.28  RENT BEEHLVE HIVE 35.00 1.00 35.00  TAPE & TWINE ACRE 50.00 1.00 50.00  PHEROMONE DISPENSERS DISP .28 400.00 110.00  CUSTOM PICKING BIN 11.00 36.10 397.10  CUSTOM PICKING BIN 18.00 27.20 489.60  CUSTOM HAULING BIN 3.00 63.30 189.90  IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75  CASUAL LABOR HOUR 7.50 103.16 773.70  LABOR (TRAC/MACH) HOUR 8.50 46.97 399.26  TRACTOR REPAIR ACRE 45.03 1.00 45.03  TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37  MACHINERY REPAIRS ACRE 171.66 1.00 171.66  MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78  INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33  OVERHEAD ACRE 183.31 1.00 183.31  TOTAL VARIABLE COST  FIXED COSTS  TRACTOR INSURANCE ACRE 87.81 1.00 87.81  TRACTOR INSURANCE ACRE 5.85 1.00 5.85  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE DEPRECIATION ACRE 80.05 1.00 87.81  TRACTOR TAXES ACRE 17.56 1.00 17.56  MACHINE DEPRECIATION ACRE 283.48 1.00 283.48  MACHINE INSURANCE ACRE 283.48 1.00 283.48  MACHINE INSURANCE ACRE 20.08 1.00 302.06  MACHINE INSURANCE ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 49.88 1.00 49.88  LAND TAX - YR 5 ACRE 350.00 1.00 350.00  MANAGEMENT ACRE 250.00 1.00 350.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	SIMAZINE	OT.	5.09	1.00	5.09	
RENT BEEHIVE	GOPHER GETTER	ГВ.	1.28	1.00	1.28	
TAPE & TWINE ACRE 50.00 1.00 50.00 PHEROMONE DISPENSERS DISP .28 400.00 110.00 CUSTOM PICKING BIN 11.00 36.10 397.10 CUSTOM PICKING BIN 11.00 36.10 397.10 CUSTOM PICKING BIN 18.00 27.20 489.60 CUSTOM HAULING BIN 3.00 63.30 189.90 IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75 CASUAL LABOR HOUR 7.50 103.16 773.70 LABOR(TRAC/MACH) HOUR 8.50 46.97 399.26 TRACTOR REPAIR ACRE 45.03 1.00 45.03 TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37 MACHINERY REPAIRS ACRE 171.66 1.00 171.66 MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78 INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33 OVERHEAD ACRE 183.31 1.00 183.31 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INSURANCE ACRE 5.85 1.00 5.85 TRACTOR TAXES ACRE 17.56 1.00 17.56 MACHINE DEPRECIATION ACRE 83.48 1.00 283.48 MACHINE DEPRECIATION ACRE 283.48 1.00 283.48 MACHINE INTEREST ACRE 302.06 1.00 302.06 MACHINE INSURANCE ACRE 49.88 1.00 283.48 MACHINE INSURANCE ACRE 20.08 1.00 283.48 MACHINE INSURANCE ACRE 49.88 1.00 49.88 LAND TAX - YR 5 ACRE 72.05 1.00 72.05 LAND COST ACRE 350.00 1.00 250.00 INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	RENT BEEHIVE	HTVE	35 00	1 00	35 00	
IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75 CASUAL LABOR HOUR 7.50 103.16 773.70 LABOR (TRAC/MACH) HOUR 8.50 46.97 399.26 TRACTOR REPAIR ACRE 45.03 1.00 45.03 TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37 MACHINERY REPAIRS ACRE 171.66 1.00 171.66 MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78 INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33 OVERHEAD ACRE 183.31 1.00 183.31 TACTOR INTEREST ACRE 87.81 1.00 80.05 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INSURANCE ACRE 5.85 1.00 5.85 TRACTOR TAXES ACRE 17.56 1.00 17.56 MACHINE DEPRECIATION ACRE 283.48 1.00 283.48 MACHINE INTEREST ACRE 302.06 1.00 302.06 MACHINE INSURANCE ACRE 20.08 1.00 283.48 MACHINE INSURANCE ACRE 49.88 1.00 283.48 LAND TAX - YR 5 ACRE 49.88 1.00 49.88 LAND TAX - YR 5 ACRE 350.00 1.00 350.00 MANAGEMENT ACRE 250.00 1.00 350.00 INTEREST ACRE 350.00 1.00 350.00 INTEREST ACRE 250.00 1.00 250.00 INTEREST ACRE 360.00 1.00 250.00 INTEREST ACRE 350.00 1.00 250.00 INTEREST ACRE 250.00 1.00 250.00 INTEREST ACRE 350.00 1.00 250.0	TAPE & TWINE	ACRE	50.00	1.00	50.00	
IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75 CASUAL LABOR HOUR 7.50 103.16 773.70 LABOR (TRAC/MACH) HOUR 8.50 46.97 399.26 TRACTOR REPAIR ACRE 45.03 1.00 45.03 TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37 MACHINERY REPAIRS ACRE 171.66 1.00 171.66 MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78 INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33 OVERHEAD ACRE 183.31 1.00 183.31 TACTOR INTEREST ACRE 87.81 1.00 80.05 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INSURANCE ACRE 5.85 1.00 5.85 TRACTOR TAXES ACRE 17.56 1.00 17.56 MACHINE DEPRECIATION ACRE 283.48 1.00 283.48 MACHINE INTEREST ACRE 302.06 1.00 302.06 MACHINE INSURANCE ACRE 20.08 1.00 283.48 MACHINE INSURANCE ACRE 49.88 1.00 20.08 MACHINE INSURANCE ACRE 49.88 1.00 49.88 LAND TAX - YR 5 ACRE 49.88 1.00 49.88 LAND TAX - YR 5 ACRE 350.00 1.00 350.00 MANAGEMENT ACRE 250.00 1.00 350.00 INTEREST ACRE 350.00 1.00 350.00 INTEREST ACRE 250.00 1.00 250.00 INTEREST ACRE 360.00 INTEREST ACRE 350.00 1.00 250.00 INTEREST ACRE 250.00 1.00 250.00 INTEREST ACRE 360.00 INTEREST ACRE 350.00 1.00 250.00 INTEREST ACRE 250.00 1.00 250.00 INTEREST ACRE 350.00 1.00 250.00 INTEREST ACRE 360.00 INTEREST ACRE 360.00 INTEREST ACRE 350.00 1.00 250.00 INTERES	PHEROMONE DISPENSERS	DISP	.28	400.00	110.00	
IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75 CASUAL LABOR HOUR 7.50 103.16 773.70 LABOR (TRAC/MACH) HOUR 8.50 46.97 399.26 TRACTOR REPAIR ACRE 45.03 1.00 45.03 TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37 MACHINERY REPAIRS ACRE 171.66 1.00 171.66 MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78 INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33 OVERHEAD ACRE 183.31 1.00 183.31 TACTOR INTEREST ACRE 87.81 1.00 80.05 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INSURANCE ACRE 5.85 1.00 5.85 TRACTOR TAXES ACRE 17.56 1.00 17.56 MACHINE DEPRECIATION ACRE 283.48 1.00 283.48 MACHINE INTEREST ACRE 302.06 1.00 302.06 MACHINE INSURANCE ACRE 20.08 1.00 283.48 MACHINE INSURANCE ACRE 49.88 1.00 20.08 MACHINE INSURANCE ACRE 49.88 1.00 49.88 LAND TAX - YR 5 ACRE 49.88 1.00 49.88 LAND TAX - YR 5 ACRE 350.00 1.00 350.00 MANAGEMENT ACRE 250.00 1.00 350.00 INTEREST ACRE 350.00 1.00 350.00 INTEREST ACRE 250.00 1.00 250.00 INTEREST ACRE 360.00 INTEREST ACRE 350.00 1.00 250.00 INTEREST ACRE 250.00 1.00 250.00 INTEREST ACRE 360.00 INTEREST ACRE 350.00 1.00 250.00 INTEREST ACRE 250.00 1.00 250.00 INTEREST ACRE 350.00 1.00 250.00 INTEREST ACRE 360.00 INTEREST ACRE 360.00 INTEREST ACRE 350.00 1.00 250.00 INTERES	CUSTOM PICKING	BIN	11.00	36.10	397.10	
IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75 CASUAL LABOR HOUR 7.50 103.16 773.70 LABOR (TRAC/MACH) HOUR 8.50 46.97 399.26 TRACTOR REPAIR ACRE 45.03 1.00 45.03 TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37 MACHINERY REPAIRS ACRE 171.66 1.00 171.66 MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78 INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33 OVERHEAD ACRE 183.31 1.00 183.31 TACTOR INTEREST ACRE 87.81 1.00 80.05 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INSURANCE ACRE 5.85 1.00 5.85 TRACTOR TAXES ACRE 17.56 1.00 17.56 MACHINE DEPRECIATION ACRE 283.48 1.00 283.48 MACHINE INTEREST ACRE 302.06 1.00 302.06 MACHINE INSURANCE ACRE 20.08 1.00 283.48 MACHINE INSURANCE ACRE 49.88 1.00 20.08 MACHINE INSURANCE ACRE 49.88 1.00 49.88 LAND TAX - YR 5 ACRE 49.88 1.00 49.88 LAND TAX - YR 5 ACRE 350.00 1.00 350.00 MANAGEMENT ACRE 250.00 1.00 350.00 INTEREST ACRE 350.00 1.00 350.00 INTEREST ACRE 250.00 1.00 250.00 INTEREST ACRE 360.00 INTEREST ACRE 350.00 1.00 250.00 INTEREST ACRE 250.00 1.00 250.00 INTEREST ACRE 360.00 INTEREST ACRE 350.00 1.00 250.00 INTEREST ACRE 250.00 1.00 250.00 INTEREST ACRE 350.00 1.00 250.00 INTEREST ACRE 360.00 INTEREST ACRE 360.00 INTEREST ACRE 350.00 1.00 250.00 INTERES	CUSTOM PICKING	BIN	18.00	27.20	489.60	
IRR. CHG. & ELECT. ACRE 168.75 1.00 168.75 CASUAL LABOR HOUR 7.50 103.16 773.70 LABOR (TRAC/MACH) HOUR 8.50 46.97 399.26 TRACTOR REPAIR ACRE 45.03 1.00 45.03 TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37 MACHINERY REPAIRS ACRE 171.66 1.00 171.66 MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78 INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33 OVERHEAD ACRE 183.31 1.00 183.31 TACTOR INTEREST ACRE 87.81 1.00 80.05 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INSURANCE ACRE 5.85 1.00 5.85 TRACTOR TAXES ACRE 17.56 1.00 17.56 MACHINE DEPRECIATION ACRE 283.48 1.00 283.48 MACHINE INTEREST ACRE 302.06 1.00 302.06 MACHINE INSURANCE ACRE 20.08 1.00 283.48 MACHINE INSURANCE ACRE 49.88 1.00 20.08 MACHINE INSURANCE ACRE 49.88 1.00 49.88 LAND TAX - YR 5 ACRE 49.88 1.00 49.88 LAND TAX - YR 5 ACRE 350.00 1.00 350.00 MANAGEMENT ACRE 250.00 1.00 350.00 INTEREST ACRE 350.00 1.00 350.00 INTEREST ACRE 250.00 1.00 250.00 INTEREST ACRE 360.00 INTEREST ACRE 350.00 1.00 250.00 INTEREST ACRE 250.00 1.00 250.00 INTEREST ACRE 360.00 INTEREST ACRE 350.00 1.00 250.00 INTEREST ACRE 250.00 1.00 250.00 INTEREST ACRE 350.00 1.00 250.00 INTEREST ACRE 360.00 INTEREST ACRE 360.00 INTEREST ACRE 350.00 1.00 250.00 INTERES	CUSTOM HAULING	BIN	3.00	63.30	189.90	
CASUAL LABOR HOUR 7.50 103.16 773.70 LABOR (TRAC/MACH) HOUR 8.50 46.97 399.26 TRACTOR REPAIR ACRE 45.03 1.00 45.03 TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37 MACHINERY REPAIRS ACRE 171.66 1.00 171.66 MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78 INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33 OVERHEAD ACRE 183.31 1.00 183.31 TOTAL VARIABLE COST \$\$ \$\$ TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INSURANCE ACRE 5.85 1.00 5.85 TRACTOR TAXES ACRE 17.56 1.00 17.56 MACHINE DEPRECIATION ACRE 283.48 1.00 283.48 MACHINE INTEREST ACRE 302.06 1.00 302.06 MACHINE INSURANCE ACRE 20.08 1.00 283.48 MACHINE INSURANCE ACRE 20.08 1.00 20.08 MACHINE TAXES ACRE 49.88 1.00 49.88 LAND TAX - YR 5 ACRE 72.05 1.00 72.05 LAND COST ACRE 350.00 1.00 350.00 MANAGEMENT ACRE 250.00 1.00 350.00 MANAGEMENT ACRE 250.00 1.00 250.00 INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	TRR. CHG. & ELECT.	ACRE	168.75	1.00	168.75	
TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37 MACHINERY REPAIRS ACRE 171.66 1.00 171.66 MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78 INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33 OVERHEAD ACRE 183.31 1.00 183.31 TOTAL VARIABLE COST 3849.49 TOTAL VARIABLE COST \$  TRACTOR DEPRECIATION ACRE 80.05 1.00 80.05 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INSURANCE ACRE 5.85 1.00 5.85 TRACTOR TAXES ACRE 17.56 1.00 17.56 MACHINE DEPRECIATION ACRE 283.48 1.00 283.48 MACHINE INTEREST ACRE 302.06 1.00 302.06 MACHINE INSURANCE ACRE 20.08 1.00 20.08 MACHINE INSURANCE ACRE 20.08 1.00 20.08 MACHINE TAXES ACRE 49.88 1.00 49.88 LAND TAX - YR 5 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 1627.22 1.00 1627.22	CASUAL LABOR	HOUR	7.50	103.16	773.70	
TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37 MACHINERY REPAIRS ACRE 171.66 1.00 171.66 MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78 INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33 OVERHEAD ACRE 183.31 1.00 183.31 TOTAL VARIABLE COST 3849.49 TOTAL VARIABLE COST \$  TRACTOR DEPRECIATION ACRE 80.05 1.00 80.05 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INSURANCE ACRE 5.85 1.00 5.85 TRACTOR TAXES ACRE 17.56 1.00 17.56 MACHINE DEPRECIATION ACRE 283.48 1.00 283.48 MACHINE INTEREST ACRE 302.06 1.00 302.06 MACHINE INSURANCE ACRE 20.08 1.00 20.08 MACHINE INSURANCE ACRE 20.08 1.00 20.08 MACHINE TAXES ACRE 49.88 1.00 49.88 LAND TAX - YR 5 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 1627.22 1.00 1627.22	LABOR (TRAC/MACH)	HOUR	8.50	46.97	399.26	
TRACTOR FUEL/LUBE ACRE 54.37 1.00 54.37 MACHINERY REPAIRS ACRE 171.66 1.00 171.66 MACHINE FUEL/LUBE ACRE 90.78 1.00 90.78 INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33 OVERHEAD ACRE 183.31 1.00 183.31 TOTAL VARIABLE COST 3849.49 TOTAL VARIABLE COST \$  TRACTOR DEPRECIATION ACRE 80.05 1.00 80.05 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INSURANCE ACRE 5.85 1.00 5.85 TRACTOR TAXES ACRE 17.56 1.00 17.56 MACHINE DEPRECIATION ACRE 283.48 1.00 283.48 MACHINE INTEREST ACRE 302.06 1.00 302.06 MACHINE INSURANCE ACRE 20.08 1.00 20.08 MACHINE INSURANCE ACRE 20.08 1.00 20.08 MACHINE TAXES ACRE 49.88 1.00 49.88 LAND TAX - YR 5 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 1627.22 1.00 1627.22	TRACTOR REPAIR	ACRE	45.03	1.00	45.03	
INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33 OVERHEAD ACRE 183.31 1.00 183.31 TOTAL VARIABLE COST 3849.49  FIXED COSTS \$ \$ \$ \$ \$ \$ TRACTOR DEPRECIATION ACRE 80.05 1.00 80.05 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INSURANCE ACRE 5.85 1.00 5.85 TRACTOR TAXES ACRE 17.56 1.00 17.56 MACHINE DEPRECIATION ACRE 283.48 1.00 283.48 MACHINE INTEREST ACRE 302.06 1.00 302.06 MACHINE INSURANCE ACRE 20.08 1.00 20.08 MACHINE INSURANCE ACRE 20.08 1.00 20.08 MACHINE TAXES ACRE 49.88 1.00 49.88 LAND TAX - YR 5 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 1627.22 1.00 1627.22	TRACTOR FUEL/LUBE	ACRE	54.37	1.00	54.37	
INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33 OVERHEAD ACRE 183.31 1.00 183.31 TOTAL VARIABLE COST 3849.49  FIXED COSTS \$ \$ \$ \$ \$ \$ TRACTOR DEPRECIATION ACRE 80.05 1.00 80.05 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INSURANCE ACRE 5.85 1.00 5.85 TRACTOR TAXES ACRE 17.56 1.00 17.56 MACHINE DEPRECIATION ACRE 283.48 1.00 283.48 MACHINE INTEREST ACRE 302.06 1.00 302.06 MACHINE INSURANCE ACRE 20.08 1.00 20.08 MACHINE INSURANCE ACRE 20.08 1.00 20.08 MACHINE TAXES ACRE 49.88 1.00 49.88 LAND TAX - YR 5 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 1627.22 1.00 1627.22	MACHINERY REPAIRS	ACRE	171.66	1.00	171.66	
INTEREST ON OP. CAP. ACRE 89.33 1.00 89.33 OVERHEAD ACRE 183.31 1.00 183.31 TOTAL VARIABLE COST 3849.49  FIXED COSTS \$ \$ \$ \$ \$ \$ TRACTOR DEPRECIATION ACRE 80.05 1.00 80.05 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INSURANCE ACRE 5.85 1.00 5.85 TRACTOR TAXES ACRE 17.56 1.00 17.56 MACHINE DEPRECIATION ACRE 283.48 1.00 283.48 MACHINE INTEREST ACRE 302.06 1.00 302.06 MACHINE INSURANCE ACRE 20.08 1.00 20.08 MACHINE INSURANCE ACRE 20.08 1.00 20.08 MACHINE TAXES ACRE 49.88 1.00 49.88 LAND TAX - YR 5 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 1627.22 1.00 1627.22	MACHINE FUEL/LUBE	ACRE	90.78	1.00	90.78	
OVERHEAD         ACRE         183.31         1.00         183.31           TOTAL VARIABLE COST         3849.49           FIXED COSTS         \$         \$           TRACTOR DEPRECIATION ACRE         80.05         1.00         80.05           TRACTOR INTEREST         ACRE         87.81         1.00         87.81           TRACTOR INSURANCE         ACRE         5.85         1.00         5.85           TRACTOR TAXES         ACRE         17.56         1.00         17.56           MACHINE DEPRECIATION ACRE         283.48         1.00         283.48           MACHINE INTEREST         ACRE         302.06         1.00         302.06           MACHINE INSURANCE         ACRE         20.08         1.00         20.08           MACHINE TAXES         ACRE         49.88         1.00         49.88           LAND TAX - YR 5         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         1627.22         1.00         1627.22	INTEREST ON OP. CAP.	ACRE	89.33	1.00	89.33	
### TOTAL VARIABLE COST    \$   \$   \$     TRACTOR DEPRECIATION   ACRE   80.05   1.00   80.05     TRACTOR INTEREST   ACRE   87.81   1.00   87.81     TRACTOR INSURANCE   ACRE   5.85   1.00   5.85     TRACTOR TAXES   ACRE   17.56   1.00   17.56     MACHINE DEPRECIATION   ACRE   283.48   1.00   283.48     MACHINE INTEREST   ACRE   302.06   1.00   302.06     MACHINE INSURANCE   ACRE   20.08   1.00   20.08     MACHINE TAXES   ACRE   49.88   1.00   49.88     LAND TAX - YR 5   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   1627.22   1.00   1627.22	OVERHEAD	ACRE	183.31	1.00	183.31	
FIXED COSTS \$ \$ \$ TRACTOR DEPRECIATION ACRE 80.05 1.00 80.05 TRACTOR INTEREST ACRE 87.81 1.00 87.81 TRACTOR INSURANCE ACRE 5.85 1.00 5.85 TRACTOR TAXES ACRE 17.56 1.00 17.56 MACHINE DEPRECIATION ACRE 283.48 1.00 283.48 MACHINE INTEREST ACRE 302.06 1.00 302.06 MACHINE INSURANCE ACRE 20.08 1.00 20.08 MACHINE TAXES ACRE 49.88 1.00 49.88 LAND TAX - YR 5 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 1627.22 1.00 1627.22	0 / 21112112					
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TRACTOR DEPRECIATION ACRE 80.05 1.00 80.05	FIXED COSTS		Ċ		¢	
TRACTOR INTEREST ACRE 87.81 1.00 87.81	TRACTOR DEPRECTATION	ACBE	ຊ <b>ດິ</b> ດ5	1 00	<u>8</u> ດິດ5	
TRACTOR INSURANCE ACRE 5.85 1.00 5.85 TRACTOR TAXES ACRE 17.56 1.00 17.56 MACHINE DEPRECIATION ACRE 283.48 1.00 283.48 MACHINE INTEREST ACRE 302.06 1.00 302.06 MACHINE INSURANCE ACRE 20.08 1.00 20.08 MACHINE TAXES ACRE 49.88 1.00 49.88 LAND TAX - YR 5 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 1627.22 1.00 1627.22	TRACTOR INTEREST	ACRE	87 81	1 00	87 81	
TRACTOR TAXES ACRE 17.56 1.00 17.56	TRACTOR INSIDANCE	ACRE	5 85	1 00	5 85	
MACHINE DEPRECIATION       ACRE       283.48       1.00       283.48						
MACHINE INTEREST       ACRE       302.06       1.00       302.06					283 48	
MACHINE INSURANCE       ACRE       20.08       1.00       20.08						
MACHINE TAXES       ACRE       49.88       1.00       49.88          LAND TAX - YR 5       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       1627.22       1.00       1627.22	MACHINE INTEREST		20 08			
LAND TAX - YR 5 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 1627.22 1.00 1627.22					40.00 40 QQ	
LAND COST ACRE 350.00 1.00 350.00  MANAGEMENT ACRE 250.00 1.00 250.00  INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	TAND TAX - VP 5	ACKE	79.00	1 00	72.00	
MANAGEMENT ACRE 250.00 1.00 250.00 INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	LAND COST	ACKE	350 00	1 00	350 OO	
INTEREST ON ESTAB. ACRE 1627.22 1.00 1627.22	MANAGEMENT	ACKE	250.00	1 00		
INTEREST ON ESTAD. ACRE 102/.22 1.00 102/.22	LMLEBEGL ∪N EGLYD HVIVQEHENT	ACVE	1627 22	1 00	1627 22	
	INTEREST ON ESTAB.	ACKE	1027.22	1.00		
TOTAL FIXED COST 3146.05	TOTAL FIXED COST				3146.05	
TOTAL COST 6995.54	TOTAL COST				6995.54	

TABLE 1c6: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER CONVENTIONAL PRODUCTION PRACTICES - 1999.

