

Preface

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

- Capital, labor, and management resources
- Type, size, and age of machinery
- Cultural practices
- Size of farm and enterprise
- Crop yields
- Input prices
- Commodity prices

Costs can also be calculated differently depending on the intended use of the cost estimate. The information in this publication serves as a general guide for a modern and well-managed Northwest Washington farm as of 1993. To avoid drawing unwarranted conclusions about costs and returns for any particular farm or group of farms, closely examine the assumptions used in this publication. If they are not appropriate for the situation at hand, adjust the costs or returns. Blank spaces in budget tables are provided for these adjustments.

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COSTS OF ESTABLISHING A 10-ACRE JONAGOLD
APPLE ORCHARD IN NORTHWEST WASHINGTON

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This study presents estimated costs of establishing a 10-acre Jonagold apple orchard in northwest Washington. Growers, prospective growers, agricultural lenders, and others concerned with the Washington apple industry can use the information to estimate the physical and financial requirements of establishing plantings of Jonagold apples. While the acreages and practices outlined may not fit all conditions, they represent current trends. The study is of particular interest where new lands are being opened for plantings.

We recommend that individual growers use the blank spaces provided to adjust the budget tables to their orchard circumstances. Consult local Cooperative Extension agents and agribusiness field representatives for recommendations on field operations and farm inputs.

SOURCES OF INFORMATION

We interviewed area producers to identify field operations and machinery complements commonly used. These producers were considered to be representative of well-managed orchards. The quantities and types of materials, i.e., fertilizers, herbicides, and insecticides are based on recommended and widely used practices. We contacted local farm input suppliers for price information on materials and other services used by farmers.

BUDGET ASSUMPTIONS

The practices outlined in this publication represent the latest development in orchard design and planting on new orchard ground. The assumptions used in developing this information are:

1. The planted orchard area is 10 acres. However, some land is needed for roads, windbreaks, buildings, etc. Therefore, for this study, assume 11 acres of land will be required.

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2. The tree training system is commonly called a slender spindle. For detailed information on production practices, see the list of references on page 37.
3. Trees are nonspur varieties on dwarfing rootstock (M9). Each tree is supported by a separate vertical stake.
4. Tree spacing is 4.5 feet by 12 feet with pollenizer trees interset in every row. This spacing results in about 806 main variety trees plus 42 crabapple pollenizer trees, making a total of 848 trees per acre. Pollenizer trees are spaced approximately 90 feet apart and staggered in alternate rows.
5. A drip irrigation system is used.
6. Machinery fixed costs (depreciation and interest) are based on 1993 new machinery prices.
7. Cash rents for land are based on 1993 market rates.
8. Interest rates on operating capital and capital assets are 10 percent.
9. Yield estimates for years one through six follow. These yields assume the grower has a high level of skill and experience.

<u>Year</u>	<u>Bins/Acre</u>
1	0
2	5
3	15
4	25
5	40
6	45

Whether this is a new operation or an addition to an existing orchard, the establishment of 10 acres of new plantings requires additional labor, equipment, and machinery, and, perhaps, buildings. In planting new land rather than old orchard soils, better tree growth and perhaps earlier production would be likely.

Selection of cultivars and rootstocks will alter tree spacing and per-acre populations as well as growth and productivity.

The irrigation system assumes soil readily adaptable to the use of plastic pipe. Similarly, planting assumes a soil suitable for use of a tree planter, posthole digger, and drill.

Pesticides are listed for cost estimating purposes only. Check labels for actual pesticide use.

SUMMARY OF RESULTS

Table 1 summarizes production costs for years one through six. These production costs accumulate during the establishment period and are offset by returns from apple sales, which begin in year two. Production costs are composed of variable and fixed costs. Variable costs are the annual cash costs necessary to establish the orchard and produce apples. Example costs in year one are land preparation, planting trees, fertilizer, and chemicals.

Fixed costs reflect costs of owned equipment, land rent, and interest on the establishment costs that are charged to the apple enterprise.

TABLE 1. PER ACRE COSTS FOR ESTABLISHING AND PRODUCING JONAGOLD APPLES IN NORTHWESTERN WASHINGTON FOR YEARS ONE THROUGH SIX.

<u>YEAR</u>	<u>VARIABLE COST</u>	<u>FIXED COST</u>	<u>TOTAL COST</u>	<u>PRODUCTION VALUE¹</u>	<u>ACCUMULATED COST²</u>
1	\$8,907.34	\$ 886.23	\$ 9,793.57	--	\$ 9,793.57
2	1,755.28	1,901.15	3,656.43	1,250.00	12,200.00
3	2,415.80	2,304.63	4,720.44	3,750.00	13,170.44
4	2,229.69	2,384.70	4,614.39	6,250.00	11,534.83
5	2,936.26	2,311.65	5,247.91	10,000.00	6,782.74
6	3,329.34	1,926.01	5,255.35	11,250.00	788.09

¹ A price of \$250.00 per bin is assumed. See Table 2 for results with varying yield and per bin price for apples.

² Accumulated costs are the sum of total production costs for the current and previous years less the value of production.

Table 2 shows returns to management at varying yields per acre (bins) and prices per bin. Those combinations of yields and prices above the heavy line provide negative returns (losses) to management.

The table can also be used to estimate yield and price combinations necessary to produce a given return over total costs. For example, at a price of \$300 per bin and a yield of 30 bins per acre, the returns are \$4,128.30 per acre. The data is based on year 6 costs (Tables 8A and 8B) adjusted for harvest costs at each yield level.