UNDER CONVENTIONAL INODUCTION INACTICED 1999.

			VARIABLE COST									
					TOTAL	FUEL,					TOTAL	
			MACH	LABOR	FIXED	LUBE, &					VARIABLE	TOTAL
OPERATION	TOOLING	MTH YEAR	HOURS	HOURS	COST	REPAIRS	LABOR	SERVICE	MATER.	INTER.	COST	COST
					\$	 \$	\$	 \$	\$	\$	\$	\$
PRUNE	HAND LABOR	FEB 1999	.00	30.00	ž 2.76		225.00		.00			241.26
	52HP-WT, BLAST SPRAYER	MAR 1999	.50		8.38		5.25		103.47	5.96	119.46	127.84
MILDEW/FOLIAR	52HP-WT, BLAST SPRAYER	APR 1999	.50	.60	8.38	4.78	5.25	.00	44.66	2.46	57.16	65.54
HERBICIDE	52HP-WT, 100 GAL SPRAYER	APR 1999	.40		4.50	6.32	4.20		29.58	1.80	41.90	46.40
RENT BEEHIVE	ONE BEEHIVE PER ACRE	APR 1999	.00	.00	.00	.00	.00	35.00	.00	1.58	36.58	36.58
FROST CONTROL	WIND MACHINE	APR 1999	.00	2.00	152.11	92.79	17.50	.00	.00	4.96	115.25	267.36
FROST CONTROL	FROST ALARM & THERMOMETERS	APR 1999	.00	.00	2.97	.00	.00	.00	.00	.00	.00	2.97
FROST CONTROL	UNDERTREE SPRINKLERS	APR 1999	.00	.00	74.90		.00		.00		30.04	104.94
IRRIGATE	SOLID SET UNDERTREE IRR SYSTEM		.00	.00	203.03	50.00	.00		.00		209.00	412.03
IRRIGATE	4-WHEEL ATV W/ABOVE OPERATION	SEA 1999	10.00		21.94	10.08	87.50		.00	4.39	101.97	123.90
HANG DISPENSERS	HAND LABOR	SEA 1999	.00	1.00	.00		7.50		110.00	5.29	122.79	122.79
HERBICIDE	52HP-WT, 100 GAL SPRAYER	MAY 1999	.40	.48	4.50		4.20		29.58	1.50	41.60	46.10
MOW	52HP-WT, 9' ROTARY MOWER	MAY 1999	.50	.55	4.95		4.81		.00	.28	7.83	12.78
COVER SPRAY	52HP-WT, BLAST SPRAYER	MAY 1999	.50		8.38		5.25		22.11	1.21	33.35	41.73
FOLIAR SPRAY	52HP-WT, BLAST SPRAYER	MAY 1999	.50		8.38		5.25	.00	15.80	.97	26.80	35.18
		MAY 1999	.50		8.38		5.25	.00	166.06	6.60	182.69	191.07
	52HP-WT, BLAST SPRAYER	MAY 1999	.50		8.38		5.25		40.42		52.35	60.73
MOW	52HP-WT, 9' ROTARY MOWER	JUN 1999	.50		4.95		4.81		.00	.23	7.78	12.72
HAND THINNING	HAND LABOR	JUN 1999	.00		.00	.00	243.75	.00	.00	7.31	251.06	251.06
COVER SPRAY MOW	52HP-WT, BLAST SPRAYER 52HP-WT, 9' ROTARY MOWER	JUN 1999 JUL 1999	.50 .50	.60 .55	8.38 4.95		5.25 4.81	.00	36.44 .00	1.39 .17	47.86 7.72	56.24 12.67
MOW HERBICIDE	52HP-WT, 9° ROTART MOWER 52HP-WT, 100 GAL SPRAYER	JUL 1999	.40	.48	4.50		4.01		34.57	1.01	46.11	50.61
TREE TRAINING	HAND LABOR	JUL 1999	.00		.00		187.50		50.00	5.34	242.84	242.84
COVER SPRAY	52HP-WT, BLAST SPRAYER	JUL 1999	.50		8.38		5.25	.00	61.04	1.60	72.67	81.05
MOW	52HP-WT, 9' ROTARY MOWER	AUG 1999	.50		4.95		4.81		.00		7.66	12.61
HERBICIDE	52HP-WT, 100 GAL SPRAYER	AUG 1999	.40		4.50		4.20	.00	29.58	.60	40.70	45.20
HARVEST(7.7 BIN)		SEP 1999	.00	.00	1.46	.00	.00		.00	.64	85.34	86.80
HARVEST(62.5 BN)	PICKERS	SEP 1999	.00		11.81	.00		1125.00	.00	8.44		1145.25
HARVEST	PICKERS 52HP-WT, BACKFORK CHECKER FOR PICKING CREW	SEP 1999	14.04		91.46		135.10		.00		184.84	276.30
CHECK BINS	CHECKER FOR PICKING CREW	SEP 1999	.00	14.04	.00		105.30	.00	.00	.79	106.09	106.09
BIN HANDLING	52HP-WT, BIN TRAILER	SEP 1999	7.02	7.72	55.15		67.55	.00	.00		97.54	152.68
LOAD FRUIT	52HP-WT, FORKLIFT	SEP 1999	2.81	3.09	29.31	17.27	27.04	.00	.00	.33	44.64	73.94
HAUL FRUIT	CUSTOM HAULING	SEP 1999	.00	.00	.00	.00	.00	210.60	.00	1.58	212.18	212.18
MOW	52HP-WT, 9' ROTARY MOWER	OCT 1999	.50	.55	4.95	2.74	4.81	.00	.00	.00	7.55	12.50
HERBICIDE	52HP-WT, 100 GAL SPRAYER	OCT 1999	.40	.48	4.50		4.20	.00	85.92	.00	96.44	100.94
GOPHER CONTROL	HAND LABOR	ANN 1999	.00	2.00	.00	.00	15.00	.00	1.28	.73	17.01	17.01
MISC USE	1/2 TON PICKUP	ANN 1999	7.14	.00	36.45	23.42	.00		.00		24.47	60.92
MISC USE	4-WHEEL ALL TERRAIN VEHICLE	ANN 1999	5.70	.00	12.50	5.74	.00		.00	.26	6.00	18.51
MISC USE	MACHINE SHED & SHOP	ANN 1999	.00		38.71	.71	.00		.00		.75	39.46
MISC USE	SHOP TOOLS	ANN 1999	.00		15.29		.00		.00			15.29
LAND COST	INTEREST ON LAND	ANN 1999	.00		350.00		.00		.00	.00	.00	350.00
OVERHEAD	UTILITIES, LEGAL, ACCTNG, ETC.		.00		.00		.00		.00	.00		207.90
MANAGEMENT	OPERATOR MANAGEMENT	ANN 1999	.00		250.00		.00		.00			250.00
TAXES	LAND	ANN 1999	.00		98.25		.00		.00		.00	98.25
INTEREST COST	INTEREST ON ESTABLISHMENT COST	ANN 1999	.00	.00	1930.15	.00	.00	.00	.00	.00	.00	1930.15
TOTAL PER ACRE			55.21	152.74	3492.51	371.19	1100.50	1937.25	860.51	96.42	4365.87	7858.38

TABLE 2c6: MATERIALS AND SERVICES USED BY CONVENTIONAL PRACTICES - 1999.

OPERATION		MATERIAL AND/OR SERVICE
Dormant Spray + Zinc	March	4.0 gals. of Superior Oil @ \$2.60/gal. 1.0 gals. of Zinc 10% @ \$8.25/gal. 8.0 pts. of Lorsban @ \$6.19/pt. 5.0 ozs. of Rally @ \$5.20/oz. 10.0 lbs. of Microthiol @ .93¢/lb.
Foliar Fertilizer/ Mildew Spray	April	0.5 gal. of Zinc 10% @ \$8.25/gal. 5.0 lbs. of Solubor @ 80¢/lb. 5.0 ozs. of Rally @ \$5.20/oz. 8.0 lbs. of urea @ 18¢/lb. 2.0 gals of 3-18-18 @ \$4.55/gal.
Herbicide	April	0.5 gal. of Roundup @ \$59.15/gal.
Rent Beehive	April	1.0 beehive @ \$35.00/hive
Frost Control	April	Irrigation charge & electricity @ \$18.75/acre
Irrigate	Season	Irrigation charge & electricity @ \$150.00/acre
Hang Dispensers	Season	400 ties/acre @ 27.5¢/tie (\$110/acre)
Herbicide	May	0.5 gal. of Roundup @ \$59.15/gal.
Cover Spray	May	2.0 lbs. of Guthion @ \$8.02.lb. 1.5 pints of Sevin @ \$4.05/pt.
Foliar Spray	May	4.0 gals. of lime sulfur @ \$3.95/gal.
Thinning Spray	May	6.6 ozs. of Accel @ \$12.58/oz.ª
Thinning Spray	May	6.6 ozs. of Accel @ \$12.58/oz.ª
Insecticide	May	1.5 gals. of Captan 4L @ \$26.95/gal.
Cover Spray	June	8.0 ozs. of Provado @ \$3.78/gal. 6.0 lbs. of calcium chloride @ .52¢/lb. 4.0 ozs. of Sylgard @ 77¢/oz.
Herbicide	July	0.5 gal. of Roundup @ \$59.15/gal. 20 ozs. of R-11 @ 12¢/gal. 20 ozs. of Cayuse @ 13¢/oz.
Tree Training	July	Tape & Twine @ \$50.00/acre
Cover Spray	July	6.0 ozs. of Success @ \$6.21/oz. 2.0 lbs. of Guthion @ \$8.02/lb. 6.0 lbs. of calcium chloride @ .52¢/lb. 6.0 ozs. of Sylgard @ 77¢/oz.
Herbicide	August	0.5 gal. of Roundup @ \$59.15/gal.
Harvest	September	7.7 bins of apples picked @ \$11.00/bin
Harvest	September	62.5 bins of apples picked @ \$18.00/bin

TABLE 2c6: MATERIALS AND SERVICES USED BY CONVENTIONAL PRACTICES - 1999. (Continued)

OPERATION

MATERIAL AND/OR SERVICE

Haul Fruit

September 70.2 bins of apples @ \$3.00/bin

Herbicide

October 0.5 gal. of Roundup @ \$59.15/gal.
2.5 lbs. of Solicam @ \$20.50/lb.
1.0 qt. of Simazine @ \$5.09/qt.

Gopher Control Annual 1.0 lb. of Gopher Getter @ \$1.28/lb.

Overhead Annual 5% variable cost.

<sup>&</sup>lt;sup>a</sup>Accel may not be typically used in thinning Golden Delicious fruit, but was used at this site to achieve larger fruit size.

TABLE 3c6: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER CONVENTIONAL PRODUCTION PRACTICES - 1999.

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS SUPERIOR OIL		\$		\$	
SUPERIOR OIL	GAL.	2.60	4.00	10.40	
ZINC 10%	GAL.	8.25	1.50	12.38	
SUPERIOR OIL ZINC 10% LORSBAN MICROTHIOL RALLY ROUNDUP SOLUBOR UREA 3-18-18 ACCEL GUTHION	PINT	6.19	8.00	49.52	
MICROTHIOL	LB.	.93	10.00	9.30	
RALLY	OZ.	5.20	10.00	52.00	
ROUNDUP	GAL.	59.15	2.50	147.88	
SOLUBOR	LB.	.80	5.00	4.00	
UREA	LB.	.18	8.00	1.44	
3-18-18	GAL.	4.55	2.00	9.10	
ACCEL	OZ.	12.58	13.20	166.06	
GUTHION SEVIN CAPTAN 4L	LB.	8.02	4.00	32.08	
SEVIN	PINT	4.05	1.50	6.07	
CAPTAN 4L	GAL.	26.95	1.50	40.42	
PROVADO	OZ.	3.78	8.00	30.24	
CALCIUM CHLORIDE	LB.	.52	12.00	6.24	
SYLGARD	OZ.	.77	10.00	7.70	
SUCCESS	OZ.	6.21	6.00	37.26	
PROVADO CALCIUM CHLORIDE SYLGARD SUCCESS R-11 CAYUSE SOLICAM SIMAZINE GOPHER GETTER RENT BEEHIVE	OZ.	.12	20.00	2.40	
CAYUSE	OZ.	.13	20.00	2.60	
SOLICAM	LB.	20.50	2.50	51.25	
SIMAZINE	QT.	5.09	1.00	5.09	
GOPHER GETTER	LB.	1.28	1.00	1.28	
RENT BEEHIVE TAPE & TWINE PHEROMONE DISPENSERS IRR. CHG. & ELECT.	HIVE	35.00	1.00	35.00	
TAPE & TWINE	ACRE	50.00	1.00	50.00	
PHEROMONE DISPENSERS	DISP	.28	400.00	110.00	
IRR. CHG. & ELECT.	ACRE	168.75	1.00	168.75	
CUSTOM PICKING CUSTOM PICKING	BIN	11.00	7.70	84.70	
CUSTOM PICKING	BIN	18.00	62.50	1125.00	
CUSTOM HAULING	BIN	3.00	70.20	210.60	
CASUAL LABOR	HOUR	7.50	104.54	784.05	
CUSTOM HAULING CASUAL LABOR LABOR(TRAC/MACH)	HOUR	8.50	49.62	421.75	
TRACTOR REDATR	$\Delta CEE$	48 55	1 00	48 55	
TRACTOR FUEL/LUBE	ACRE	58.63	1.00	58.63	
MACHINERY REPAIRS	ACRE	173.22	1.00	173.22	
MACHINE FUEL/LUBE	ACRE	90.78	1.00	90.78	
INTEREST ON OP. CAP.	ACRE	96.42	1.00	96.42	
TRACTOR FUEL/LUBE MACHINERY REPAIRS MACHINE FUEL/LUBE INTEREST ON OP. CAP. OVERHEAD	ACRE	207.90	1.00	207.90	
TOTAL VARIABLE COST				4365.87	
FIXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	86.32	1.00		
TRACTOR INTEREST	ACRE	94.68	1.00	94.68	
TRACTOR INSURANCE	ACRE	6 31	1 00	6 31	
TRACTOR TAXES	ACRE	18.94	1.00	18.94	
TRACTOR TAXES MACHINE DEPRECIATION MACHINE INTEREST	ACRE	284.63	1.00	284.63	
MACHINE INTEREST	ACRE	303.02	1.00	303.02	
MACHINE INSURANCE	ACRE	20.14	1.00	20.14	
MACHINE INSURANCE MACHINE TAXES LAND TAX - MATURE	ACRE	50.07	1.00	50.07	
LAND TAX - MATURE	ACRE	98.25	1.00	98.25	
LAND COST	ACRE	350.00	1.00	350.00	
MANAGEMENT	ACRE	250.00	1.00	250.00	
MANAGEMENT INTEREST ON ESTAB.	ACRE	1930.15	1.00	1930.15	
FOTAL FIXED COST				3492.51	

Table 4c. Machinery and Building Complement

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	
Trailer	2,000	20	500	100	100	
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 5c: HOURLY AND PER ACRE MACHINERY COSTS

MACHINERY	PURCHASE PRICE	YEARS TO TRADE	_	DEPREC- IATION	INTER- EST	INSUR- ANCE	TAXES	HOUSING	TOTAL FIXED COST	REPAIR	FUEL AND LUBE	TOTAL VARIABLE COST	TOTAL COST
	\$							COST F	ER HOUR-				
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 BLAST 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
TRAILER	2,000.00	20	100	.75	1.13	.08	.23	.00	2.18	1.00	.00	1.00	3.18
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
								COST F	ER ACRE-				
MACHINE SHED & SHO	P 30,000.00	30	-	14.29	19.29	1.29	3.86	.00	38.71	.71	.00	.71	39.43
SHOP TOOLS	10,000.00	20	-	7.14	6.43	.43	1.29	.00	15.29	.00	.00	.00	15.29
WIND MACHINE	16,000.00	30	_	42.67	86.40	5.76	17.28	.00	152.11	30.00	62.79	92.79	244.90
ALARM & THEMOM.	205.00	10	_	2.05	.92	.00	.00	.00	2.97	.00	.00	.00	2.97
PUMP & MAINLINES	1,000.00	30	-	33.33	45.00	3.00	9.00	.00	90.33	20.00	.00	20.00	110.33
IRRIGATION SYSTEM	1,150.00	20	_	57.50	51.75	3.45	.00	.00	112.70	30.00	.00	30.00	142.70
HOLDING POND	7,000.00	20	-	35.00	31.50	2.10	6.30	.00	74.90	10.00	.00	10.00	84.90

## Appendix II

Cost of Establishing a High Density

Golden Delicious Apple Orchard

Using Integrated Production Practices

TABLE 1i1: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER INTEGRATED PRODUCTION PRACTICES - 1994.

					VARIABLE COST							
OPERATION	TOOLING		R HOURS	LABOR HOURS	TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.	TOTAL VARIABLE COST	TOTAL COST
					\$	\$	\$	\$	\$	\$	\$	\$
SOIL SAMPLE	CUSTOM HIRE	FEB 199	4 .00	.00			.00			.72	12.72	12.72
RIP LAND		FEB 199	4 .00	.00	.00	.00	.00	100.00	.00	6.00	106.00	106.00
CLEAN UP & DISK	CUSTOM HIRE	FEB 199			.00			150.00		9.00	159.00	159.00
LAYOUT & STAKE	HAND LABOR	FEB 199	4 .00	4.00	.00	.00	30.00	.00	5.00	2.10	37.10	37.10
FERTILIZE	52HP-WT, TRAILER W/HAND LABOR	MAR 199	4 2.00	6.30	17.09	8.62	49.87	.00	51.43	5.77	115.69	132.79
FERTILIZE	52HP-WT, TRAILER W/HAND LABOR	MAR 199	4 2.00	6.30	17.09	8.62	49.87	.00	35.00	4.91	98.41	115.50
PLANT TREES	CUSTOM PLANTED 52HP-WT, ROTOTILLER 52HP-WT, RENTED SEEDER	MAR 199	4 .00	.00	.00	.00	.00	363.20	3632.00	209.75	4204.95	4204.95
COVER CROP PREP	52HP-WT, ROTOTILLER	MAR 199			24.84	17.94	24.06	.00		2.21	44.21	69.05
SEED COVER CROP	52HP-WT, RENTED SEEDER	MAR 199			7.01	3.64	10.59	10.00	18.75	2.26	45.24	52.25
PRUNE	HAND LABOR (1 PERSON)	MAR 199	4 .00	1.00	.09	.00	7.50	.00	.00	.39	7.89	7.99
APPLY MULCH	52HP-WT, TRAILER W/HAND LABOR	MAR 199	4 2.00	6.30	17.09	8.62	49.87	.00	1025.00	56.88	1140.38	1157.47
MILDEW SPRAY	52HP-WT, BLAST SPRAYER	APR 199		.60	8.38	4.78	5.25	.00	26.00	1.62	37.65	46.03
TREE TRAINING	HAND LABOR	SEA 199			.00		150.00	.00		7.83	181.83	181.83
IRRIGATE	SOLID SET UNDERTREE IRR SYSTEM	SEA 199	4 .00	.00	203.03	50.00	.00	150.00	.00	9.00	209.00	412.03
IRRIGATE	4-WHEEL ATV W/ABOVE OPERATION	SEA 199	4 10.00	10.00	21.94	10.08	87.50	.00	.00	4.39	101.97	123.90
INSTALL TRELLIS	HAND LABOR	MAY 199	.00	60.00	.00	.00	468.75	.00		41.95	1160.70	1160.70
TIE LEADERS	HAND LABOR	MAY 199	.00	15.00	.00	.00	.00	.00	6.00	4.44	122.94	122.94
MILDEW SPRAY	52HP-WT, BLAST SPRAYER	MAY 199	4 .50		8.38	4.78	5.25	.00	25.95	1.35	37.33	45.71
HOE AROUND TREES	HAND LABOR	JUN 199	4 .00		.00	.00	150.00	.00	.00	4.50	154.50	154.50
MOW ORCHARD	52HP-WT, 9' ROTARY MOWER	JUL 199	4 .50	.55	4.95	2.74	4.81	.00	.00	.17	7.72	12.67
COVER SPRAY	HAND LABOR 52HP-WT, 9' ROTARY MOWER 52HP-WT, BLAST SPRAYER	JUL 199	4 .50	.60	8.38	4.78	5.25	.00	3.78	.31	14.12	22.50
MOW ORCHARD	52HP-WT, 9' ROTARY MOWER	AUG 199	4 .50	.55	4.95	2.74	4.81	.00	.00	.11	7.66	12.61
HERBICIDE	52HP-WT, 100 GAL. SPRAYER	AUG 199	4 .40	.48	4.50	6.32	4.20	.00	29.58	.60	40.70	45.20
MOW ORCHARD	52HP-WT, 9' ROTARY MOWER	OCT 199	4 .50	.55	4.95	2.74	4.81	.00	.00	.00	7.55	12.50
GOPHER CONTROL	HAND LABOR	ANN 199	4 .00	2.00	.00	.00	15.00	.00	1.28	.73	17.01	17.01
MISC USE	HAND LABOR 1/2 TON PICKUP	ANN 199	4 7.14	.00	36.45	23.42	.00	.00	.00	1.05	24.47	60.92
MISC USE		ANN 199	4 5.70	.00	12.50	5.74	.00	.00	.00	.26	6.00	18.51
	MACH SHED & SHOP	ANN 199	4 .00	.00	38.71	.71	.00	.00	.00	.03	.75	39.46
MISC USE	SHOP TOOLS	ANN 199			15.29	.00	.00		.00	.00	.00	15.29
OVERHEAD	UTILITIES, LEGAL, ACCTNG, ETC.	ANN 199	4 .00		.00		.00		.00	.00	405.18	405.18
MANAGEMENT	OPERATOR MANAGEMENT	ANN 199	4 .00	.00	250.00	.00	.00	.00	.00	.00	.00	250.00
LAND COST	INTEREST ON LAND	ANN 199	4 .00		350.00		.00			.00		350.00
TAXES	OPERATOR MANAGEMENT INTEREST ON LAND LAND	ANN 199	4 .00		47.16		.00	.00	.00	.00	.00	47.16
TOTAL PER ACRE				158.79	1102.77	166.29					8508.69	

TABLE 2i1: MATERIALS AND SERVICES USED BY INTEGRATED PRACTICES - 1994.

OPERATION	- <b></b>	MATERIAL AND/OR SERVICE
Soil Sample	February	Custom hire @ \$12.00/acre
Rip Land	February	Custom hire @ \$100.00/acre
Cleanup & Disk	February	Custom hire @ \$150.00/acre
Layout & Stake	February	Layout & state material @ \$5.00/acre
Fertilize	March	302.5 lbs. calcium nitrate @ 17¢/lb
Fertilize	March	0.5 ton of compost @ \$70.00/ton
Plant Trees	March	908 Standard Golden Delicious trees @ \$4.00/tree Custom plant 908 trees @ 40¢/tree
Seed Cover Crop	March	Rented grass seeder @ \$10.00/acre 15.0 lbs. of Companion seed @ \$1.25/lb
Mulch	March	205 cubic yards of wood chips @ \$5.00/cubic yard
Mildew Spray	April	5.0 ozs. Rally @ \$5.20/oz.
Tree Training	Season	Tree training material @ \$24.00/acre
Irrigate	Season	Irrigation charge & electricity @ \$150.00/acre
Install Trellis	May	Trellis material @ \$650.00/acre
Tie Leaders	May	Tape & twine @ \$6.00/acre
Mildew Spray	May	0.5 lb. of Procure @ \$51.90/lb.
Cover Spray	July	1.0 oz. of Provado @ \$3.78/oz.
Herbicide	August	0.5 gal. of Roundup @ \$59.15/gal.
Gopher Control	Annual	1.0 lb. of Gopher Getter Bait @ \$1.28/lb.
Overhead	Annual	5% variable cost

TABLE 3i1: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER INTEGRATED PRODUCTION PRACTICES - 1994.

	UNIT	PRICE OR COST/UNIT		VALUE OR COST	YOUR FARM
VARIABLE COSTS SOIL SAMPLE		\$		 \$	
SOIL SAMPLE	ACRE	12.00	1.00	12.00	
CLEAN-UP & DISK	ACRE	150.00	1.00	150.00	
CUSTOM RIPPING LAYOUT & STAKE MATER.	ACRE	100.00	1.00	100.00 5.00	
LAYOUT & STAKE MATER.	ACRE	5.00	1.00	5.00	
COMPOST	TON	70.00	.50	35.00	
GOLDEN TREES CUSTOM PLANT TREES COMPANION SEED	TREE	4.00	908.00	3632.00	
CUSTOM PLANT TREES	TREE	.40	908.00	363.20	
COMPANION SEED	LB.	1.25	15.00	18.75	
RENT SEEDER MULCH TRELLIS MATERIAL	ACRE	10.00	1.00	10.00	
MULCH	CUYD	5.00	205.00	1025.00	
TRELLIS MATERIAL	ACRE	650.00	1.00	650.00	
RALLY	OZ.	5.20	5.00	26.00	
CALCIUM NITRATE RALLY PROCURE PROVADO ROUNDUP	LB.	51.90	.50	25.95	
PROVADO	OZ.	3.78	1.00	3.78	
ROUNDUP	GAL.	59.15	.50	29.58	
ROUNDUP GOPHER GETTER	LB.	1.28	1.00	29.58 1.28	
TREE TRAIN MATERIAL	ACRE	24.00	1.00	24.00	
TAPE & TWINE	ACRE	6.00	1.00	6.00	
TAPE & TWINE IRR. CHG. & ELECT. CASUAL LABOR LABOR(TRAC/MACH) TRACTOR REPAIR	ACRE	150.00	1.00	150.00	
CASUAL LABOR	HOUR	7.50	119.60	897.00	
LABOR(TRAC/MACH)	HOUR	8.50	40.34	342.91	
TRACTOR REPAIR	ACRE	19.50	1.00	342.91 19.50	
TRACTOR FUEL/LUBE	ACRE	23.55	1.00	23.55	
MACHINERY REPAIRS	ACRE	95.25	1.00	95.25	
MACHINERY REPAIRS MACHINE FUEL/LUBE	ACRE	27.99	1.00	27.99	
INTEREST ON OP. CAP.	ACRE	378.35	1.00	378.35	
		405.18			
	110111	103.10	1.00		
OTAL VARIABLE COST				8508.69	
IXED COSTS		\$		\$	
TRACTOR DEPRECIATION					
TRACTOR INTEREST	ACRE	38.03	1.00	38.03	
TRACTOR INSURANCE TRACTOR TAXES	ACRE	2 5/	1 00	2 54	
TRACTOR TAXES	ACRE	7.61	1.00	7.61	
MACHINE DEPRECIATION	ACRE	169.60	1.00	169.60	
MACHINE INTEREST MACHINE INSURANCE	ACRE	168.58	1.00	168.58	
MACHINE INSURANCE	ACRE	11.24	1.00	11.24	
MACHINE TAXES	ACRE	23.37	1.00	23.37	
LAND TAX - YR 1	ACRE	47.16		47.16	
LAND COST	ACRE	350.00	1.00	47.16 350.00	
MANAGEMENT	ACRE	250.00		0 = 0 0 0	
OTAL FIXED COST				1102.77	
OTAL COST				9611.46	

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TABLE 1i2: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER INTEGRATED PRODUCTION PRACTICES - 1995.

INIBOTATIO INDUCTION INCLUED 1775.

						VARIABLE COST						
OPERATION	TOOLING		HOURS	LABOR HOURS		FUEL, LUBE, & REPAIRS	LABOR		MATER.	INTER.	TOTAL VARIABLE COST	TOTAL COST
					\$	\$	\$	\$	\$	\$	\$	\$
PRUNE	HAND LABOR (1 PERSON)	FEB 1995	.00	6.20	.57		46.50				49.29	49.86
DORM. SPY + ZINC		MAR 1995	.50	.60	8.38	4.78	5.25	.00	6.85	.89	17.77	26.15
FERTILIZE	52HP-WT, TRAILER W/HAND LABOR	APR 1995	2.00	6.30	17.09	8.62	49.87	.00	45.31	4.67	108.47	125.57
FERTILIZE	52HP-WT, TRAILER W/HAND LABOR		2.00		17.09	8.62	49.87	.00	35.00		97.70	114.80
FOLIAR SPRAY	52HP-WT, BLAST SPRAYER	APR 1995			8.38	4.78	5.25	.00	9.82		20.74	29.12
IRRIGATE	SOLID SET UNDERTREE IRR SYSTEM				203.03	50.00		150.00			209.00	412.03
IRRIGATE		SEA 1995			21.94	10.08	87.50	.00			101.97	123.90
MOW		MAY 1995			4.95	2.74	4.81				7.83	12.78
MILDEW SPRAY	52HP-WT, BLAST SPRAYER				8.38	4.78	5.25	.00			37.38	45.76
MILDEW SPRAY	52HP-WT, BLAST SPRAYER	MAY 1995	.50		8.38	4.78	5.25	.00	9.30		20.06	28.44
HERBICIDE	52HP-WT, 100 GAL SPRAYER	MAY 1995	.40		4.50	6.32	4.20	.00	29.58		41.60	46.10
TREE TRAINING	HAND LABOR 52HP-WT, 9' ROTARY MOWER 52HP-WT, BLAST SPRAYER 52HP-WT, 9' ROTARY MOWER	MAY 1995	.00		.00		468.75	.00	37.50	18.98	525.23	525.23
MOW	52HP-WT, 9' ROTARY MOWER	JUN 1995	.50		4.95	2.74	4.81	.00	.00		7.78	12.72
COVER SPRAY	52HP-WT, BLAST SPRAYER	JUN 1995	.50		8.38	4.78	5.25	.00	16.04		26.85	35.23
MOW	52HP-WT, 9' ROTARY MOWER	JUL 1995	.50		4.95	2.74	4.81	.00			7.72	12.67
TREE TRAINING	HAND LABOR 52HP-WT, BLAST SPRAYER	JUL 1995	.00		.00		156.25	.00	12.50		172.55	172.55
COVER SPRAY (2X)	52HP-WT, BLAST SPRAYER	JUL 1995	.50		8.38	4.78	5.25	.00	32.08		43.06	51.44
MOW	52HP-WT, 9' ROTARY MOWER	AUG 1995	.50		4.95	2.74	4.81				7.66	12.61
COVER SPRAY	52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, 9' ROTARY MOWER HAND LABOR	AUG 1995	.50		8.38	4.78	5.25	.00			26.46	34.84
COVER SPRAY	52HP-WT, BLAST SPRAYER	SEP 1995	.50		8.38	4.78	5.25	.00	16.04		26.27	34.65
MOW	52HP-WT, 9' ROTARY MOWER	OCT 1995	.50		4.95	2.74	4.81				7.55	12.50
GOPHER CONTROL	HAND LABOR	ANN 1995	.00		.00		15.00	.00			17.01	17.01
MISC USE	1/2 ION FICKUF	MININ IDDO	/.17		36.45	23.42	.00	.00			24.47	60.92
MISC USE	4-WHEEL ALL TERRAIN VEHICLE	ANN 1995	5.70		12.50	5.74	.00				6.00	18.51
MISC USE		ANN 1995			38.71	.71	.00	.00			.75	39.46
MISC USE	SHOP TOOLS	ANN 1995			15.29	.00	.00	.00	.00		.00	15.29
OVERHEAD	UTILITIES, LEGAL, ACCTNG, ETC.	ANN 1995	.00		.00	.00	.00	80.56	.00		80.56	80.56
MANAGEMENT	OPERATOR MANAGEMENT INTEREST ON LAND LAND	ANN 1995	.00		250.00	.00	.00	.00	.00		.00	250.00
LAND COST	INTEREST ON LAND	ANN 1995	.00		350.00	.00	.00				.00	350.00
TAXES	LAND	ANN 1995	.00			.00	.00					49.78
INTEREST COST	INTEREST ON 1ST YR ESTAB COST	ANN 1995	.00	.00	865.03	.00	.00	.00	.00	.00	.00	865.03
TOTAL PER ACRE			34.74	135.50	1973.76	165.46	944.00	230.56	293.33	58.39	1691.74	3665.50

TABLE 2i2: MATERIALS AND SERVICES USED BY INTEGRATED PRACTICES - 1995.

OPERATION		MATERIAL AND/OR SERVICE
		1.05 gals. of Superior Oil @ \$2.60/gal. 0.5 gal. of Zinc 10% @ \$8.25/gal.
Fertilize	April	266.5 lbs. of calcium nitrate @ 17¢/lb.
Fertilize	April	0.5 ton of compost @ \$70.00/ton
Foliar Spray	April	2.0 gals. of 3-18-18 @ \$4.55/gal. 4.0 lbs. of urea @ 18¢/lb.
Irrigate	Season	<pre>Irrigation charge and electricity @ \$150.00/acre</pre>
Mildew Spray	May	5.0 ozs. of Rally @ \$5.20/oz.
Mildew Spray	May	10.0 lbs. of Microthiol @ 93¢/lb.
Herbicide	May	0.5 gal. of Roundup @ \$59.15/gal.
Tree Training	May	Tape & twine @ \$37.50/acre
Cover Spray	June	2.0 lbs. of Guthion @ \$8.02/lb.
Tree Training	July	Tape & twine @ \$12.50/acre
Cover Spray	July	2.0 lbs. of Guthion @ \$8.02/lb.
Cover Spray	July	2.0 lbs. of Guthion @ \$8.02/lb.
Cover Spray	August	2.0 lbs. of Guthion @ \$8.02/lb.
Cover Spray	September	2.0 lbs. of Guthion @ \$8.02/lb.
Gopher Control	Annual	1.0 lb. of Gopher Getter Bait @ \$1.28/lb.
Overhead	Annual	5% variable cost

TABLE 3i2: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER INTEGRATED PRODUCTION PRACTICES - 1995.

PRODUCTION PR	ACIIC				
	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS SUPERIOR OIL ZINC 10% COMPOST 3-18-18 UREA CALCIUM NITRATE MICROTHIOL ROUNDUP RALLY GUTHION GOPHER GETTER		 خ		 خ	
CIIDEDIOD OII	CAT	2 60	1 05	ب 2 72	
ZING 10%	CAI.	0 25	1.05	4 12	
COMPOST	TON.	70.00	.50	35 00	
2 10 10	CAT	70.00	2.00	35.00	
2-T0-T0	GAL.	4.33	4.00	9.10	
OKEA	LB.	.18	4.00	./ <u>/</u> .	
CALCIUM NITRATE	TR.	.17	266.50	45.31	
MICROTHIOL	LB.	.93	10.00	9.30	
ROUNDUP	GAL.	59.15	.50	29.58	
RALLY	OZ.	5.20	5.00	26.00	
GUTHION	LB.	8.02	10.00	80.20	
GOPHER GETTER	LB.	1.28	1.00	1.28	
GOTHION GOPHER GETTER TAPE & TWINE IRR. CHG. & ELECT. CASUAL LABOR	ACRE	50.00	1.00	50.00	
IRR. CHG. & ELECT.	ACRE	150.00	1.00	150.00	
CASUAL LABOR	HOUR	7.50	76.60	574.50	
LABOR(TRAC/MACH)	HOUR	8.50	43.47	369.50	
CASUAL LABOR LABOR(TRAC/MACH) TRACTOR REPAIR TRACTOR FUEL/LUBE MACHINERY REPAIRS MACHINE FUEL/LUBE INTEREST ON OP. CAP.	ACRE	16.35	1.00	16.35	
TRACTOR FUEL/LUBE	ACRE	19.74	1.00	19.74	
MACHINERY REPAIRS	ACRE	101.37	1.00	101.37	
MACHINE FUEL/LUBE	ACRE	27.98	1.00	27.98	
INTEREST ON OP. CAP.	ACRE	58.39	1.00	58.39	
OVERHEAD	ACRE	80.56	1.00	00.50	
TOTAL VARIABLE COST				1691.74	
FIXED COSTS		\$		\$	
FIXED COSTS TRACTOR DEPRECIATION TRACTOR INTEREST	∆ C R F	29 07	1 00	29 07	
TDACTOR DEFRECIATION	ACKE	27.07	1.00	31 88	
TRACTOR INTEREST	ACKE	2 12	1.00	2 12	
TRACTOR INSURANCE TRACTOR TAXES	V C D E	6 38	1.00	2.13 6.38	
MACUTNE DEDDECTATION	$\lambda \subset D \Gamma$	170 2/	1 00	170 24	
MACHINE DEFRECIATION MACUINE INTEDECT	ACKE	171.24	1.00	17/1 16	
MACHINE INTEREST	ACKE	11 61	1.00	11 61	
MACHINE TROUKANCE	ACKE	24 40	1.00	24 40	
MACHINE DEFRECIATION MACHINE INTEREST MACHINE INSURANCE MACHINE TAXES LAND TAX - YR 2 LAND COST MANAGEMENT INTEREST ON ESTAB.	ACKE	44.48	1.00	44.48 <sub>-</sub>	
TAND COCK	ACKE	49.78	1.00	49./8	
LAND CONTENTS	ACKE	350.00	1.00	350.00	
MANAGEMENT	ACKE	∠5U.UU	1.00	∠50.00 <sub>-</sub>	
INTEREST ON ESTAB.	ACRE	865.03	1.00	865.03	
TOTAL FIXED COST				1973.76	
TOTAL COST				3665.50	

TABLE 1i3: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR HIGH DENSITY GOLDEN DELICIOUS APPLES GROWN UNDER INTEGRATED PRODUCTION PRACTICES - 1996

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								VAR					
OPERATION	TOOLING	MTH	YEAR	MACH HOURS		COST	FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.		COST
						\$ \$	\$	\$ \$	\$			\$	
PRUNE	HAND LABOR (2 PEOPLE)	FEB	1996	.00	15.00	1.38	.00	112.50	.00	.00	6.75	119.25	120.63
DORMANT SPRAY					.60		4.78		.00		1.44	28.79	37.17
COVER SPRAY	52HP-WT, BLAST SPRAYER	MAR	1996	.50	.60	8.38	4.78	5.25	.00	24.76	1.83	36.12	45.00
RENT BEEHIVE	ONE BEEHIVE PER ACRE	APR	1996	.00	.00	.00	.00	.00	35.00			36.58	36.58
IRRIGATE	SOLID SET UNDERTREE IRR SYSTEM			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	1996	10.00	10.00	21.94	10.08	87.50	.00	.00	4.39	101.97	123.90
HANG DISPENSERS	HAND LABOR	SEA	1996	.00	1.00	.00	.00	7.50	.00	110.00	5.29	122.79	122.79
MOW	52HP-WT, 9' ROTARY MOWER	MAY	1996	.50	.55	4.95		4.81	.00	.00	.28	7.83	12.78
MILDEW/FERT/COVR	52HP-WT, 9' ROTARY MOWER 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER HAND LABOR 52HP-WT, 100 GAL SPRAYER 52HP-WT, 9' ROTARY MOWER	MAY	1996	.50	.60	8.38	4.78	5.25			2.29	63.46	71.84
MILDEW SPRAY	52HP-WT, BLAST SPRAYER	MAY	1996	.50	.60	8.38	4.78	5.25	.00	26.00	1.35	37.38	45.76
THINNING SPRAY	52HP-WT, BLAST SPRAYER	MAY	1996	.50	.60	8.38	4.78	5.25	.00	117.15	4.77	131.95	140.33
TREE TRAINING	HAND LABOR	MAY	1996	.00	20.00	.00	.00	150.00	.00	12.50	6.09	168.59	168.59
HERBICIDE	52HP-WT, 100 GAL SPRAYER	MAY	1996	.40	.48	4.50	6.32	4.20		29.58		41.60	46.10
MOW	52HP-WT, 9' ROTARY MOWER	JUN	1996	.50	.55	4.95	2.74	4.81	.00	.00	.23	7.78	12.72
HAND THINNING	HAND LABOR  52HP-WT, BLAST SPRAYER  52HP-WT, 100 GAL SPRAYER  52HP-WT, 9' ROTARY MOWER  HAND LABOR  52HP-WT, BLAST SPRAYER  52HP-WT, 100 GAL SPRAYER	JUN	1996	.00	14.00	.00	.00	105.00	.00	.00	3.15	108.15	108.15
MILDEW/COVER SPY	52HP-WT, BLAST SPRAYER	JUN	1996	.50	.60	8.38	4.78	5.25	.00	42.04	1.56	53.63	62.01
HERBICIDE	52HP-WT, 100 GAL SPRAYER	JUN	1996	.40	.48	4.50	6.32	4.20	.00	29.58	1.20	41.30	45.80
MOW	52HP-WT, 9' ROTARY MOWER	JUL	1996	.50	.55	4.95	2.74	4.81	.00	.00	.17	7.72	12.67
TREE TRAINING	HAND LABOR	JUL	1996	.00	20.00	.00	.00	150.00	.00	12.50	3.66	166.16	166.16
CALCIUM/COVER	52HP-WT, BLAST SPRAYER	JUL	1996	.50	.60	8.38	4.78	5.25	.00	51.44	1.38	62.86	71.24
HERBICIDE	52HP-WT, 100 GAL SPRAYER	JUL	1996	.40	.48	4.50	6.32	4.20	.00	29.58		41.00	
CALCIUM/COVER	52HP-WT, BLAST SPRAYER	AUG	1996	.50	.60	8.38	4.78	5.25	.00	19.16	.44	29.63	38.01
MOW	52HP-WT, 9' ROTARY MOWER	AUG	1996	.50	.55	4.95	2.74	4.81	.00			7.66	12.61
HARVEST (27.7 BN)	PICKERS (4 PEOPLE)	SEP	1996	.00	55.40	5.31	.00	415.50			3.12	418.62	423.92
HARVEST	52HP-WT, BACKFORK	SEP	1996	10.39	13.85	67.68	35.79	121.19	.00	.00	1.18	158.15	225.84
BIN HANDLING	52HP-WT, FORKLIFT	SEP	1996	6.93	8.31	72.28	42.58	72.71				116.16	188.44
HAUL FRUIT MOW	CUSTOM HAULING	SEP	1996	.00	.00	.00	.00	.00	83.10				83.72
MOW	52HP-WT, BLAST SPRAYER 52HP-WT, 9' ROTARY MOWER PICKERS (4 PEOPLE) 52HP-WT, BACKFORK 52HP-WT, FORKLIFT CUSTOM HAULING 52HP-WT, POTARY MOWER 52HP-WT, PIAST SPRAYER	OCT	1996	.50	.55	4.95	2.74			.00	.00	7.55	12.50
FOLIAR FERTILIZE	52HP-WT, BLAST SPRAYER	OCT	1996	.50	.60	0.50	4.78			11.50	.00	21.53	29.91
GOPHER CONTROL	HAND LABOR	ANN	1996	.00	2.00	.00	.00					17.01	17.01
MISC USE	1/2 TON PICKUP	ANN	1996	7.14			23.42						
MISC USE	4-WHEEL ALL TERRAIN VEHICLE	ANN	1996	5.70	.00	12.50	5.74	.00					
MISC USE	MACHINE SHED & SHOP	ANN	1996	1.00		38.71			.00			.75	39.46
MISC USE	SHOP TOOLS	ANN	1996	1.00	.00		.00		.00				15.29
OVERHEAD	UTILITIES, LEGAL, ACCTNG, ETC.	ANN	1996	.00				.00	124.28			124.28	124.28
MANAGEMENT	OPERATOR MANAGEMENT	ANN	1996	.00	.00	250.00	.00	.00	.00	.00	.00	.00	250.00
LAND COST	52HP-WT, 9' ROTARY MOWER 52HP-WT, BLAST SPRAYER HAND LABOR 1/2 TON PICKUP 4-WHEEL ALL TERRAIN VEHICLE MACHINE SHED & SHOP SHOP TOOLS UTILITIES, LEGAL, ACCTNG, ETC. OPERATOR MANAGEMENT INTEREST ON LAND LAND	ANN	1996	.00	.00	350.00	.00	.00	.00	.00	.00	.00	350.00
TAXES	LAND	AMM	1990	.00	.00	53.71	.00	.00	.00	.00	.00	.00	53.71
INTEREST COST	INTEREST ON ESTABLISHMENT COST	ANN	1996					.00	.00	.00	.00	.00	1194.93
TOTAL PER ACRE	<b></b>											2609.95	

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TABLE 2i3: MATERIALS AND SERVICES USED BY INTEGRATED PRACTICES - 1996.

\_\_\_\_\_ OPERATION MATERIAL AND/OR SERVICE \_\_\_\_\_\_ Dormant Spray + Zinc March 1.5 gals. of Superior Oil @ \$2.60/gal. 0.5 gal. of Zinc 10% @ 8.25/gal. 10.0 lbs. of Microthiol @ 93¢/lb. Cover Spray March 4.0 pints of Lorsban @ \$6.19/pint 1.0 bee hive @ \$35.00/hive Rent Beehive April Irrigate Season Irrigation charge & electricity @ \$150.00/acre 400 ties @ 27.5¢/tie Hang Dispensers Season 2.0 lbs. of Guthion @ \$8.02/lb. Mildew/Fertilizer/ May 5.0 ozs. of Rally @ \$5.20/oz. Cover Spray 2.0 gals. of 3-18-18 @ \$4.55/gal. 5.0 ozs. of Rally @ \$5.20/oz. Mildew Spray May 6.6 ozs. of Accel @ \$12.58/oz.a Thinning Spray May 5.0 ozs. of Rally @ \$5.20/oz. 5.0 lbs. of Soulbor @ 80¢/lb. 0.5 gal. of Zinc 10% @ \$8.25/gal. Tree Training Tape & twine @ \$12.50/acre May 0.5 gal. of Roundup @ \$59.15/gal. Herbicide May Mildew/Cover Spray June 2.0 lbs. of Guthion @ \$8.02/lb. 5.0 ozs. of Rally @ \$5.20/oz. Herbicide 0.5 gal. of Roundup @ \$59.15/gal. June Tree Training Tape & twine @ \$12.50/acre July 6.0 lbs. of calcium chloride @ 52¢/lb. Calcium/Cover Spray July 2.0 lbs. of Guthion @ \$8.02/lb. 2.0 ozs. of Provado @ \$3.78/oz. 0.25 gal. of Sylgard @ \$98.90/gal. Herbicide July 0.5 gal. of Roundup @ \$59.15/gal. Calcium/Cover Spray August 6.0 lbs. of calcium chloride @ 52¢/lb. 2.0 lbs. of Guthion @ \$8.02/lb. Harvest September 27.7 bins of apples picked @ \$8/bin. Haul Fruit September 27.7 bins of apples hauled @ \$3.00/bin Foliar Fertilizer October 5.0 gals of zinc sulfate @ \$1.50/gal. 5.0 lbs. of Solubor @ 80¢/lb. Gopher Control Annual 1.0 lb. of Gopher Getter @ \$1.28/lb. Annual 5% variable cost Overhead

<sup>a</sup>Accel may not be typically used in thinning Golden Delicious fruit, but was used at this site to achieve larger fruit size.

TABLE 3i3: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER INTEGRATED PRODUCTION PRACTICES - 1996.

PRODUCTION PRACTICES - 1996.											
	UNTT	PRICE OR COST/UNIT	OUANTITY	COST							
VARIABLE COSTS SUPERIOR OIL ZINC 10% MICROTHIOL LORSBAN ACCEL RALLY SOLUBOR ROUNDUP GUTHION 3-18-18 CALCIUM CHLORIDE PROVADO SYLGARD ZINC SULFATE GOPHER GETTER RENT BEEHIVE		 خ		 ¢							
CIIDEDIOD OII	CAT	າ ເຄ	1 50	3 0U							
7TMC 109	CAI.	2.00	1.00	9 25							
ZINC 106	GAL.	0.45	1.00	0.45							
MICROIHIOL	LD.	.93	10.00	9.30							
LORSBAN	DIM.I.	6.19	4.00	24.76							
ACCEL	OZ.	12.58	6.60	83.03							
RALLY	OZ.	5.20	20.00	104.00							
SOLUBOR	LB.	.80	10.00	8.00							
ROUNDUP	GAL.	59.15	1.50	88.73							
GUTHION	LB.	8.02	8.00	64.16							
3-18-18	GAL.	4.55	2.00	9.10							
CALCIUM CHLORIDE	LB.	.52	12.00	6.24							
PROVADO	OZ.	3.78	2.00	7.56							
SYLGARD	GAL.	98.90	.25	24.73							
ZINC SULFATE	GAL.	1.50	5.00	7.50							
GOPHER GETTER	LB.	1.28	1.00	1.28							
GOPHER GETTER RENT BEEHIVE TAPE & TWINE PHEROMONE DISPENSERS CUSTOM HAULING IRR. CHG. & ELECT. CASUAL LABOR LABOR(TRAC/MACH) TRACTOR REPAIR TRACTOR FUEL/LUBE MACHINERY REPAIRS MACHINE FUEL/LUBE	HIVE	35.00	1.00	35.00							
TAPE & TWINE	ACRE	25.00	1.00	25.00							
PHEROMONE DISPENSERS	DISP	.28	400.00	110.00							
CUSTOM HAULING	BIN	3.00	27.70	83.10							
TRR. CHG. & ELECT.	ACRE	150.00	1.00	150.00							
CASHAL LABOR	HOUR	7 50	127 40	955 50							
LABOR (TRAC/MACH)	HOUR	8 50	42 98	365 31							
TRACTOR REPAIR	ACRE	38 28	1 00	38 28							
TRACTOR RELAIR	ACICE	46 22	1.00	46 22							
MACHINERY REDAIRS	ACRE	131 52	1 00	131 52							
MACHINERI RELAIRE	ACICE	27 00	1.00	27 99							
MACHINE FUEL/LUBE INTEREST ON OP. CAP. OVERHEAD	VCDE	67 22	1.00	67 22							
OVERHEAD	ACKE	124 20	1.00	124 20							
OVERHEAD	ACRE	124.20	1.00	124.20							
TOTAL VARIABLE COST				2609.95							
FIXED COSTS TRACTOR DEPRECIATION		Ś		Ś							
TRACTOR DEPRECIATION	ACRE	68.05	1.00	68.05							
TRACTOR INTEREST	ACRE	74.65	1.00	74.65							
TRACTOR INSURANCE	ACRE	4.98	1.00	4.98							
TRACTOR INSURANCE TRACTOR TAXES MACHINE DEPRECIATION	ACRE	14 93	1 00	4.98 14.93 199.25							
MACHINE DEPRECIATION	ACRE	199 25	1 00	199 25							
MACHINE INTEREST	ACRE	186 88	1 00	186 88							
MACHINE INTEREST MACHINE INSURANCE	ACICE	100.00	1.00	12 46							
		27.03	1.00								
MACHINE TAXES LAND TAX - YR 3	ACRE ACRE		1.00	53.71							
LAND COST	ACRE			350.00							
MANAGEMENT	ACRE										
INTEREST ON ESTAB.	ACRE	1194.93	1.00	1194.93							
TOTAL FIXED COST				2436.85							
TOTAL COST				5046.80							

TABLE 1i4: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR HIGH DENSITY GOLDEN DELICIOUS APPLES GROWN UNDER INTEGRATED PRODUCTION PRACTICES - 1997

				VARIABLE COST									
OPERATION	TOOLING	MTH	YEAR		LABOR HOURS	TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.	TOTAL VARIABLE COST	TOTAL COST
PRUNE	HAND LABOR	FEB	1997	.00	25.00	\$ 2.30	\$ 00	\$ 187.50	\$ .00	\$ .00	\$ 11.25	\$ 198.75	\$ 201.05
	HAND LABOR 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER ONE BEE HIVE PER ACRE 52HP-WT, 100 GAL SPRAYER WIND MACHINE	MAR	1997	.50	.60	8.38		5.25		43.64	2.82		64.87
MILDEW SPRAY	52HP-WT, BLAST SPRAYER	APR	1997	.50	.60	8.38		5.25		35.25			55.70
RENT BEEHIVE	ONE BEE HIVE PER ACRE	APR	1997	.00	.00	.00		.00		.00			36.58
HERBICIDE	52HP-WT, 100 GAL SPRAYER	APR	1997	.40	.48	4.50		4.20		29.58		41.90	46.40
FROST CONTROL	WIND MACHINE	APR	1997	.00	2.00	152.11	92.79	17.50		.00		115.25	267.36
FROST CONTROL	FROST ALARM & THERMOMETERS	APR	1997	.00	.00	2.97	.00	.00		.00		.00	2.97
FROST CONTROL	UNDERTREE SPRINKLERS	APR		.00	.00	74.90	10.00	.00		.00			104.94
IRRIGATE	SOLID SET UNDERTREE IRR SYSTEM			.00	.00	203.03	50.00	.00		.00			412.03
IRRIGATE	4-WHEEL ATV W/ABOVE OPERATION			10.00	10.00	21.94	10.08	87.50		.00		101.97	123.90
HANG DISPENSERS	HAND LABOR	SEA		.00	1.00	.00		7.50				122.79	122.79
MOW	52HP-WT, 9' ROTARY MOWER	MAY		.50	.55	4.95		4.81		.00		7.83	12.78
HERBICIDE	52HP-WT, 100 GAL SPRAYER	MAY		.40	.48	4.50		4.20		29.58			46.10
		MAY		.50	.60	8.38		5.25	.00	21.35		32.56	40.94
COVER SPRAY		MAY MAY		.50 .50	.60 .60	8.38 8.38		5.25 5.25	.00	6.50 60.23			25.53 81.27
COVER SPRAY	•	MAY		.50	.60	8.38		5.25	.00	77.09	3.27	90.39	98.77
	52HP-WT, BLAST SPRAYER	MAY		.50	.60	8.38		5.25	.00	166.06			191.07
MILDEW SPRAY		MAY		.50	.60	8.38		5.25	.00	9.30			28.44
MOW	52HP-WT, 9' ROTARY MOWER	JUN		.50	.55	4.95	2.74	4.81	.00	.00		7.78	12.72
COVER SPRAY	52HP-WT, BLAST SPRAYER	JUN		.50	.60	8.38	4.78	5.25	.00	45.16			65.23
HERBICIDE	52HP-WT, 100 GAL SPRAYER	JUL		.40	.48	4.50		4.20		29.58	.90		45.50
MOW	52HP-WT, 9' ROTARY MOWER	JUL	1997	.50	.55	4.95		4.81	.00	.00			12.67
TREE TRAINING	HAND LABOR	JUL	1997	.00	25.00	.00	.00	187.50	.00	50.00	5.34	242.84	242.84
COVER SPRAY	52HP-WT, BLAST SPRAYER	JUL	1997	.50	.60	8.38	4.78	5.25	.00	30.07	.90	41.00	49.38
COVER SPRAY	52HP-WT, BLAST SPRAYER	AUG	1997	.50	.60	8.38	4.78	5.25	.00	19.16	.44	29.63	38.01
MOW	52HP-WT, 9' ROTARY MOWER	AUG	1997	.50	.55	4.95		4.81	.00	.00		7.66	12.61
HARVEST(67.1 BN)	PICKERS	SEP	1997	.00	.00	13.27	.00	.00		.00			554.10
HARVEST	52HP-WT, BACKFORK	SEP	1997	13.42		87.42	46.23	129.15	.00	.00			264.11
CHECK BINS	CHECKER FOR PICKING CREW	SEP	1997	.00	13.50	.00	.00	101.25	.00	.00			102.01
BIN HANDLING	52HP-WT, BIN TRAILER	SEP	1997	6.71	7.38	52.71	27.97	64.58	.00	.00		93.24	145.95
LOAD FRUIT	HAND LABOR 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, 9' ROTARY MOWER PICKERS 52HP-WT, BACKFORK CHECKER FOR PICKING CREW 52HP-WT, BIN TRAILER 52HP-WT, FORKLIFT CUSTOM HAULING 52HP-WT, 9' ROTARY MOWER HAND LABOR 1/2 TON PICKUP 4-WHEEL ALL TERRAIN VEHICLE	SEP	1997	2.70	2.97	28.16	16.59	25.99	.00	.00			71.06
HAUL FRUIT	CUSTOM HAULING	SEP	1997	.00	.00	.00		.00		.00		202.81	202.81
MOW GODIED GOVERNOT	52HP-WT, 9' ROTARY MOWER	OC.I.	1997	.50	.55	4.95	2.74	4.81	.00	.00		7.55	12.50
GOPHER CONTROL	1/2 FON DIGHT	AIVIV	1997	.00	2.00	.00	.00 23.42	15.00		1.28			17.01 60.92
MISC USE MISC USE	4-WHEEL ALL TERRAIN VEHICLE	ANN	1007	7.14 5.70	.00	36.45 12.50		.00		.00			18.51
MISC USE	MACHINE SHED & SHOP	ANN	1))	.00	.00	38.71	.71	.00		.00			39.46
MISC USE	SHOP TOOLS	ANN		.00	.00	15.29	.00	.00		.00			15.29
OVERHEAD	UTILITIES, LEGAL, ACCTNG, ETC.			.00	.00	.00		.00		.00			153.70
MANAGEMENT	ODERATOR MANAGEMENT	ZATATA	1997	.00	.00	250.00		.00		.00			250.00
LAND COST	INTEREST ON LAND	ANN	1997	.00		350.00		.00		.00			350.00
TAXES	INTEREST ON LAND LAND	ANN	1997	.00		64.19	.00	.00		.00			64.19
INTEREST COST	INTEREST ON ESTABLISHMENT COST			.00	.00	1529.10	.00	.00	.00	.00	.00		1529.10
TOTAL PER ACRE							368.79					3227.71	

TABLE 2i4: MATERIALS AND SERVICES USED BY INTEGRATED PRACTICES - 1997.

\_\_\_\_\_\_ MATERIAL AND/OR SERVICE \_\_\_\_\_\_ Dormant Spray March 2.1 gals. of Superior Oil @ \$2.60/gal. + Zinc 0.5 gal. of Zinc 10% @ \$8.25/gal. 4.0 pints of Lorsban @ \$6.19/pt. 10.0 lbs. of Microthiol @ .93¢/lb. Mildew Spray April 10.0 lbs. of Microthiol @ .93¢/lb. 0.5 lb. of Procure @ \$51.90/lb. 1.0 beehive @ \$35.00/hive Rent Beehives April Herbicide April 0.5 gal. of Roundup @ \$59.15/gal. Frost Control April Irrigation charge & electricity @ \$18.75/acre Season Irrigation charge & electricity Irrigate @ \$150.00/acre 400 ties @ 27.5¢/tie Hang Dispensers Season 0.5 gal. of Roundup @ \$59.15/gal. Herbicide May Mildew/Cover Spray May 4.2 ozs. of Rubigan @ \$2.25/oz. 1.4 lbs. of DiPel @ \$8.50/lb. Cover Spray May 1.05 pints of Lorsban @ \$6.19/pt. Foliar Fertilizer/ May 2.0 gals. of 3-18-18 @ \$4.55/gal. Mildew/Insecticide 0.5 gal. of Zinc 10% @ \$8.25/gal. 5.0 lbs. of Solubor @ .80¢/lb. 5.0 ozs. of Rally @ \$5.20/oz. 2.0 lbs. of DiPel @ \$8.50/lb. Cover Spray 2.0 lbs. of Guthion @ \$8.02/lb. May 5.0 ozs. of Rally @ \$5.20/oz. 0.5 lb. of Procure @ \$51.90/lb. 2.0 gals. of 3-18-18 @\$4.55/gal. 6.6 ozs. of Accel @ \$12.58/oz.a Thinning Spray May 6.6 ozs. of Accel @ \$12.58/oz.a Thinning Spray May Mildew Spray May 10.0 lbs. of Microthiol @ .93¢/lb. Cover Spray June 2.0 lbs. of Guthion @ \$8.02/lb. 6.0 lbs. of calcium chloride @ .52¢/lb. 5.0 ozs. of Rally @ \$5.20/oz. Herbicide 0.5 gal. of Roundup @ \$59.15/gal. July Tree Training Tape & Twine @ \$50.00/acre July Cover Spray July 2.0 gals. of 3-18-18 @ \$4.55/gal. 2.0 lbs. of Guthion @ \$8.02/lb. 6.0 lbs. of calcium chloride @ .52¢/lb. 1.0 pint of Trifol @ \$1.81/pt.

TABLE 2i4: MATERIALS AND SERVICES USED BY INTEGRATED PRACTICES - 1997. (Continued)

MATERIAL AND/OR SERVICE \_\_\_\_\_\_ 2.0 lbs. of Guthion @ \$8.02/lb. Cover Spray August 6.0 lbs. of calcium chloride @ .52¢/lb. September 67.1 bins of apples picked @ \$8.00/bin Harvest Haul Fruit September 67.1 bins of apples @ \$3.00/bin Annual Gopher Control 1.0 lb. of Gopher Getter @ \$1.28/lb. Overhead Annual 5% variable cost. \_\_\_\_\_

<sup>&</sup>lt;sup>a</sup>Accel may not be typically used in thinning Golden Delicious fruit but was used at this site to achieve larger fruit size.

TABLE 3i4: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER INTEGRATED PRODUCTION PRACTICES - 1997.

	UNIT	PRICE OR COST/UNIT	QUANTITY		
 /ARIABLE COSTS		\$		\$	
SUPERIOR OIL	GAL.	2.60	2.10	5.46	
7TNC 109	$C^{\dagger} X T$		1.00	5.46 8.25	
LORSBAN	PINT	6.19	5 05	21 26	
MICROTHIOL ROUNDUP PROCURE ACCEL 3-18-18 SOLUBOR	LB.	.93	30.00	27.90	
ROUNDUP	GAL.	59.15	1.50	88.72	
PROCURE	LB.	51.90	.50	25.95	
ACCEL	OZ.	12.58	13.20	166.06	
3-18-18	GAL.	4.55	6.00	27.30	
SOLUBOR	LB	80	5 00	4 00	
RALLY	07	5.20	15.00 3.40 8.00	78 00	
DIPEL	LB.	9.20 8.50	3 40	28 90	
GUTHION	LB.	8.50 8.02	8 00	64 16	
PROCURE	TD.	51 00	5.00	25 05	
RUBIGAN	шь. О7	51.90 2.25 .52	4 20	23.93	
CALCIUM CHLORIDE	UZ.	4.43	10 00	9.40	
CALCIUM CHLORIDE	ъш.	1 01	10.00	9.30	
TRIFOL	PI.	1.81	1.00	1.81	
GOPHER GETTER	LB.	1.28 35.00	1.00	1.28	
RENT BEEHIVE	HIAE	35.00	1.00	35.00	
TAPE & TWINE	ACRE	50.00	1.00	50.00	
PHEROMONE DISPENSERS	DISP	.28	400.00	110.00	
RENT BEEHIVE TAPE & TWINE PHEROMONE DISPENSERS IRR. CHG. & ELECT. CUSTOM PICKING CUSTOM HAULING CASUAL LABOR LABOR(TRAC/MACH) TRACTOR REPAIR TRACTOR FUEL/LUBE MACHINERY REPAIRS MACHINE FUEL/LUBE	ACRE	165.75	1.00	168.75	
CUSTOM PICKING	BIN	8.00	67.10	536.80	
CUSTOM HAULING	BIN	3.00	67.10	201.30	
CASUAL LABOR	HOUR	7.50	66.50	498.75	
LABOR(TRAC/MACH)	HOUR	8.50	49.31	419.13	
TRACTOR REPAIR	ACRE	48.05	1.00	48.05	
TRACTOR FUEL/LUBE	ACRE	58.01	1.00	58.01	
MACHINERY REPAIRS	ACRE	171.94	1.00	171.94	
MACHINE FUEL/LUBE	ACRE	90.78	1.00	90.78	
OVERHEAD	ACRE	153.70	1.00	153.70	
MACHINE FUEL/LUBE OVERHEAD INTEREST ON OP. CAP.	ACRE	81.69	1.00	81.69	
COTAL VARIABLE COST				3227.71	
TIXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	85.41	1.00	85.41	
TRACTOR DEPRECIATION TRACTOR INTEREST	ACRE	93.69	1.00	93.69	
TRACTOR INSURANCE	ACRE	6.25	1.00	6.25	
TRACTOR INSURANCE TRACTOR TAXES	ACRE	18.74	1.00	6.25 18.74	
MACHINE DEPRECIATION	ACRE		1.00	290.17	
MACHINE INTEREST	ACRE		1.00	306.72	
	ACRE		1.00	00 00	
MACHINE TAXES	ACRE		1.00	50.81	
	ACRE		1.00		
LAND COST	$\lambda \subset D \Gamma$	350 00			
MANA CEMENT	ACKE	250.00	1.00	350.00 250.00	
MANAGEMENT INTEREST ON ESTAB.	ACRE	1529.10	1.00	1529.10	
	ACILL	1020.10	1.00		
TOTAL FIXED COST				3065.46	
COTAL COST				6293.17	

TABLE 115: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR HIGH DENSITY GOLDEN DELICIOUS APPLES GROWN UNDER INTEGRATED PRODUCTION PRACTICES - 1998

				VARIABLE COST								
OPERATION	TOOLING	MTH YE		LABOR HOURS	TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.	TOTAL VARIABLE COST	TOTAL COST
					\$	\$	\$	\$	\$	\$	\$	\$
PRUNE	HAND LABOR	FEB 19	98 .0	0 30.00	2.76	.00	225.00		.00			241.26
DORM. SPY + ZINC	52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, 100 GAL SPRAYER ONE BEEHIVE PER ACRE WIND MACHINE FROST ALARM & THERMOMETERS	MAR 19	98.5		8.38	4.78	5.25	.00	43.64			64.87
MILDEW SPRAY	52HP-WT, BLAST SPRAYER	APR 19	98.5				5.25	.00	35.25			55.70
HERBICIDE	52HP-WT, 100 GAL SPRAYER	APR 19	98 .4				4.20		29.58			46.40
RENT BEEHIVE	ONE BEEHIVE PER ACRE	APR 19	98 .0				.00		.00			36.58
FROST CONTROL	WIND MACHINE	APR 19	98 .0				17.50	.00	.00			267.36
FROST CONTROL	111001 11111111 0 111111111111111						.00	.00	.00		.00	2.97
FROST CONTROL	UNDERTREE SPRINKLERS	APR 19					.00	18.75	.00			104.94
IRRIGATE	SOLID SET UNDERTREE IRR SYSTEM						.00		.00			412.03
IRRIGATE	4-WHEEL ATV W/ABOVE OPERATION	SEA 19	98 10.0				87.50		.00			123.90
HANG DISPENSERS MOW	HAND LABOR	SEA 19	98 .0 98 .5				7.50 4.81		110.00			122.79 12.78
MOW COVER SPRAY	52HP-WI, 9' KUIAKI MUWEK	MAY 19	98 .5 98 .5				5.25		6.50			25.53
MILDEW SPRAY	52HP-WI, BLASI SPRAIER 52HD-WT DIAGT CDDAVED	MAV 10	98 .5				5.25					28.44
THIN SDRAV (2X)	52HP-WT, BLAST SPRAYER	MAV 10	98 .5				5.25					191.07
FERT/MILDW/INSCT	52HP-WT, BLAST SPRAYER	MAY 19	98 .5	0 .60			5.25	.00				81.27
HERBICIDE	52HP-WT 100 GAL SPRAYER	TIIN 19	98 .4				4.20	.00	29.58			45.80
MOW	52HP-WT, 9' ROTARY MOWER	JUN 19	98 .5				4.81					12.72
COVER SPRAY	52HP-WT, BLAST SPRAYER	JUN 19	98 .5				5.25					65.23
HAND THINNING	HAND LABOR	JUN 19	98 .0	0 32.50								251.06
MOW	52HP-WT, 9' ROTARY MOWER	JUL 19	98 .5	0 .55	4.95		4.81	.00	.00	.17	7.72	12.67
TREE TRAINING	HAND LABOR	JUL 19	98 .0	0 25.00	.00	.00	187.50	.00			242.84	242.84
COVER SPRAY	52HP-WT, BLAST SPRAYER	JUL 19	98 .5			4.78	5.25	.00	30.07	.90	41.00	49.38
MOW	52HP-WT, 9' ROTARY MOWER	AUG 19	98 .5									12.61
HARVEST(24.2 BN)	PICKERS	SEP 19	98 .0									443.25
HARVEST(41.1 BN)	PICKERS	SEP 19	98 .0				.00					464.38
HARVEST	52HP-WT, BACKFORK	SEP 19	98 13.0				125.74					257.08
CHECK BINS	CHECKER FOR PICKING CREW	SEP 19	98 .0									98.68
BIN HANDLING	52HP-WT, BIN TRAILER	SEP 19	98 6.5				62.82					142.02
LOAD FRUIT	52HP-WT, FORKLIFT	SEP 19	98 2.6				25.11		.00			68.68
HAUL FRUIT	HAND LABOR 52HP-WT, 9' ROTARY MOWER 52HP-WT, BLAST SPRAYER 52HP-WT, 100 GAL SPRAYER 52HP-WT, 9' ROTARY MOWER 52HP-WT, BLAST SPRAYER HAND LABOR 52HP-WT, 9' ROTARY MOWER HAND LABOR 52HP-WT, 9' ROTARY MOWER FICKERS FICKERS FICKERS FICKERS 52HP-WT, BLAST SPRAYER 52HP-WT, BACKFORK CHECKER FOR PICKING CREW 52HP-WT, BIN TRAILER 52HP-WT, FORKLIFT CUSTOM HAULING 52HP-WT, 9' ROTARY MOWER HAND LABOR 1/2 TON PICKUP 4-WHEEL ALL TERRAIN VEHICLE	SEP 19	98 .0					195.90	.00			197.37
MOW	52HP-WT, 9' ROTARY MOWER	OCT 19	98 .5				4.81 15.00		.00			12.50
GOPHER CONTROL MISC USE	1/2 TON DIGHTD	ANN 19	98 .0 96 7.1				.00		1.28			17.01 60.92
MISC USE	4-WHEEL ALL TERRAIN VEHICLE	ANN 19	96 7.1 98 5.7				.00		.00			18.51
MISC USE	MACHINE SHED & SHOP	ANN 19	98 .0				.00		.00			39.46
MISC USE	SHOP TOOLS	ANN 19					.00		.00			15.29
	UTILITIES, LEGAL, ACCTNG, ETC.							175.35	.00			175.35
MANAGEMENT	OPERATOR MANAGEMENT	ANN 19	98 .0				.00		.00			250.00
LAND COST	OPERATOR MANAGEMENT INTEREST ON LAND LAND	ANN 19	98 .0				.00					350.00
TAXES	LAND	ANN 19	98 .0	0 .00								72.05
INTEREST COST	INTEREST ON ESTABLISHMENT COST		98 .0	0 .00	1804.71		.00		.00	.00	.00	
TOTAL PER ACRE				 4 148.49	3315.06	345.57	1169.83	1462.70	616.64	87.67	3682.41	6997.47

TABLE 2i5: MATERIALS AND SERVICES USED BY INTEGRATED PRACTICES - 1998.

MATERIAL AND/OR SERVICE OPERATION \_\_\_\_\_ Dormant Spray March 2.1 gals. of Superior Oil @ \$2.60/gal. + Zinc 0.5 gal. of Zinc 10% @ \$8.25/gal. 4.0 pts. of Lorsban @ \$6.19/pt. 10.0 lbs. of Microthiol @ .93¢/lb. 10.0 lbs. of Microthiol @ .93¢/lb. April Mildew Spray 0.5 lb. of Procure @ \$51.90/lb. Herbicide April 0.5 gal. of Roundup @ \$59.15/gal. Rent Beehive April 1.0 beehive @ \$35.00/hive Frost Control Irrigation charge & electricity April @ \$18.75/acre Irrigate Season Irrigation charge & electricity @ \$150.00/acre Hang Dispensers Season 400 ties/acre @ 27.5¢/tie (\$110/acre) Cover Spray May 1.05 pts. of Lorsban @ \$6.19/pt. Mildew Spray May 10.0 lbs. of Microthiol @ .93¢/lb. 6.6 ozs. of Accel @ \$12.58/oz.a Thinning Spray May 6.6 ozs. of Accel @ \$12.58/oz.a Thinning Spray May 2.0 gals. of 3-18-18 @ \$4.55/gal. Foliar Fertilizer/ May Mildew/Insecticide 0.5 gal. of Zinc 10% @ \$8.25/gal. 5.0 lbs. of Solubor @ .80¢/lb. 5.0 ozs. of Rally @ \$5.20/oz. 2.0 lbs. of DiPel @ \$8.50/lb. Herbicide June 0.5 gal. of Roundup @ \$59.15/gal. Cover Spray 2.0 lbs. of Guthion @ \$8.02/lb. June 6.0 lbs. of calcium chloride @ .52¢/lb. 5.0 ozs. of Rally @ \$5.20/oz. Tree Training July Tape & Twine @ \$50.00/acre Cover Spray July 2.0 gals. of 3-18-18 @ \$4.55/gal. 2.0 lbs. of Guthion @ \$8.02/lb. 6.0 lbs. of calcium chloride @ .52¢/lb. 1.0 pint of Trifol @ \$1.81/pt. Harvest September 24.2 bins of apples picked @ \$18.00/bin September 41.1 bins of apples picked @ \$11.00/bin Harvest Haul Fruit September 65.3 bins of apples @ \$3.00/bin Gopher Control Annual 1.0 lb. of Gopher Getter @ \$1.28/lb. Overhead Annual 5% variable cost.

<sup>&</sup>lt;sup>a</sup>Accel may not be typically used in thinning Golden Delicious fruit, but was used at this site to achieve larger fruit size.

TABLE 3i5: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER INTEGRATED PRODUCTION PRACTICES - 1998.

PRODUCTION PRACTICES - 1990.												
		PRICE OR		VALUE OR	YOUR							
		COST/UNIT			FARM							
VARIABLE COSTS SUPERIOR OIL ZINC 10% LORSBAN MICROTHIOL		\$		\$								
SUPERTOR OTL	GAT.	2,60	2.10	5.46								
ZINC 10%	GAL	8 25	1 00	8 25								
LORSBAN	PINT	6 19	5 05	31 26								
MICROTHIOI.	T.B	93	30.00	27 90								
BUINDID	GDT.	59 15	1 00	59 15								
DDOCTIDE	TD.	57.13	5.00	25.13								
ACCET	шь. О7	12 50	12 20	166 06								
ACCELI 2 10 10	CAT	12.30	13.20	100.00								
2-10-10	GAL.	4.55	<del>4</del> .00	10.20								
SOLUBOR	LВ.	.00	10.00	4.00								
KALLY	04.	5.20	10.00	52.00								
DIPEL	LB.	8.50	2.00	17.00								
GUTHION	LB.	8.02	4.00	32.08								
CALCIUM CHLORIDE	LB.	.52	12.00	6.24								
LORSBAN MICROTHIOL ROUNDUP PROCURE ACCEL 3-18-18 SOLUBOR RALLY DIPEL GUTHION CALCIUM CHLORIDE TRIFOL GOPHER GETTER RENT BEEHIVE	PT.	1.81	1.00	1.81								
GOPHER GETTER	LB.	1.28	1.00	1.28								
RENT BEEHIVE	HIVE	35.00	1.00	35.00								
RENT BEEHIVE TAPE & TWINE PHEROMONE DISPENSERS	ACRE	50.00	1.00	50.00								
PHEROMONE DISPENSERS	DISP	.28	400.00	110.00								
IRR. CHG. & ELECT.	ACRE	168.75	1.00	168.75								
PHEROMONE DISPENSERS IRR. CHG. & ELECT. CUSTOM PICKING CUSTOM PICKING CUSTOM HAULING CASUAL LABOR LABOR(TRAC/MACH) TRACTOR REPAIR TRACTOR FUEL/LUBE MACHINERY REPAIRS	BIN	11.00	41.10	452.10								
CUSTOM PICKING	BIN	18.00	24.20	435.60								
CUSTOM HAULING	BIN	3.00	65.30	195.90								
CASUAL LABOR	HOUR	7.50	103.56	776.70								
LABOR(TRAC/MACH)	HOUR	8.50	46.25	393.14								
TRACTOR REPAIR	ACRE	44.25	1.00	44.25								
TRACTOR FUEL/LUBE	ACRE	53.43	1.00	53.43								
MACHINERY REPAIRS	ACRE	157 11	1 00	157 11								
MACHINE FUEL/LUBE	ACRE	90 78	1 00	90 78								
INTEREST ON OP CAP	ACRE	87 67	1 00	87 67								
INTEREST ON OP. CAP. OVERHEAD	ACICE	175 35	1.00	175 35								
OVERTIEAD	ACILE	173.33	1.00									
TOTAL VARIABLE COST				3682.41								
ETVED GOOMG		بغ		ė								
FIXED COSTS	7 CD II	\$	1 00	\$								
TRACTOR DEPRECIATION TRACTOR INTEREST	ACRE	78.67	1.00	78.67								
TRACTOR INTEREST	ACRE	86.29	1.00	86.29								
TRACTOR INSURANCE	ACRE	5.75	1.00	5.75								
TRACTOR TAXES MACHINE DEPRECIATION	ACRE	17.26	1.00	17.26								
		280.81	1.00	280.81								
MACHINE INTEREST	ACRE	300.09	1.00	300.09								
MACHINE INSURANCE	ACRE		1.00	19.94								
MACHINE TAXES	ACRE		1.00									
LAND TAX - YR 5	ACRE		1.00									
LAND COST	ACRE		1.00	350.00								
MANAGEMENT	ACRE		1.00	250.00								
INTEREST ON ESTAB.	ACRE	1804.71	1.00	1804.71								
TOTAL FIXED COST				3315.06								
TOTAL COST												

TABLE 116: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR HIGH DENSITY GOLDEN DELICIOUS APPLES GROWN UNDER INTEGRATED PRODUCTION PRACTICES - 1999

							VARIABLE COST						
OPERATION	TOOLING	MTH Y	EAR 1	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.	TOTAL VARIABLE COST	TOTAL COST
PRUNE	HAND LABOR	FEB 1	aaa	0.0	30.00	\$ 2.76	\$	\$ 225.00	\$ .00	\$ .00	\$ 13.50	\$ 238.50	\$ 241.26
_	HAND LABOR 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, 100 GAL SPRAYER ONE BEEHIVE PER ACRE WIND MACHINE	MAR 1	999	.50	.60	8.38		5.25				119.46	127.84
MILDEW/FOLIAR	52HP-WT, BLAST SPRAYER	APR 1	999	.50	.60	8.38		5.25				57.16	65.54
HERBICIDE	52HP-WT, 100 GAL SPRAYER	APR 1	999	.40	.48	4.50		4.20		29.58		41.90	46.40
RENT BEEHIVE	ONE BEEHIVE PER ACRE	APR 1	999	.00		.00		.00		.00		36.58	36.58
FROST CONTROL	WIND MACHINE	APR 1	999	.00		152.11	92.79	17.50	.00	.00		115.25	267.36
FROST CONTROL	FROST ALARM & THERMOMETERS	APR 1	999	.00		2.97		.00		.00		.00	2.97
FROST CONTROL	UNDERTREE SPRINKLERS	APR 1		.00	.00	74.90		.00		.00		30.04	104.94
IRRIGATE	SOLID SET UNDERTREE IRR SYSTEM			.00	.00	203.03	50.00	.00	150.00	.00		209.00	412.03
IRRIGATE	4-WHEEL ATV W/ABOVE OPERATION	SEA 1	999	10.00	10.00	21.94	10.08	87.50		.00	4.39	101.97	123.90
HANG DISPENSERS	4-WHEEL AIV W/ABOVE OPERATION HAND LABOR 52HP-WT, 9' ROTARY MOWER 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, 100 GAL SPRAYER 52HP-WT, 9' ROTARY MOWER HAND LABOR 52HP-WT, BLAST SPRAYER 52HP-WT, BACKFORK CHECKERS PICKERS PICKERS 52HP-WT, BACKFORK CHECKER FOR PICKING CREW 52HP-WT, BIN TRAILER 52HP-WT, FORKLIFT CUSTOM HAULING 52HP-WT, 9' ROTARY MOWER HAND LABOR 1/2 TON PICKUP 4-WHEEL ALL TERRAIN VEHICLE MACHINE SHED & SHOP	SEA 1	999	.00	1.00	.00	.00	7.50	.00	110.00	5.29	122.79	122.79
MOW	52HP-WT, 9' ROTARY MOWER	MAY 1	999	.50	.55	4.95	2.74	4.81	.00	.00	.28	7.83	12.78
COVER SPRAY	52HP-WT, BLAST SPRAYER	MAY 1	999	.50	.60	8.38	4.78	5.25	.00	22.11	1.21	33.35	41.73
FOLIAR SPRAY	52HP-WT, BLAST SPRAYER	MAY 1	999	.50	.60	8.38	4.78	5.25	.00	15.80	.97	26.80	35.18
THIN. SPRAY (2X)	52HP-WT, BLAST SPRAYER	MAY 1	999	.50	.60	8.38		5.25	.00	166.06		182.69	191.07
INSECTICID SPRAY	52HP-WT, BLAST SPRAYER	MAY 1	999	.50	.60	8.38	4.78	5.25	.00	40.42		52.35	60.73
HERBICIDE	52HP-WT, 100 GAL SPRAYER	JUN 1	999	.40		4.50		4.20	.00	29.58		41.30	45.80
MOW	52HP-WT, 9' ROTARY MOWER	JUN 1	999	.50	.55	4.95		4.81	.00	.00		7.78	12.72
HAND THINNING	HAND LABOR	JUN 1	999	.00		.00		243.75	.00	.00	7.31	251.06	251.06
COVER SPRAY	52HP-WT, BLAST SPRAYER	JUN 1	999	.50	.60	8.38		5.25	.00			47.86	56.24
MOW	52HP-WT, 9' ROTARY MOWER	JUL 1	999	.50	.55	4.95		4.81		.00		7.72	12.67
TREE TRAINING	HAND LABOR	JUL 1	999	.00	25.00	.00		187.50		50.00		242.84	242.84
COVER SPRAY	52HP-WT, BLAST SPRAYER	JUL 1	999	.50	.60	8.38		5.25	.00	61.04		72.67	81.05
MOW	52HP-WT, 9' ROTARY MOWER	AUG 1	999	.50	.55	4.95		4.81	.00	.00		7.66	12.61
HARVEST(4.1 BIN)	PICKERS	SEP 1	999	.00	.00	.80		.00		.00		45.44	46.23
HARVEST(64.2 BN)	PICKERS	SEP 1	999	.00	.00	12.48	.00		1155.60	.00			1176.74
HARVEST	52HP-WT, BACKFORK	SEP I	999	13.66		88.99		131.51	.00	.00	1.34	179.90	268.89
CHECK BINS	CHECKER FOR PICKING CREW	SEP I	999	.00	13.66	.00		102.45	.00	.00		103.22	103.22
BIN HANDLING	52HP-WT, BIN TRAILER	SEP I	999	6.83	7.51	53.65		65.71		.00		94.89	148.54
LOAD FRUIT	52HP-WI, FURKLIFI	SEP I	999	2.73	3.01	28.47		26.34	.00 204.90	.00		43.44	71.91
MOW	CUSIOM HAULING	SEP I	999	.00	.55	.00 4.95		4.81		.00		206.44	206.44 12.50
CODIED COMEDO	JAND LADOD	OCI I	000	.00	2.00	.00		15.00		1.28		7.55 17.01	17.01
MICC HOE	1/2 TON DICKID	ANIN 1	999	7.14	.00	36.45		.00				24.47	60.92
MISC USE	A_WURRI AII TERRATA VEUTAIR	AININ 1	222	5.70	.00	12.50		.00		.00			18.51
MISC USE	MYCHIME CRED & CHOD	VIVIN 1	999	.00	.00	38.71		.00		.00		.75	39.46
MISC USE	SHOD TOOLS	ΔNN 1	999	.00	.00	15.29		.00					15.29
LAND COST	MACHINE SHED & SHOP SHOP TOOLS INTEREST ON LAND	ANN 1	999	.00		350.00		.00		.00			350.00
	UTILITIES, LEGAL, ACCTNG, ETC.			.00		.00			197.40	.00	.00	197 40	197.40
MANAGEMENT	OPERATOR MANAGEMENT			.00		250.00		.00		.00	.00	197.40	250.00
TAXES	LAND	ANN 1			.00	98.25		.00		.00	.00	.00	98.25
INTEREST COST	INTEREST ON ESTABLISHMENT COST			.00	.00	2099.61	.00	.00	.00	.00	.00	.00	2099.61
TOTAL PER ACRE							349.63					4145.35	7789.02

TABLE 2i6: MATERIALS AND SERVICES USED BY INTEGRATED PRACTICES - 1999.

\_\_\_\_\_\_ MATERIAL AND/OR SERVICE \_\_\_\_\_\_ 4.0 gals. of Superior Oil @ \$2.60/gal. 1.0 gals. of Zinc 10% @ \$8.25/gal. Dormant Spray March + Zinc 8.0 pts. of Lorsban @ \$6.19/pt. 5.0 ozs. of Rally @ \$5.20/oz. 10.0 lbs. of Microthiol @ .93¢/lb. Foliar Fertilizer/ April 0.5 gal. of Zinc 10% @ \$8.25/gal. 5.0 lbs. of Solubor @ 80¢/lb. Mildew Spray 5.0 ozs. of Rally @ \$5.20/oz. 8.0 lbs. of urea @ 18¢/lb. 2.0 gals. of 3-18-18 @ \$4.55/gal. Herbicide April 0.5 gal. of Roundup @ \$59.15/gal. 1.0 beehive @ \$35.00/hive Rent Beehives April Frost Control April Irrigation charge & electricity @ \$18.75/acre Irrigation charge & electricity Irrigate Season @ \$150.00/acre Hang Dispensers 400 ties/acre @ 27.5¢/tie (\$110/acre) Season 2.0 lbs. of Guthion @ \$8.02.1b. Cover Spray May 1.5 pints of Sevin @ \$4.05/pt. Foliar Spray May 4.0 gals. of lime sulfur @ \$3.95/gal. 6.6 ozs. of Accel @ \$12.58/oz.a Thinning Spray May 6.6 ozs. of Accel @ \$12.58/oz.a Thinning Spray May Insecticide May 1.5 gals. of Captan 4L @ \$26.95/gal. 0.5 gals. of Roundup @ \$59.15/gal. Herbicide June Cover Spray June 8.0 ozs. of Provado @ \$3.78/gal. 6.0 lbs. of calcium chloride @ .52¢/lb. 4.0 ozs. of Sylgard @ 77¢/oz. Tree Training Tape & Twine @ \$50.00/acre July 6.0 ozs. of Success @ \$6.21/oz.2.0 lbs. of Guthion @ \$8.02/lb. Cover Spray July 6.0 lbs. of calcium chloride @ .52¢/lb. 6.0 ozs. of Sylgard @ 77¢/oz. September 4.1 bins of apples picked @ \$11.00/bin Harvest Harvest September 64.2 bins of apples picked @ \$18.00/bin September 68.3 bins of apples @ \$3.00/bin Haul Fruit Annual 1.0 lb. of Gopher Getter @ \$1.28/lb. Gopher Control

Overhead Annual 5% variable cost.

<sup>a</sup>Accel may not be typically used in thinning Golden Delicious fruit, but was used at this site to achieve larger fruit size.

TABLE 3i6: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER INTEGRATED PRODUCTION PRACTICES - 1999.

		PRICE OR		VALUE OR	YOUR
	UNIT	COST/UNIT	QUANTITY	COST	FARM
VARIABLE COSTS SUPERIOR OIL ZINC 10% LORSBAN MICROTHIOL RALLY ROUNDUP SOLUBOR UREA 3-18-18 ACCEL LIME SULFUR CAPTAN 4L		 خ		 ප	
VARIABLE COSIS	CAT	2 60	4 00	ب 10 / 10	
SUPERIOR OIL	CAI.	2.00	1 50	10.40	
TODGRAM	DINT	6 10	8 00	49 52	
MICDOTUIOI	LD	0.19	10.00	49.32	
DALLA	шБ. О7	5 20	10.00	52.00	
DOIMDID	CAT	50 15	1 00	52.00 50 15	
COLLIDOD	TD.	29.13	5.00	79.13	
IDEN	ID.	10	9.00	1 //	
2_10_10	CAT	1 55	2.00	0 10	
7-10-10	OZ	12 50	12 20	166 06	
T TME CIII EIID	CAT	2 05	13.20	15 90	
CADTAN AT	CAI.	26 95	1 50	10.00	
CHPIAN 4L	TD.	20.93	1.50	22 00	
GENIN	ртит пр.	0.UZ	1 50	54.00 6 ∩7	
CAPTAN 4L GUTHION SEVIN PROVADO	O2 PINI	2 70	7.50	20.07	
CVICILIM CHIODIDE	UZ.	3./8	12 00	3U.44 6 21	
CALCIUM CHLORIDE SYLGARD SUCCESS	⊔Ď. О7	.54	10.00	7 70	
GIICCEGG	04.	.//	10.00	7.70 27 26	
GOPHER GETTER	UZ.	1 20	1 00	3/.40 1 20	
RENT BEEHIVE	LD.	1.28 35.00	1.00	25 00	
	7 000	F0 00	1 00	FO 00	
TAPE & TWINE PHEROMONE DISPENSERS IRR. CHG. & ELECT. CUSTOM PICKING CUSTOM PICKING CUSTOM HAULING CASUAL LABOR LABOR(TRAC/MACH) TRACTOR REPAIR TRACTOR FUEL/LUBE	DICD	20.00	400 00	110 00	
TDD CUC C FIFCT	VCDE	160 75	1 00	160.00	
CUICTOM DICKING	DIM	11 00	1.00	100.75 45 10	
CUSION PICKING	DIM	10.00	64 20	1155 60	
CUSION PICKING	DIM	10.00	69 30	204 90	
CACIIAI TADOD	DIN	7.50	104 16	701 20	
TAROR (TRAC/MACH)	HOUK	7.30 8.50	47 41	403 02	
TDACTOD DEDATE	V C D E	45 78	1 00	45 78	
TRACION REPAIR	ACKE	55 20	1.00	55 20	
MACHINERY REPAIRS	ACKE	157 78	1.00	157 78	
MACHINERI REPAIRS	ACKE	90 78	1.00	90 78	
MACHINE FUEL/LUBE INTEREST ON OP. CAP.	ACKE	90.70	1.00	90.70	
OVERHEAD	ACKE	197.40	1.00	107 //	
OVERHEAD	ACKE	197.40	1.00	197.40	
TOTAL VARIABLE COST				4145.35	
FIXED COSTS		Ċ		Ċ	
FIXED COSTS TRACTOR DEPRECIATION	∆СБЕ	81 20	1 00	81 ZQ	
TRACTOR DEFRECIATION TRACTOR INTEREST	ACRE		1.00		
TRACTOR INSURANCE	ACRE		1.00	5.95	
TRACTOR INSURANCE TRACTOR TAXES	ACRE				
MACHINE DEPRECIATION					
MACHINE DEPRECIATION MACHINE INTEREST	ACRE		1.00	300.50	
	ACRE			19.97	
	ACRE			49.57	
LAND TAX - MATURE			1.00		
LAND COST	ACRE.	350 00	1 00	350.00	
MANAGEMENT	ACRE	250.00	1.00	250.00	
INTEREST ON ESTAB.	ACRE	2099.61	1.00	2099.61	
				3643.67	
TOTAL FIXED COST					
TOTAL COST				7789.02	

Table 4i: Machinery and Building Complement

Machine Name	Purchase Price (\$)	Years of Use	Salvage Value (\$)	Annual Repair	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	
Trailer	2,000	20	500	100	100	
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 5i: HOURLY AND PER ACRE MACHINERY COSTS

MACHINERY	PURCHASE PRICE	YEARS TO TRADE	ANNUAL HOURS	DEPREC- IATION	INTER- EST	INSUR- ANCE	TAXES	HOUSING	TOTAL FIXED COST	REPAIR	FUEL AND LUBE	TOTAL VARIABLE COST	TOTAL COST
	\$							COST P	ER HOUR-				
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 BLAST 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		4.06	2.83	.00	2.83	6.89
TRAILER	2,000.00	20	100	.75	1.13	.08	.23	.00	2.18	1.00	.00	1.00	3.18
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
								COST P	ER ACRE-				
MACHINE SHED & SHOP			_	14.29	19.29	1.29	3.86		38.71		.00	.71	39.43
SHOP TOOLS	10,000.00	20	_	7.14	6.43	.43	1.29	.00	15.29	.00	.00	.00	15.29
WIND MACHINE	16,000.00	30	_	42.67	86.40	5.76	17.28	.00	152.11	30.00	62.79	92.79	244.90
ALARM & THEMOM.	205.00	10	_	2.05	.92	.00	.00	.00	2.97	.00	.00	.00	2.97
PUMP & MAINLINES	1,000.00		_	33.33	45.00	3.00	9.00		90.33		.00	20.00	110.33
IRRIGATION SYSTEM	1,150.00		_	57.50	51.75	3.45	.00		112.70		.00	30.00	142.70
HOLDING POND	7,000.00	20	-	35.00	31.50	2.10	6.30	.00	74.90	10.00	.00	10.00	84.90

## Appendix III

Cost of Establishing a High Density

Golden Delicious Apple Orchard

Using Organic Production Practices

TABLE 101: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER ORGANIC PRODUCTION PRACTICES - 1994.

								IABLE CO				
OPERATION	TOOLING	MTH YEA	R HOURS	LABOR HOURS	TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	LABOR			INTER.	TOTAL VARIABLE COST	TOTAL COST
					\$	\$	\$	\$	\$	\$	\$	\$
LAYOUT & STAKE FERTILIZE PLANT TREES COVER CROP PREP SEED COVER CROP PRUNE APPLY MULCH TREE TRAINING IRRIGATE INSTALL TRELLIS TIE LEADERS HOE AROUND TREES MOW ORCHARD MOW ORCHARD MOW ORCHARD GOPHER CONTROL MISC USE MISC USE	CUSTOM HIRE HAND LABOR 52HP-WT, TRAILER W/HAND LABOR CUSTOM PLANTED 52HP-WT, ROTOTILLER 52HP-WT, RENTED SEEDER HAND LABOR (1 PERSON) 52HP-WT, TRAILER W/HAND LABOR HAND LABOR SOLID SET UNDERTREE IRR SYSTEM 4-WHEEL ATV W/ABOVE OPERATION HAND LABOR HAND LABOR HAND LABOR 52HP-WT, 9' ROTARY MOWER 52HP-WT, 9' ROTARY MOWER 52HP-WT, 9' ROTARY MOWER 52HP-WT, 9' ROTARY MOWER HAND LABOR HAND LABOR 1/2 TON PICKUP 4-WHEEL ALL TERRAIN VEHICLE	FEB 199 FEB 199 MAR 199 MAR 199 MAR 199 MAR 199 MAR 199 MAR 199 SEA 199 SEA 199 SEA 199 MAY 199	$egin{array}{cccccccccccccccccccccccccccccccccccc$	.00 .00 4.00 12.60 2.75 1.21 1.00 6.30 20.00 .00 10.00 60.00 30.00 .55 .55 2.00	.00 .00 .00 .00 34.19 .00 24.84 7.01 .09 17.09 .00 203.03 21.94 .00 .00 4.95 4.95 .00 36.45 12.50	.00 .00 .00 17.25 .00 17.94 3.64 .00 50.00 10.08 .00 .00 .00 2.74 2.74 2.74	.00 .00 30.00 99.75 .00 24.06 10.59 7.50 49.87 150.00 .00 87.50 468.75	100.00 150.00 .00 .00 363.20 .00 10.00 .00 .00 .00 .00 .00 .00 .00	.00 .00 5.00 70.00 3632.00 18.75 .00 1025.00 24.00 .00 650.00 6.00 .00 .00	6.00 9.00 2.10 9.82 209.75 2.21 2.26 .39 56.88 7.83 9.00 4.39 41.95 4.44 6.75 .17 .11 .00 .73	106.00 159.00 37.10 196.81 4204.95 44.21 45.24 7.89 1140.38 181.83 209.00 101.97 1160.70 122.94 231.75 7.72 7.66 7.55 17.01 24.47 6.00	12.72 106.00 159.00 37.10 231.00 4204.95 69.05 52.25 7.99 1157.47 181.83 412.03 123.90 1160.70 122.94 231.75 12.67 12.61 12.50 17.01 60.92 18.51
MISC USE MISC USE	MACH SHED & SHOP SHOP TOOLS	ANN 199	4 .00	.00	15.29	.00	.00	.00	.00	.00	.00	39.46 15.29
OVERHEAD MANAGEMENT	UTILITIES, LEGAL, ACCTNG, ETC. OPERATOR MANAGEMENT				.00 250.00			401.68	.00			401.68 250.00
LAND COST TAXES	INTEREST ON LAND LAND	ANN 199 ANN 199	$egin{array}{cccc} 4 & .00 \ 4 & .00 \ \end{array}$	.00	350.00 47.16	.00	.00	.00	.00	.00	.00	350.00 47.16
TOTAL PER ACRE											8435.34	

TABLE 201: MATERIALS AND SERVICES USED BY ORGANIC PRACTICES
- 1994.

OPERATION		MATERIAL AND/OR SERVICE
Soil Sample	February	Custom hire @ \$12.00/acre
Rip Land	February	Custom hire @ \$100.00/acre
Cleanup & Disk	February	Custom hire @ \$150.00/acre
Layout & Stake	February	Layout & state material @ \$5.00/acre
Fertilize	March	1.0 ton of compost @ \$70.00/ton
Plant Trees	March	908 Standard Golden Delicious trees @ \$4.00/tree Custom plant 908 trees @ 40¢/tree
Seed Cover Crop	March	Rented grass seeder @ \$10.00/acre 15.0 lbs. of Companion seed @ \$1.25/lb
Mulch	March	205 cubic yards of wood chips @ \$5.00/cubic yard
Tree Training	Season	Tree training material @ \$24.00/acre
Irrigate	Season	<pre>Irrigation charge &amp; electricity @ \$150.00/acre</pre>
Install Trellis	May	Trellis material @ \$650.00/acre
Tie Leaders	May	Tape & twine @ \$6.00/acre
Gopher Control	Annual	1.0 lb. of Gopher Getter Bait @ \$1.28/lb.
Overhead	Annual	5% variable cost

TABLE 301: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER ORGANIC PRODUCTION PRACTICES - 1994.

PRODUCTION PR	ACIICI	70 - 199 <del>4</del> .			
	UNTT	PRICE OR COST/UNIT	OUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS SOIL SAMPLE CLEAN-UP & DISK		\$		\$	
SOIL SAMPLE	ACRE	12.00	1.00	12.00	
CLEAN-UP & DISK	ACRE	150.00	1.00	150.00	
CUSTOM RIPPING	ACRE	100.00	1.00	100.00	
LAYOUT & STAKE MATER.	ACRE	5.00	1.00	5.00	
GOLDEN TREES	TREE	4.00	908.00	3632.00	
CUSTOM PLANT TREES	TREE	.40	908.00	363.20	
CLEAN-UP & DISK CUSTOM RIPPING LAYOUT & STAKE MATER. GOLDEN TREES CUSTOM PLANT TREES COMPANION SEED RENT SEEDER MULCH COMPOST GOPHER GETTER TRELLIS MATERIAL TAPE & TWINE TREE TRAIN MATERIAL IRR. CHG. & ELECT.	LB.	1.25	15.00	18.75	
RENT SEEDER	ACRE	10.00	1.00	10.00	
MULCH	CUYD	5.00	205.00	1025.00	
COMPOST	TON	70.00	1.00	70.00	
GOPHER GETTER	LB.	1.28	1.00	1.28	
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	
TREE TRAIN MATERIAL IRR. CHG. & ELECT. CASUAL LABOR LABOR (TRAC/MACH) TRACTOR REPAIR TRACTOR FUEL/LUBE MACHINERY REPAIRS MACHINE FUEL/LUBE INTEREST ON OP. CAP. OVERHEAD	ACRE	150.00	1.00	150.00	
CASUAL LABOR	HOUR	7.50	129.60	972.00	
LABOR (TRAC/MACH)	HOUR	322.96	38.00	322.96	
TRACTOR REPAIR	ACRE	16 65	1 00	16 65	
TRACTOR FILEL/LIBE	ACRE	20 10	1 00	20 10	
MACHINERY REPAIRS	ACRE	80 87	1 00	80 87	
MACHINE FUEL/LUBE	ACRE	27 99	1 00	27 99	
INTEREST ON OP CAP	ACRE	375 85	1 00	375 85	
OVERHEAD	ACRE.	401 68	1 00	401 68	
O V EIGHDIE	710101	101.00	1.00		
TOTAL VARIABLE COST				8435.34	
FIXED COSTS		\$		\$	
FIXED COSTS TRACTOR DEPRECIATION TRACTOR INTEREST	ACRE	29.60	1.00	29.60	
TRACTOR INTEREST	ACRE	32.47	1.00	32.47	
TRACTOR INSURANCE	ACRE	2.16	1.00	2.16	
TRACTOR TAXES	ACRE	6.49	1.00	2.16 6.49	
MACHITATE DEDDECTATION	A CID II	160 20	1 00	160 20	
MACHINE INTEREST	ACRE	162.16	1.00	162.16	
MACHINE INSURANCE	ACRE	10.81	1.00	162.16 10.81	
MACHINE TAXES	ACRE	22.08	1.00	22.08	
LAND TAX - YR 1	ACRE	47 16	1 00	47 16	
LAND COST	ACRE	350 00	1 00	350 00	
MACHINE DEPRECIATION MACHINE INTEREST MACHINE INSURANCE MACHINE TAXES LAND TAX - YR 1 LAND COST MANAGEMENT	ACRE	250.00	1.00	250.00	
	110112	233,33	2.00		
TOTAL FIXED COST				1073.14	
TOTAL COST				9508.48	

TABLE 1o2: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER ORGANIC PRODUCTION PRACTICES - 1995.

VARTABLE COST FUEL, TOTAL MACH LABOR FIXED LUBE, & VARIABLE TOTAL TOOLING MTH YEAR HOURS HOURS COST REPAIRS LABOR SERVICE MATER. INTER. COST \$ \$ \$ \$ \$ \$ PRUNE HAND LABOR (1 PERSON) FEB 1995 .00 6.20 .57 .00 46.50 .00 .00 2.79 49.29 49.86 DORM. SPY + ZINC 52HP-WT, BLAST SPRAYER MAR 1995 .50 .60 8.38 4.78 5.25 .00 2.73 .67 13.43 21.81 MILDEW SPRAY 52HP-WT, BLAST SPRAYER APR 1995 .50 .60 8.38 4.78 5.25 .00 9.30 .87 20.20 28.58 FERTILIZE 52HP-WT, TRAILER W/HAND LABOR APR 1995 4.00 12.60 34.19 17.25 99.75 .00 70.00 8.41 195.41 229.60 INSTALL FABRIC 52HP-WT, TRAILER W/HAND LABOR APR 1995 2.00 40.00 17.09 8.62 305.00 .00 949.00 56.82 1319.44 1336.53 .00 .00 9.00
.00 .00 4.39
.00 .00 .00 .28
.00 .00 .00 .28
.00 .00 468.75 .00 9.30 .72
.00 .00 468.75 .00 37.50 18.98
.55 4.95 2.74 4.81 .00 .00
.55 4.95 2.74 4.81 .00
.00 .00 .00 156.25
.55 4.95 2.74
.55 4.95 2.74 IRRIGATE SOLID SET UNDERTREE IRR SYSTEM SEA 1995 .00 .00 203.03 50.00 .00 150.00 .00 9.00 209.00 412.03 4-WHEEL ATV W/ABOVE OPERATION SEA 1995 10.00 10.00 21.94 10.08 87.50 .00 .00 4.39 101.97 123.90 IRRIGATE 52HP-WT, 9' ROTARY MOWER MAY 1995 .50 .55 7.83 12.78 MOW 52HP-WT, BLAST SPRAYER .50 MILDEW SPRAY MAY 1995 20.06 28.44 .50 .55 4.95 37.50 18.98 525.23 525.23 TREE TRAINING HAND LABOR MAY 1995 7.78 52HP-WT, 9' ROTARY MOWER JUN 1995 52HP-WT, 9' ROTARY MOWER JUL 1995 MOW 12.72 .50 MOW 7.72 12.67 HAND LABOR

52HP-WT, 9' ROTARY MOWER

52HP-WT, 9' ROTARY MOWER

52HP-WT, 9' ROTARY MOWER

HAND LABOR

HAND LABOR .00 20.00 3.80 172.55 172.55 TREE TRAINING HAND LABOR .50 .55 MOW 7.66 12.61 .55 4.95 MOW .50 7.55 12.50 .00 15.00 ANN 1995 .00 2.00 .00 1.28 .73 17.01 17.01 GOPHER CONTROL HAND LABOR .00 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.01 | 17.0 MISC USE MISC USE MACHINE SHED & SHOP ANN 1995 MISC USE MISC USE OVERHEAD MANAGEMENT LAND COST TAXES 35.34 172.62 1935.18 143.86 1218.56 285.67 1091.61 109.33 2849.03 4784.21 TOTAL PER ACRE

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TABLE 2o1: MATERIALS AND SERVICES USED BY ORGANIC PRACTICES
- 1995.

OPERATION		MATERIAL AND/OR SERVICE
Dormant Spray	March	1.05 gals. of Superior Oil @ \$2.60/gal.
Mildew Spray	April	10.0 lbs. of Microthiol @ 93¢/lb.
Fertilize	April	1.0 ton of compost @ \$70.00/ton
Install Landscape Fabric	April	3650 feet @ 26¢/ft.
Irrigate	Season	<pre>Irrigation charge and electricity   @ \$150.00/acre</pre>
Mildew Spray	May	10.0 lbs. of Microthiol @ 93¢/lb.
Tree Training	May	Tape & twine @ \$37.50/acre
Tree Training	July	Tape & twine @ \$12.50/acre
Gopher Control	Annual	1.0 lb. of Gopher Getter Bait @ \$1.28/lb.
Overhead	Annual	5% variable cost

TABLE 302: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER ORGANIC PRODUCTION PRACTICES - 1995.

		PRICE OR		VALUE OR	YOUR
		COST/UNIT	QUANTITY	COST	FARM
VARIABLE COSTS		Ś		 \$	
SUPERIOR OIL	GAL.	2.60	1.05	2.73	
COMPOST	TON	70.00	1.00	70.00	
MICROTHIOL	LB.	.93	20.00	18.60	
GOPHER GETTER	LB.	1.28	1.00	1.28	
LANDSCAPE FABRIC	FOOT	.26	3650.00	949.00	
MICROTHIOL GOPHER GETTER LANDSCAPE FABRIC TAPE & TWINE	ACRE	50.00	1.00	50.00	
IRR. CHG. & ELECT.	ACRE	150.00	1.00	150.00	
CASUAL LABOR	HOUR	7.50	112.60	844.50	
CASUAL LABOR LABOR(TRAC/MACH) TRACTOR REPAIR TRACTOR FUEL/LUBE	HOUR	8.50	44.01	374.06	
TRACTOR REPAIR	ACRE	15.00	1.00	15.00	
TRACTOR FUEL/LUBE	ACRE	18.11	1.00	18.11	
MACHINERY REPAIRS	ACRE	82.75	1.00	82.75	
MACHINE FUEL/LUBE	ACRE	27.99	1.00	27.99	
INTEREST ON OP. CAP.	ACRE	109.33	1.00	109.33	
OVERHEAD	ACRE	135.67	1.00	135.67	
TOTAL VARIABLE COST				2849.03	
FIXED COSTS TRACTOR DEPRECIATION		\$	1 00	\$	
TRACTOR DEPRECIATION	ACRE	26.67	1.00	26.67	
TRACTOR INTEREST TRACTOR INSURANCE TRACTOR TAXES	ACRE	29.25	1.00	29.25	
TRACTOR INSURANCE	ACRE	1.95	1.00	1.95	
TRACTOR TAXES	ACRE	5.85	1.00	5.85	
MACHINE DEPRECIATION					
MACHINE INTEREST					
MACHINE INSURANCE	ACRE	11.08	1.00	11.08	
MACHINE TAXES	ACRE	22.89	1.00	22.89	
MACHINE TAXES LAND TAX - YR 2 LAND COST MANAGEMENT	ACRE	49.78	1.00	49./8	
MAND CONTROL	ACKE	350.00	1.00	350.00	
MANAGEMENT INTEREST ON ESTAB.	ACKE	∠50.00 055 76	1.00	∠50.00 055 76	
INIERESI ON ESTAB.	ACKE	055.70	1.00	055.76	
TOTAL FIXED COST				1935.18	
TOTAL COST				4784.21	

INTEREST COST

INTEREST ON ESTABLISHMENT COST ANN 1996

TABLE 103: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER ORGANIC PRODUCTION PRACTICES - 1996.

VARIABLE COST TOTAL FUEL, TOTAL MACH LABOR FIXED LUBE, & VARIABLE TOTAL OPERATION TOOLING MTH YEAR HOURS HOURS COST REPAIRS LABOR SERVICE MATER. INTER. COST COST \_\_\_\_\_ \$ \$ \$ \$ \$ \$ \$ \$ \$ 1.38 .00 112.50 .00 .00 6.75 119.25 120.6 .00 15.00 .00 .00 .00 13.20 6.75 119.25 120.63 1.22 24.45 32.83 HAND LABOR (2 PEOPLE) FEB 1996 52HP-WT, BLAST SPRAYER MAR 1996 ONE BEEHIVE PER ACRE APR 1996 8.38 4.78 DORMANT SPRAY .50 .60 5.25 .00 .00 36.58 RENT BEEHIVE .00 .00 .00 35.00 .00 1.58 36.58 .00 203.03 50.00 9.00 SOLID SET UNDERTREE IRR SYSTEM SEA 1996 1.00 .00 150.00 .00 209.00 412.03 IRRIGATE .00 .00 4.39 101.97 123.90 4-WHEEL ATV W/ABOVE OPERATION SEA 1996 10.00 10.00 21.94 10.08 87.50 TRRIGATE .00 1.00 5.29 122.79 122.79 HANG DISPENSERS HAND LABOR SEA 1996 .00 .00 7.50 .00 110.00 SEA 1996 .00 48.00 .00 .00 360.00 .00 .00 16.20 376.20 376.20 HAND HOEING (8X) HAND LABOR MAY 1996 .00 .28 7.83 12.78 52HP-WT, 9' ROTARY MOWER .50 4.95 2.74 4.81 .00 MOW .55 MAY 1996 .50 .60 8.38 4.78 .00 13.30 MILDEW/FOLIAR 52HP-WT, BLAST SPRAYER 5.25 .87 24.21 32.59 .00 12.50 6.09 168.59 168.59 TREE TRAINING HAND LABOR MAY 1996 .00 20.00 .00 .00 150.00 .00 52HP-WT, 9' ROTARY MOWER JUN 1996 .50 . 55 4.95 2.74 4.81 .00 .23 7.78 12.72 JUN 1996 .00 20.00 .00 .00 150.00 .00 4.50 154.50 154.50 HAND THINNING HAND LABOR .00 JUN 1996 .66 22.59 30.97 52HP-WT, BLAST SPRAYER .50 .60 8.38 4.78 5.25 .00 11.90 INSECTICIDE .50 .00 52HP-WT, 9' ROTARY MOWER JUL 1996 .55 4.95 2.74 4.81 .00 .17 7.72 12.67 MOW TREE TRAINING HAND LABOR JUL 1996 .00 20.00 .00 .00 150.00 .00 12.50 3.66 166.16 166.16 .30 13.45 21.83 5.25 CALCIUM SPRAY 52HP-WT, BLAST SPRAYER JUL 1996 .50 .60 8.38 4.78 .00 3.12 .50 .55 4.95 .11 MOW 52HP-WT, 9' ROTARY MOWER AUG 1996 2.74 4.81 .00 .00 7.66 12.61 CALCIUM SPRAY 52HP-WT, BLAST SPRAYER JUL 1996 .50 .60 8.38 4.78 5.25 .00 3.12 .20 13.35 21.73 HARVEST(20.9 BN) PICKERS (4 PEOPLE) SEP 1996 .00 41.80 5.31 .00 313.50 .00 .00 2.35 315.85 321.16 SEP 1996 7.84 10.45 51.07 27.01 91.44 .00 .00 HARVEST 52HP-WT, BACKFORK .89 119.33 170.40 SEP 1996 .00 .00 54.86 BIN HANDLING 52HP-WT, FORKLIFT 5.23 6.27 54.55 32.14 .65 87.65 142.20 52HP-WT, BLAST SPRAYER SEP 1996 52HP-WT, 9' ROTARY MOMEN .00 .00 .00 .00 .00 .00 62.70 63.17 63.17 HAUL FRUIT .47 .60 8.38 .50 .00 5.25 30.07 FOLIAR SPRAY 4.78 11.50 .16 21.69 .50 2.74 .00 .00 .00 MOM .55 4.95 4.81 7.55 12.50 GOPHER CONTROL HAND LABOR .00 .00 ANN 1996 .00 2.00 .00 15.00 1.28 .73 17.01 17.01 7.14 .00 36.45 23.42 5.70 .00 12.50 5.74 1.00 .00 38.71 .71 .00 .00 MISC USE 1/2 TON PICKUP ANN 1996 .00 1.05 24.47 60.92 .00 .00 .00 MISC USE 4-WHEEL ALL TERRAIN VEHICLE ANN 1996 .26 6.00 18.51 .71 .00 .00 .75 MACHINE SHED & SHOP ANN 1996 .00 MISC USE .03 39.46 SHOP TOOLS .00 .00 .00 ANN 1996 1.00 .00 15.29 .00 MISC USE .00 .00 15.29 .00 112.38 .00 .00 112.38 .00 .00 .00 UTILITIES, LEGAL, ACCTNG, ETC. ANN 1996 .00 112.38 OVERHEAD .00 250.00 .00 .00 .00 .00 MANAGEMENT OPERATOR MANAGEMENT ANN 1996 .00 .00 .00 250.00 .00 250.00 .00 350.00 .00 53.71 .00 .00 INTEREST ON LAND ANN 1996 .00 .00 .00 .00 .00 350.00 LAND COST .00 .00 .00 .00 53.71 TAXES LAND ANN 1996 .00 .00 .00

.00

.00 1286.34

.00

.00

59.41 200.87 2455.29 191.48 1547.85 360.08 192.42 68.09 2359.92 4815.21

.00

.00

.00

.00 1286.34

TABLE 203: MATERIALS AND SERVICES USED BY ORGANIC PRACTICES - 1996.

OPERATION MATERIAL AND/OR SERVICE Dormant Spray March 1.5 gals. of Superior Oil @ \$2.60/gal. 10.0 lbs. of Microthiol @ 93¢/lb. Rent Beehive April 1.0 beehive @ \$35.00/hive Irrigate Season Irrigation charge & electricity @ \$150.00/acre 400 ties @ 27.5¢/tie Hang Dispensers Season Mildew/Foliar May 10.0 lbs. Microthiol @ 93¢/lb. Fertilize Spray 5.0 lbs. Solubor @ 80¢/lb. Tree Training Tape & twine @ \$12.50/acre May Insecticide 1.4 lbs. of DiPel @9.08/lb. June Tree Training July Tape & twine @ \$12.50/acre Calcium Spray July 6.0 lbs. calcium chloride @ 52¢/lb. August 6.0 lbs. calcium chloride @ 52¢/lb. Calcium Spray Foliar Fertilize Spray September 5.0 gals. of zinc sulfate @ \$1.50/gal. 5.0 lbs. Solubor @ 80¢/lb. Harvest September 20.9 bins of apples picked @ \$8.00/bin September 20.9 bins of apples hauled @ \$3.00/bin Haul Fruit Gopher Control Annual 1.0 lb. of Gopher Getter @ \$1.28/lb. 5% variable cost Overhead Annual

TABLE 303: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER ORGANIC PRODUCTION PRACTICES - 1996.

TRODUCTION TRACTICES 1770.									
	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM				
VARIABLE COSIS	CAT	ب ع د ٥	1 50	2 00					
VARIABLE COSTS SUPERIOR OIL MICROTHIOL SOLUBOR DIPEL CALCIUM CHLORIDE ZINC SULFATE	GAL.	2.00	1.50	10 60					
MICROTHIOL	LB.	.93	20.00	18.60					
SOLUBOR	LB.	.80	10.00	8.00					
DIPEL	LB.	8.50	1.40	11.90					
CALCIUM CHLORIDE	LB.	.52	12.00	6.24					
ZINC SULFATE	GAL.	1.50	5.00	7.50					
GOPHER GETTER RENT BEEHIVE	LB.	1.28	1.00	1.28					
RENT BEEHIVE	HIVE	35.00	1.00	35.00					
TAPE & TWINE	ACRE	25.00	1.00	25.00					
TAPE & TWINE PHEROMONE DISPENSERS IRR. CHG. & ELECT.	DISP	.28	400.00	110.00					
IRR. CHG. & ELECT.	ACRE	150.00	1.00	150.00					
CUSTOM HAULING	BIN	3.00	20.90	62.70					
CUSTOM HAULING CASUAL LABOR LABOR(TRAC/MACH) TRACTOR REPAIR TRACTOR FUEL/LUBE	HOUR	7.50	167.80	1258.50					
LABOR (TRAC/MACH)	HOUR	8.50	34.04	289.36					
TRACTOR REPAIR	ACRE	27 85	1 00	27 85					
TRACTOR FILEL/LIBE	ACRE	33 63	1 00	33 63					
MACHINERY REDAIRS	ACKE	101 00	1.00	101 00					
MACHINERI REFAIRS	ACIVE	27 00	1.00	27 00					
MACHINERY REPAIRS MACHINE FUEL/LUBE INTEREST ON OP. CAP.	ACKE	60 00	1.00	60 00					
OVERHEAD	ACRE	112 20	1.00	112 20					
OVERHEAD	ACRE	112.38	1.00	112.30					
TOTAL VARIABLE COST				2359.92					
FIXED COSTS TRACTOR DEPRECIATION TRACTOR INTEREST TRACTOR INSURANCE		Ċ		ċ					
TDACTOD DEDDECTATION	7 CD E	40 E2	1 00	40 E2					
TRACTOR DEPRECIATION	ACKE	£9.34	1.00	49.34 <sub>-</sub>					
TRACTOR INTEREST	ACRE	2.62	1.00	24.34					
TRACTOR INSURANCE	ACRE	3.62	1.00	3.62					
TRACTOR TAXES MACHINE DEPRECIATION	ACRE	10.86	1.00	10.86					
MACHINE DEPRECIATION	ACRE	184.66	1.00	184.66					
MACHINE INTEREST	ACRE	175.74	1.00	175.74					
MACHINE INSURANCE	ACRE	11.72	1.00	11.72					
MACHINE TAXES	ACRE	24.80	1.00	24.80					
LAND TAX - YR 3	ACRE	53.71	1.00	53.71					
MACHINE DEPRECIATION MACHINE INTEREST MACHINE INSURANCE MACHINE TAXES LAND TAX - YR 3 LAND COST MANAGEMENT	ACRE	350.00	1.00	350.00					
MANAGEMENT	ACRE	250.00	1.00	250.00					
INTEREST ON ESTAB.	ACRE	1286.34	1.00	1286.34					
TOTAL FIXED COST				2455.29					
TOTAL COST				4815.21					

TABLE 104: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER ORGANIC PRODUCTION PRACTICES - 1997.

VARIABLE COST

	VARIABLE COST												
OPERATION	TOOLING					TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.	TOTAL VARIABLE COST	TOTAL COST
						\$	\$	\$	\$	\$	\$	\$	\$
PRUNE	HAND LABOR (2 PEOPLE)	REB	1997	.00	25.00	2.30		187.50	.00	.00		198.75	201.05
DORMANT SPRAY	52HP-WT, BLAST SPRAYER ONE BEEHIVE PER ACRE FROST ALARM & THERMOMETERS	MAR	1997	.50	.60	8.38		5.25	.00	14.76		26.09	34.47
RENT BEEHIVE	ONE BEEHIVE PER ACRE	APR	1997	.00		.00		.00	35.00	.00		36.58	36.58
FROST CONTROL	FROST ALARM & THERMOMETERS	APR	1997	.00	.00	2.97	.00	.00	.00	.00	.00	.00	2.97
FROST CONTROL	WIND MACHINE	APR	1997	.00	2.00	152.11	92.79	17.50	.00	.00	4.96	115.25	267.36
FROST CONTROL	UNDERTREE SPRINKLERS			.00	.00	74.90	10.00	.00	18.75	.00	1.29	30.04	104.94
MILDEW SPRAY	52HP-WT, BLAST SPRAYER	APR	1997	.50	.60	8.38	4.78	5.25	.00	9.30	.87	20.20	28.58
REMOVE FABRIC	52HP-WT, TRAILER W/HAND LABOR			2.00		17.09		185.00	.00	.00		202.34	219.43
IRRIGATE	4-WHEEL ATV W/ABOVE OPERATION			10.00		21.94	10.08	87.50	.00	.00		101.97	123.90
IRRIGATE	SOLID SET UNDERTREE IRR SYSTEM			.00	.00	203.03	50.00	.00	150.00	.00		209.00	412.03
CULTIVATE (8X)	52HP-WT, GRAPE SPADE CULTIVAT.			8.00	8.80	66.67	28.49	77.00	.00	.00		110.24	176.91
HAND HOEING (8X)			1997	.00		.00	.00		.00	.00		250.80	250.80
HANG DISPENSERS	HAND LABOR	SEA	1997	.00		.00		7.50	.00		5.29	122.79	122.79
MOW	52HP-WT, 9' ROTARY MOWER	MAY	1997 1997	.50	.55	4.95		4.81	.00	.00		7.83	12.78
INSECT/FOLIAR	52HP-WT, BLAST SPRAYER	MAY	1997	.50		8.38		5.25	.00	15.90		26.90	35.28
MILDEW SPRAY	52HP-WT, BLAST SPRAYER	MAY	1997	.50		8.38		5.25	.00			20.06	28.44
INSECTICIDE	52HP-WT, BLAST SPRAYER	JUN	1997	.50		8.38	4.78	5.25	.00	11.90		22.59	30.97
MOW CALCIUM SPRAY	52HP-WT, 9' ROTARY MOWER	JUN	1997	.50 .50		4.95		4.81	.00	.00 3.12		7.78	12.72 21.92
HAND THINNING	JZHP-WI, BLASI SPRAYER	JUN	1997	.00	.60 23.00	8.38	4.78	5.25 172.50	.00	.00		13.55 177.67	177.67
TREE TRAINING	HAND IADOR	JUN	1007	.00	25.00	.00		187.50	.00	50.00	5.34	242.84	242.84
MOW	ESUD_WT OI DOTADY MOWED	TITT	1007	.50	.55	4.95		4.81	.00	.00		7.72	12.67
CALCIUM SPRAY	52HP-WT, 9 KOTAKI MOWEK 52HD-WT BLAST SDRAVER	TIIT.	1997	.50	.60	8.38	4.78	5.25	.00	3.12		13.45	21.83
MOW	52HD-WT 9' ROTARY MOWER	AIIG	1997	.50		4.95		4.81	.00	.00		7.66	12.61
CALCIUM SPRAY	52HP-WT, BLAST SPRAYER	JUN	1997	.50	.60	8.38	4.78	5.25	.00	3.12		13.35	21.73
HARVEST	52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, 9' ROTARY MOWER 52HP-WT, BLAST SPRAYER HAND LABOR HAND LABOR 52HP-WT, 9' ROTARY MOWER 52HP-WT, 9' ROTARY MOWER 52HP-WT, BLAST SPRAYER 52HP-WT, BIN TRAILER PICKERS (10 PEOPLE) CHECKER FOR PICKING CREW 52HP-WT, FORKLIFT CUSTOM HAULING 52HP-WT, 9' ROTARY MOWER HAND LABOR INTEREST ON LAND 4-WHEEL ALL TERRAIN VEHICLE	SEP	1997	15.02		97.85		144.55	.00	.00		197.76	295.61
BIN HANDLING	52HP-WT, BIN TRAILER	SEP	1997	7.51	8.26	59.00	31.30	72.27	.00	.00		104.36	163.35
HARVEST(75.1 BN)	PICKERS (10 PEOPLE)	SEP	1997	.00	.00	13.27	.00	.00		.00		605.31	618.58
CHECK BINS	CHECKER FOR PICKING CREW	SEP	1997	.00		.00		114.00	.00	.00		114.85	114.85
LOAD FRUIT	52HP-WT, FORKLIFT	SEP	1997	3.00	3.30	31.29	18.43	28.88	.00	.00		47.66	78.95
HAUL FRUIT	CUSTOM HAULING	SEP	1997	.00	.00	.00	.00	.00	225.30	.00	1.69	226.99	226.99
MOW	52HP-WT, 9' ROTARY MOWER	OCT	1997	.50	.55	4.95	2.74	4.81	.00	.00	.00	7.55	12.50
GOPHER CONTROL	HAND LABOR	ANN	1997	.00	2.00	.00	.00	15.00	.00	1.28	.73	17.01	17.01
LAND COST	INTEREST ON LAND	ANN	1997	.00	.00	350.00	.00	.00	.00	.00	.00	.00	350.00
MISC USE	4-WHEEL ALL TERRAIN VEHICLE	ANN	1997	5.70	.00	12.50	5.74	.00	.00	.00		6.00	18.51
MISC USE	1/2 TON PICKUP	ANN	1997	7.14	.00	36.45	23.42	.00	.00	.00		24.47	60.92
MISC USE	MACHINE SHED & SHOP	ANN	1997	.00	.00	38.71	.71	.00	.00	.00		.75	39.46
MISC USE	1/2 TON PICKUP MACHINE SHED & SHOP SHOP TOOLS LAND OPERATOR MANAGEMENT	ANN	1997	.00	.00	15.29	.00	.00	.00	.00		.00	15.29
TAXES	LAND	ANN	1997	.00		64.19		.00	.00	.00		.00	64.19
	OPERATOR MANAGEMENT	ANN	1997	.00		250.00		.00	.00	.00		.00	250.00
OVERHEAD	UTILITIES, LEGAL, ACCTNG, ETC.			.00		.00			166.91	.00			166.91
INTEREST COST	INTEREST ON ESTABLISHMENT COST	ANN	1997	.00		1629.14	.00	.00	.00	.00		.00	1629.14
TOTAL PER ACRE							383.27					3505.07	

TABLE 204: MATERIALS AND SERVICES USED BY ORGANIC PRACTICES
- 1997.

\_\_\_\_\_\_ MATERIAL AND/OR SERVICE \_\_\_\_\_\_ Dormant Spray March 2.1 gals. of Superior Oil @ \$2.60/gal. 10.0 lbs. of Microthiol @ .93¢/lb. Rent Beehive 1.0 beehive @ \$35.00/hive April Frost Control April Irrigation charge & electricity @ \$18.75/acre Mildew Spray 10.0 lbs. of Microthiol @ .93¢/lb. April Irrigation charge & electricity Irrigate Season @ \$150.00/acre 400 ties @ 27.5¢/tie Hang Dispensers Season Insecticide/Foliar May 1.4 lbs. of DiPel @ \$8.50/lb. 5.0 lbs. of Solubor @ .80¢/lb. Spray 10.0 lbs. of Microthiol @ .93¢/lb. Mildew Spray May 1.4 lbs. of DiPel @ \$8.50/lb. Insecticide Spray June 6.0 lbs. of calcium chloride @ 52¢/lb. Calcium Spray June Tree Training Tape & Twine @ \$50.00/acre July 6.0 lbs. of calcium chloride @ 52¢/lb. Calcium Spray July Calcium Spray 6.0 lbs. of calcium chloride @ 52¢/lb. August Harvest September 75.1 bins of apples picked @ \$8.00/bin Haul Fruit September 75.1 bins of apples @ \$3.00/bin 1.0 lb. of Gopher Getter @ \$1.28/lb. Gopher Control Annual Annual 5% variable cost. Overhead

TABLE 304: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER ORGANIC PRODUCTION PRACTICES - 1997.

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	FARM						
VARIABLE COSTS	~	\$	0 10	\$							
SUPERIOR OIL	GAL.	2.60	2.10	5.46							
MICROTHIOL	LB.	.93	30.00	27.90							
DIPEL	LB.	8.50	2.80	23.80							
SOLUBOR	LB.	.80	5.00	4.00							
CALCIUM CHLORIDE	LB.	.52	18.00	9.36							
GOPHER GETTER	LB.	1.28	1.00	1.28							
RENT BEEHIVE TAPE & TWINE PHEROMONE DISPENSERS	HIVE	35.00	1.00	35.00							
TAPE & TWINE	ACRE	50.00	1.00	50.00							
PHEROMONE DISPENSERS	DISP	.28	400.00	110.00							
IRR. CHG. & ELECT.	ACRE	168.75	1.00	168.75							
CUSTOM PICKING	BIN	8.00	75.10	600.80							
CUSTOM HAULING	BIN	3.00	75.10	225.30							
PHEROMONE DISPENSERS IRR. CHG. & ELECT. CUSTOM PICKING CUSTOM HAULING CASUAL LABOR LABOR(TRAC/MACH) TRACTOR REPAIR TRACTOR FUEL/LUBE MACHINERY REPAIRS	HOUR	7.50	143.20	1074.00							
LABOR(TRAC/MACH)	HOUR	8.50	62.21	528.76							
TRACTOR REPAIR	ACRE	63.05	1.00	63.05							
TRACTOR FUEL/LUBE	ACRE	76.13	1.00	76.13							
MACHINERY REPAIRS	ACRE	153.31	1.00	153.31							
MACHINE FUEL/LUBE	ACRE	90.78	1.00	90.78							
INTEREST ON OP. CAP.	ACRE	90.48	1.00	90.48							
MACHINE FUEL/LUBE INTEREST ON OP. CAP. OVERHEAD	ACRE	166.91	1.00	166.91							
TOTAL VARIABLE COST				3505.07							
FIXED COSTS  TRACTOR DEPRECIATION TRACTOR INTEREST TRACTOR INSURANCE		Á		à							
FIXED COSTS	7 CD II	110 00	1 00	۶ 110 00							
TRACTOR DEPRECIATION	ACRE	112.08	1.00	112.08							
TRACTOR INTEREST	ACRE	122.94	1.00	122.94							
TRACTOR INSURANCE TRACTOR TAXES	ACRE	8.20	1.00	8.20 24.59							
MA CHITME DEDDECTARION	7 00 0	201 FF	1 00	201 FF							
MACHINE DEPRECIATION	ACRE	291.55	1.00	291.55							
MACHINE INTEREST	ACRE	306.62	1.00	306.62							
MACHINE INSURANCE	ACRE	20.38	1.00	∠U.38							
MACHINE TAXES	ACRE	50.79	1.00	50.79							
LAND TAX - YR 4	ACRE	64.19	1.00	64.19							
LAND COST	ACRE	350.00	1.00	350.00							
MANAGEMENT	ACRE	250.00	1.00	250.00							
MACHINE DEPRECIATION MACHINE INTEREST MACHINE INSURANCE MACHINE TAXES LAND TAX - YR 4 LAND COST MANAGEMENT INTEREST ON ESTAB.	ACRE	1629.14	1.00	1629.14							
TOTAL FIXED COST											
TOTAL COST				6735.54							

TABLE 105: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER ORGANIC PRODUCTION PRACTICES - 1998.

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.		TOTAL COST
						\$	\$	\$	\$	\$	\$	 \$	\$
PRUNE	HAND LABOR (2 PEOPLE)	FEB	1998	.00	30.00	2.76		225.00	.00	.00	13.50		241.26
DORMANT SPRAY	52HP-WT. BLAST SPRAYER	MAR	1998	.50		8.38		5.25		14.76			34.47
RENT BEEHIVE	ONE BEEHIVE PER ACRE	APR	1998	.00	.00	.00		.00		.00		36.58	36.58
FROST CONTROL	FROST ALARM & THERMOMETERS	APR	1998	.00		2.97		.00		.00		.00	2.97
FROST CONTROL	WIND MACHINE	APR	1998	.00		152.11		17.50	.00	.00		115.25	267.36
FROST CONTROL	HAND LABOR (2 PEOPLE) 52HP-WT, BLAST SPRAYER ONE BEEHIVE PER ACRE FROST ALARM & THERMOMETERS WIND MACHINE UNDERTREE SPRINKLERS 52HP-WT, BLAST SPRAYER	APR	1998	.00		74.90		.00	18.75	.00		30.04	104.94
MILDEW SPRAY	52HP-WT. BLAST SPRAYER	APR	1998	.50	.60	8.38		5.25	.00	9.30		20.20	28.58
IRRIGATE	4-WHEEL ATV W/ABOVE OPERATION	SEA	1998	10.00		21.94		87.50	.00	.00		101.97	123.90
TRRIGATE	SOLID SET UNDERTREE IRR SYSTEM	SEA	1998	. 0.0	.00	203.03		.00		.00		209.00	412.03
CULTIVATE (8X)	52HP-WT, GRAPE SPADE CULTIVAT.	SEA	1998	8.00	8.80	66.67		77.00	.00	.00		110.24	176.91
HAND HOEING (8X)	HAND LABOR	SEA	1998	.00		.00			.00	.00		250.80	250.80
HANG DISPENSERS	HAND LABOR	SEA	1998	.00	1.00	.00		7.50		110.00		122.79	122.79
MOW	52HP-WT. 9' ROTARY MOWER	MAY	1998	.50	.55	4.95		4.81	.00	.00		7.83	12.78
INSECT/FOLIAR	52HP-WT. BLAST SPRAYER	MAY	1998	.50		8.38		5.25	.00	21.00		32.19	40.57
MILDEW SPRAY	52HP-WT BLAST SPRAYER	MAY	1998	.50		8.38		5.25	.00				28.44
MOW	52HP-WT, 9' ROTARY MOWER	TIIN	1998	.50		4.95		4.81	.00	.00		7.78	12.72
CALCIUM SPRAY	52HP-WT BLAST SPRAYER	TIIN	1998	.50	.60	8.38		5.25	.00	3.12		13.55	21.92
HAND THINNING	HAND LABOR	TIIN	1998	.00		.00			.00	.00		370.80	370.80
MOW	52HP-WT. 9' ROTARY MOWER	TUIL	1998	.50	.55	4.95		4.81	.00	.00		7.72	12.67
TREE TRAINING	HAND LABOR	TIII.	1998	.00		.00		187.50	.00	50.00		242.84	242.84
CALCIUM SPRAY	52HP-WT. BLAST SPRAYER	TUIL	1998	.50	.60	8.38		5.25	.00	3.12		13.45	21.83
MOW	52HP-WT 9' ROTARY MOWER	ATTG	1998	.50	.55	4.95		4.81	.00	.00		7.66	12.61
HARVEST	52HP-WT. BACKFORK	SEP	1998	14.74		96.02		141.84		.00		194.06	290.08
BIN HANDLING	52HP-WT BIN TRAILER	SEP	1998	7.37	8.11	57.90		70.96	.00	.00		102.45	160.34
HARVEST(51.6 BN)	PICKERS	SEP	1998	.00	.00	9.29		.00		.00		571.86	581.15
HARVEST(22.1 BN)	PICKERS	SEP	1998	.00	.00	3.98		.00		.00		400.78	404.76
CHECK BINS	CHECKER FOR PICKING CREW	SEP	1998	.00	14.74	.00		110.55	.00	.00		111.38	111.38
LOAD FRUIT	52HP-WT, FORKLIFT	SEP	1998	3.00	3.30	31.29		28.88	.00	.00		47.66	78.95
HAUL FRUIT	CUSTOM HAULING	SEP	1998	.00	.00	.00		.00		.00		222.76	222.76
MOW	52HP-WT, GRAPE SPADE CULTIVAT. HAND LABOR HAND LABOR 52HP-WT, 9' ROTARY MOWER 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER HAND LABOR 52HP-WT, 9' ROTARY MOWER 52HP-WT, 9' ROTARY MOWER HAND LABOR 52HP-WT, 9' ROTARY MOWER 52HP-WT, BLAST SPRAYER 52HP-WT, BACKFORK 52HP-WT, BACKFORK 52HP-WT, BIN TRAILER PICKERS PICKERS CHECKER FOR PICKING CREW 52HP-WT, FORKLIFT CUSTOM HAULING 52HP-WT, 9' ROTARY MOWER HAND LABOR INTEREST ON LAND 4-WHEEL ALL TERRAIN VEHICLE	OCT	1998	.50	.55	4.95		4.81		.00		7.55	12.50
GOPHER CONTROL	HAND LABOR	ANN	1998	.00	2.00	.00		15.00	.00	1.28		17.01	17.01
LAND COST	INTEREST ON LAND	ANN	1998	.00	.00	350.00		.00	.00	.00		.00	350.00
MISC USE	4-WHEEL ALL TERRAIN VEHICLE	ANN	1998	5.70	.00	12.50		.00		.00		6.00	18.51
MISC USE	1/2 TON PICKUP	ANN	1998	7.14	.00	36.45	23.42	.00	.00	.00		24.47	60.92
MISC USE	MACHINE SHED & SHOP	ANN	1998	.00	.00	38.71		.00		.00			39.46
MISC USE	1/2 TON PICKUP MACHINE SHED & SHOP SHOP TOOLS LAND OPERATOR MANAGEMENT	ANN	1998	.00	.00	15.29		.00		.00		.00	15.29
TAXES	LAND	ANN	1998	.00		72.05		.00	.00	.00			72.05
MANAGEMENT	OPERATOR MANAGEMENT	ANN	1998	.00		250.00		.00		.00			250.00
OVERHEAD	UTILITIES, LEGAL, ACCTNG, ETC.	ANN	1998	.00	.00	.00	.00	.00	184.60	.00			184.60
INTEREST COST	INTEREST ON ESTABLISHMENT COST			.00	.00	1783.30	.00	.00	.00	.00	.00		1783.30
TOTAL PER ACRE							363.53					3876.66	

TABLE 205: MATERIALS AND SERVICES USED BY ORGANIC PRACTICES - 1998.

OPERATION		MATERIAL AND/OR SERVICE
Dormant Spray	March	2.1 gals. of Superior Oil @ \$2.60/gal. 10.0 lbs. of Microthiol @ 93¢/lb.
Rent Beehive	April	1.0 beehive @ \$35.00/hive
Frost Control	April	Irrigation charge & electricity @ \$18.75/acre
Mildew Spray	April	10.0 lbs. of Microthiol @ .93¢/lb.
Irrigate	Season	Irrigation charge & electricity @ \$150.00/acre
Hang Dispensers	Season	400 ties @ 27.5¢/tie
Insect/Foliar Spray	May	2.0 lbs. of DiPel @ \$8.50/lb. 5.0 lbs. Solubor @ 80¢/lb.
Mildew Spray	May	10.0 lbs. of Microthiol @ .93¢/lb.
Calcium Spray	June	6.0 lbs. calcium cloride @ 52¢/lb.
Tree Training	July	Tape & twine @ \$50/acre.
Calcium Spray	July	6.0 lbs. calcium cloride @ 52¢/lb.
Harvest	September	22.1 bins of apples picked @ \$18.00/bin 51.6 bins of apples picked @ \$11.00/bin
Haul Fruit	September	73.7 bins of apples @ \$3.00/bin
Gopher Control	Annual	1.0 lb. of Gopher Getter @ \$1.28/lb.
Overhead	Annual	5% variable cost.

TABLE 305: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER ORGANIC PRODUCTION PRACTICES - 1998.

	UNIT	COST/UNIT	QUANTITY	VALUE OR COST	FARM
VARIABLE COSTS SUPERIOR OIL MICROTHIOL DIPEL SOLUBOR CALCIUM CHLORIDE GOPHER GETTER RENT BEEHIVE TAPE & TWINE		 \$		 \$	
SUPERIOR OIL	GAL.	2.60	2.10	5.46	
MICROTHIOL	LB.	.93	30.00	27.90	
DIPEL	LB.	8.50	2.00	17.00	
SOLUBOR	LB.	.80	5.00	4.00	
CALCIUM CHLORIDE	LB.	.52	12.00	6.24	
GOPHER GETTER	LB.	1.28	1.00	1.28	
RENT BEEHIVE	HIVE	35.00	1.00	35.00	
TAPE & TWINE	ACRE	50.00	1.00	50.00	
PHEROMONE DISPENSERS	DISP	.28	400.00	110.00	
TAPE & TWINE PHEROMONE DISPENSERS IRR. CHG. & ELECT. CUSTOM PICKING CUSTOM PICKING CUSTOM HAULING	ACRE	168.75	1.00	168.75	
CUSTOM PICKING	BIN	11.00	51.60	567.60	
CUSTOM PICKING	BIN	18.00	22.10	397.80	
CUSTOM HAULING	BIN	3.00	73.70	221.10	
CASUAL LABOR	HOUR	7.50	152.74	1145.55	
COSIOM HAULING CASUAL LABOR LABOR(TRAC/MACH) TRACTOR REPAIR TRACTOR FUEL/LUBE MACHINERY REPAIRS	HOUR	8.50	56.38	479.24 _	
TRACTOR REPAIR	ACRE	57.91	1.00	57.91 _	
TRACTOR FUEL/LUBE	ACRE	69.93	1.00	69.93 _	
MACHINERY REPAIRS	ACRE	144.91	1.00	144.91 _	
MACHINE FUEL/LUBE	ACRE	90.78	1.00	90.78 _	
MACHINE FUEL/LUBE INTEREST ON OP. CAP. OVERHEAD	ACRE	91.61	1.00	91.61 _	
OVERHEAD	ACRE	184.60	1.00	184.60	
OTAL VARIABLE COST				3876.66	
IXED COSTS		\$		\$ 102.96 112.93 7.53 22.59 284.69	
TRACTOR DEPRECIATION	ACRE	102.96	1.00	102.96	
TRACTOR INTEREST	ACRE	112.93	1.00	112.93	
TRACTOR INSURANCE	ACRE	7.53	1.00	7.53	
TRACTOR TAXES	ACRE	22.59	1.00	22.59	
MACHINE DEPRECIATION	ACRE	284.69	1.00	284.69	
MACHINE INTEREST	ACRE	300.57	1.00	300.57	
MACHINE INSURANCE	ACRE	19.98	1.00	19.98	
MACHINE TAXES	ACRE	49.58	1.00	49.58	
LAND COST	ACRE	350.00	1.00	350.00	
MACHINE INTEREST MACHINE INSURANCE MACHINE TAXES LAND COST LAND TAX - YR 5	ACRE	72.05	1.00	72.05	
MANAGEMENT	ACRE	250.00	1.00	250.00	
MANAGEMENT INTEREST ON ESTAB.	ACRE	1783.30	1.00	1783.30	
OTAL FIXED COST				3356.18	
OTAL COST				7232.84	

TABLE 106: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER ORGANIC PRODUCTION PRACTICES - 1999.

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	VARIABLE COST											
OPERATION	TOOLING	MTH YEAR	HOURS	LABOR HOURS	TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.	TOTAL VARIABLE COST	TOTAL COST
					\$	\$	\$	\$	\$	\$	\$	\$
PRUNE	HAND LABOR (2 PEOPLE)	FEB 1999	.00	30.00	2.76	.00	225.00	.00	.00	13.50	238.50	241.26
DORMANT SPRAY	52HP-WT, BLAST SPRAYER	MAR 1999	.50		8.38		5.25	.00	14.76	1.30	26.09	34.47
RENT BEEHIVE	ONE BEE HIVE PER ACRE FROST ALARM & THERMOMETERS	APR 1999	.00		.00	.00	.00	35.00	.00	1.58	36.58	36.58
FROST CONTROL	FROST ALARM & THERMOMETERS	APR 1999	.00	.00	2.97	.00	.00	.00	.00	.00	.00	2.97
FROST CONTROL	WIND MACHINE	APR 1999	.00		152.11	92.79	17.50		.00			267.36
FROST CONTROL		APR 1999	.00		74.90	10.00	.00		.00			104.94
MILDEW SPRAY	52HP-WT, BLAST SPRAYER	APR 1999	.50		8.38		5.25	.00	9.30			28.58
IRRIGATE	4-WHEEL ATV W/ABOVE OPERATION				21.94		87.50	.00	.00			123.90
IRRIGATE	SOLID SET UNDERTREE IRR SYSTEM		.00	.00	203.03		.00		.00			412.03
CULTIVATE (8X)	52HP-WT, GRAPE SPADE CULTIVAT.		8.00	8.80	66.67		77.00	.00	.00			176.91
HAND HOEING (8X)		SEA 1999	.00		.00		240.00	.00	.00			250.80
HANG DISPENSERS		~ 1000		1.00	.00		7.50		110.00			122.79
MOTA	EATE AT A DOMARY MONTH	MAN 37 1000	ГΛ	.55	4.95		4.81		.00			12.78
INSECT/FOLIAR	52HP-WT, BLAST SPRAYER	MAY 1999	.50		8.38		5.25	.00	21.00			40.57
FOLIAR SPRAY	52HP-WT, BLAST SPRAYER	MAY 1999	.50		8.38		5.25	.00	15.80			35.18
MOW	52HP-WT, 9' ROTARY MOWER	JUN 1999	.50		4.95		4.81		.00			12.72
CALCIUM SPRAY	52HP-WT, BLAST SPRAYER	JUN 1999	.50	.60	8.38		5.25	.00	3.12	.39		21.92
HAND THINNING	HAND LABOR	JUN 1999	.00		.00			.00	.00			370.80
MOW	52HP-WT, 9' ROTARY MOWER	JUL 1999	.50	.55	4.95		4.81		.00	.17		12.67
TREE TRAINING	HAND LABOR	JUL 1999	.00		.00		187.50		50.00			242.84
CALCIUM SPRAY	52HP-WT, BLAST SPRAYER	JUL 1999	.50	.60	8.38		5.25	.00	3.12			21.83
MOW	52HP-WT, 9' ROTARY MOWER	AUG 1999	.50		4.95		4.81		.00			12.61
HARVEST	52HP-WT, BACKFORK	SEP 1999	9.96		64.88		95.90		.00			196.07
BIN HANDLING	52HP-WT, BIN TRAILER	SEP 1999	4.98	5.48	39.12	20.76	47.95	.00	.00			108.35
HARVEST(9.3 BIN)	PICKERS	SEP 1999	.00	.00	2.47		.00		.00			105.54
HARVEST(40.5 BN)	PICKERS	SEP 1999	.00	.00	10.75	.00	.00	729.00	.00	5.47	734.47	745.22
CHECK BINS	CHECKER FOR PICKING CREW	SEP 1999	.00		.00		76.20	.00	.00			76.77
LOAD FRUIT	52HP-WT, FORKLIFT	SEP 1999	1.96	2.15	20.44	12.04	18.81	.00	.00	.23	31.09	51.53
HAUL FRUIT	CUSTOM HAULING	SEP 1999	.00	.00	.00	.00	.00	149.40	.00			150.52
MOW	52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, 9' ROTARY MOWER 52HP-WT, 9' ROTARY MOWER HAND LABOR 52HP-WT, 9' ROTARY MOWER HAND LABOR 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, BLAST SPRAYER 52HP-WT, BACKFORK 52HP-WT, BIN TRAILER PICKERS PICKERS CHECKER FOR PICKING CREW 52HP-WT, FORKLIFT CUSTOM HAULING 52HP-WT, 9' ROTARY MOWER HAND LABOR INTEREST ON LAND 4-WHEEL ALL TERRAIN VEHICLE 1/2 TON PICKUP	OCT 1999	.50	.55	4.95	2.74	4.81	.00	.00	.00	7.55	12.50
GOPHER CONTROL	HAND LABOR	ANN 1999	.00	2.00	.00	.00	15.00	.00	1.28	.73	17.01	17.01
LAND COST	INTEREST ON LAND	ANN 1999	.00	.00	350.00	.00	.00	.00	.00	.00	.00	350.00
MISC USE	4-WHEEL ALL TERRAIN VEHICLE	ANN 1999	5.70	.00	12.50		.00	.00	.00	.26	6.00	18.51
MISC USE	1/2 TON PICKUP MACHINE SHED & SHOP SHOP TOOLS LAND OPERATOR MANAGEMENT	ANN 1999	7.14	.00	36.45	23.42	.00	.00	.00	1.05	24.47	60.92
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
TAXES	LAND	ANN 1999	.00	.00	98.25	.00	.00	.00	.00	.00	.00	98.25
MANAGEMENT	OPERATOR MANAGEMENT	ANN 1999	.00		250.00	.00	.00	.00	.00	.00	.00	250.00
OVERHEAD	UTILITIES, LEGAL, ACCTNG, ETC.	ANN 1999	.00	.00	.00			167.21	.00			167.21
INTEREST COST		ANN 1999	.00	.00	1833.54		.00	.00	.00	.00	.00	1833.54
TOTAL PER ACRE				194.90	3371.80	330.72	1511.42	1351.66			3511.40	6883.20

TABLE 206: MATERIALS AND SERVICES USED BY ORGANIC PRACTICES - 1999.

MATERIAL AND/OR SERVICE OPERATION -----March 2.1 gals. of Superior Oil @ \$2.60/gal. 10.0 lbs. of Microthiol @ 93¢/lb. Dormant Spray 1.0 beehive @ \$35.00/hive Rent Beehive April Frost Control April Irrigation charge & electricity @ \$18.75/acre Mildew Spray April 10.0 lbs. of Microthiol @ .93¢/lb. Season Irrigation charge & electricity Irrigate @ \$150.00/acre Hang Dispensers Season 400 ties @ 27.5¢/tie Insect/Foliar Spray May 2.0 lbs. of DiPel @ \$8.50/lb. 5.0 lbs. Solubor @ 80¢/lb. Foliar Spray May 4.0 gals. of lime sulfur @ \$3.95/gal. Calcium Spray June 6.0 lbs. calcium cloride @ 52¢/lb. Tree Training Tape & twine @ \$50/acre. July July 6.0 lbs. calcium cloride @ 52¢/lb. Calcium Spray September 40.5 bins of apples picked @ \$18.00/bin Harvest 9.3 bins of apples picked @ \$11.00/bin Haul Fruit September 49.8 bins of apples @ \$3.00/bin Gopher Control Annual 1.0 lb. of Gopher Getter @ \$1.28/lb. Annual 5% variable cost. Overhead \_\_\_\_\_\_

TABLE 306: ITEMIZED COST PER ACRE FOR ESTABLISHING A HIGH DENSITY GOLDEN DELICIOUS APPLE ORCHARD GROWN UNDER ORGANIC PRODUCTION PRACTICES - 1999.

	UNIT	PRICE OR COST/UNIT	OTTANTTTTV	COST	EVDW
VARIABLE COSTS SUPERIOR OIL MICROTHIOL LIME SULFUR DIPEL SOLUBOR CALCIUM CHLORIDE GOPHER GETTER RENT BEEHIVE TAPE & TWINE PHEROMONE DISPENSERS IRR. CHG. & ELECT. CUSTOM PICKING CUSTOM PICKING CUSTOM HAULING CASUAL LABOR LABOR (TRAC/MACH) TRACTOR REPAIR TRACTOR FUEL/LUBE MACHINERY REPAIRS	GAL. LB. GAL. LB. LB. LB. LB. ACRE	\$ 2.60 .93 3.95 8.50 .80 .52 1.28 35.00 50.00	2.10 20.00 4.00 2.00 5.00 12.00 1.00	\$ 5.46 18.60 15.80 17.00 4.00 6.24 1.28 35.00 50.00	
PHEROMONE DISPENSERS IRR. CHG. & ELECT. CUSTOM PICKING CUSTOM PICKING CUSTOM HAULING CASUAL LABOR LABOR(TRAC/MACH) TRACTOR REPAIR TRACTOR FUEL/LUBE MACHINERY REPAIRS MACHINE FUEL/LUBE INTEREST ON OP. CAP. OVERHEAD	DISP ACRE BIN BIN HOUR ACRE ACRE ACRE ACRE	.28 168.75 11.00 18.00 3.00 7.50 8.50 45.60 55.06 139.27 90.78 89.22	400.00 1.00 9.30 40.50 49.80 148.16 47.08 1.00 1.00 1.00	110.00 168.75 102.30 729.00 149.40 1111.20 400.22 45.60 55.06 139.29 90.78 89.22	
TOTAL VARIABLE COST	110112	207122	2.00	3511.40	
FIXED COSTS  TRACTOR DEPRECIATION TRACTOR INTEREST TRACTOR INSURANCE TRACTOR TAXES MACHINE DEPRECIATION MACHINE INTEREST MACHINE INSURANCE MACHINE TAXES LAND TAX - MATURE LAND COST MANAGEMENT INTEREST ON ESTAB.	ACRE ACRE ACRE ACRE ACRE ACRE ACRE ACRE	\$ 81.07 88.92 5.93 17.78 280.56 297.11 19.75 48.89 98.25 350.00 250.00 1833.54	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	\$ 81.07 88.92 5.93 17.78 280.56 297.11 19.75 48.89 98.25 350.00 250.00 1833.54	
TOTAL FIXED COST				3371.80	
TOTAL COST				6883.20	

Table 4o. Machinery and Building Complement

Machine Name	Purchase Price (\$)	Years of Use	Salvage Value (\$)	Annual Repair	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	
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	
Trailer	2,000	20	500	100	100	
Bin Trailer	3,500	10	700	300	350	
9' Rotary Mower	3,500	10	500	325	150	
Grape Spade Cultivator	5,000	10	0	100	400	
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 50: HOURLY AND PER ACRE MACHINERY COSTS

MACHINERY	PURCHASE PRICE	YEARS TO TRADE	ANNUAL HOURS	DEPREC- IATION	INTER- EST	INSUR- ANCE	TAXES	HOUSING	TOTAL FIXED COST	REPAIR	FUEL AND LUBE	TOTAL VARIABLE COST	TOTAL COST
	\$							COST P	ER HOUR-				
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
BACKFORK	200.00	20	150	.07	.06	.00	.01	.00	.14	.13	.00	.13	.28
PTO BLAST 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
TRAILER	2,000.00	20	100	.75	1.13	.08	.23	.00	2.18	1.00	.00	1.00	3.18
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
GRAPE SPADE CULT.	5,000.00	10	400	1.25	.56	.04	.11	.00	1.96	.25	.00	.25	2.21
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
								COST P	ER ACRE-				
MACHINE SHED & SHOP	₽ 30,000.00	30	_	14.29	19.29	1.29	3.86	.00	38.71	.71	.00	.71	39.43
SHOP TOOLS	10,000.00	20	_	7.14	6.43	.43	1.29	.00	15.29	.00	.00	.00	15.29
WIND MACHINE	16,000.00	30	_	42.67	86.40	5.76	17.28	.00	152.11	30.00	62.79	92.79	244.90
ALARM & THEMOM.	205.00	10	_	2.05	.92	.00	.00	.00	2.97	.00	.00	.00	2.97
PUMP & MAINLINES	1,000.00	30	_	33.33	45.00	3.00	9.00	.00	90.33	20.00	.00	20.00	110.33
IRRIGATION SYSTEM	1,150.00	20	_	57.50	51.75	3.45	.00	.00	112.70	30.00	.00	30.00	142.70
HOLDING POND	7,000.00	20	-	35.00	31.50	2.10	6.30	.00	74.90	10.00	.00	10.00	84.90

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