TABLE 2. PER ACRE RETURNS TO MANAGEMENT, UNDER FULL PRODUCTION FOR VARYING APPLE YIELDS AND PER BIN PRICE.¹

BIN #	Price Per Bin				
	\$150	\$200	\$250	\$300	\$350
20	(\$1,615.70)	(\$ 615.70)	\$ 384.30	\$1,384.30	\$2,384.30
25	(\$ 993.70)	\$ 256.30	\$1,506.30	\$2,756.30	\$4,006.30
30	(\$ 371.70)	\$1,128.30	\$2,628.30	\$4,128.30	\$5,628.30
35	\$ 250.30	\$2,000.30	\$3,750.30	\$5,500.30	\$7,250.30
40	\$ 872.30	\$2,872.30	\$4,872.30	\$6,872.30	\$8,872.30
45	\$1,494.30	\$3,744.30	\$5,994.30	\$8,244.30	\$10,494.30

ANNUAL BUDGET DATA - TABLES A & B

The tree training and pruning expenses as outlined in Tables 3A through 8A represent the pruning and training requirements of a high-density, slender spindle orchard. Slender spindle trees are small, cone-shaped trees with a central leader. During the establishment years of the orchard (1-4), the orchardist ties branches down to a horizontal angle. This practice encourages fruit bud formation and production earlier in the life of the orchard. Once the branches contain fruit, it is often necessary to again tie the branch, this time with a string from the branch up to the support post. This prevents the branches from becoming too pendant with fruit. These labor-intensive tree training practices are reflected in the costs shown under pruning and training. In a high-density orchard, the majority of tree training occurs during the first four years. For detail on pruning and training, see the reference list on page 37.

Estimated costs for each year are shown in two types of tables (A and B). Tables A outline the schedule of field operations by calendar month, the type of equipment and labor used, and the hours used per acre for the apple orchard for each of the establishment years.

The costs of field operations are divided into two categories. The first is fixed costs--equipment, irrigation, buildings, and land rent. Land rent is used as a proxy for land ownership costs. The second category, variable costs, is associated with operating equipment, hiring labor, and purchasing services and materials. Total cost is the sum of fixed costs and variable costs.

Equipment fixed costs include depreciation, interest on the average investment, property taxes, and insurance. Per-hour fixed costs for equipment are determined by dividing the total annual fixed cost per machine by the annual hours of equipment use over all enterprises for the representative farm. For a specific field operation, equipment fixed costs are determined by multiplying the equipment hours per acre times the equipment per-hour fixed cost.

Variable costs depend directly on the number of acres farmed. These costs include fuel, oil, repairs, machinery operating labor, fertilizer, chemicals, custom work, overhead, and interest on operating capital. Cost details are outlined in extensive footnotes for each table A.

Tables B present summaries of itemized costs. Most items are self-explanatory.

First Year

At planting time, it is assumed that the orchardist is planting high-quality feathered or branched trees (trees that are 5/8" and larger in caliper with four to seven well-spaced branches.) At planting the central leader is cut 8 to 12 inches above the topmost branch. Vigorous new shoots from the cut made on the central leader are either pinched out during the early summer or trained to a more horizontal angle. Later in the summer, after terminal bud set, the scaffold branches are tied down with string to a near horizontal angle.

It was assumed that the land was previously in a sod crop. Land preparation costs can be highly variable, depending on the particular site. For this study, it was assumed that all pre-planting soil preparation would be custom work. In addition, \$6.00 per acre would be spent for a soil fertility analysis from a commercial laboratory.

Table 3A outlines the schedule of field operations by calendar month, the type of machinery and labor used, and the hours used per acre during the first year of establishment. Table 3B presents a summary of per-acre costs, totaling \$9,793.57.

¹ A return to management is based on accounting for all costs except management incurred in apple production.

Second Year

Tree training the second year includes tying the central leader to the support post at an angle that is 45° from vertical. New growth from the central leader, after tying, is trained again to a 45° angle in the opposite direction.

The loss of newly planted trees is generally very minimal. In this study, it was assumed that for the ten acres, six main variety trees were lost and had to be replanted in the second year. Harvest was budgeted at 5 bins per acre (875 pounds per bin). Due to the production of fruit in the second year, Northwest Washington growers usually begin spraying for the control of insects in the second year. Second-year production costs totaled \$3,656.43 per acre.

Third Year

Pruning and training costs increase due to larger trees and the addition of more limb spreaders to the training operation. In the third year, most producers begin spraying to prevent mildew. In this study, it was assumed that 15 bins of apples were harvested in the third year. With such a light crop, bins are typically not distributed within the field but loaded on a backfork that follows the pickers through the field. Third-year establishment costs totaled \$4,720.44 per acre.

Fourth Year

When the planting is in the fourth year, orchardists generally can expect to obtain approximately 25 bins of apples per acre from dwarf trees at this spacing. As the trees start to produce more fruit, less emphasis is on tree training and more on pruning, controlling tree growth, and controlling orchard pests. Fourth-year establishment costs totaled \$4,614.39.

Fifth Year

In year five, trees are near maturity. Harvest is expected to be 40 bins per acre. A system of bin distribution plus some formal harvest supervision must be established at harvest time. Fifth-year establishment costs totaled \$5,247.91.

Sixth Year

This budget represents activities to be included in maintaining a mature orchard. Harvest is expected to be 45 bins per acre. Per-acre costs are \$5,255.35.

Appendix Tables

Appendix Table A gives the equipment and building complement used to derive the cost estimates, including current purchase prices, annual hours of use, and per-hour fixed and variable costs.

Appendix Table B indicates the prices for fuel, fertilizer, chemicals, tree stock, and other selected inputs used in deriving these budgets.

Appendix Table C outlines investment and annual fixed costs for a trickle irrigation system.

CONCLUSION

The estimates in this publication rest on many assumptions. In planting 10 acres of ground, the dimensions of the field, topography, and the need for roads reduces the number of actual acres of orchard. The need for windbreaks, buildings, and service areas may reduce the area even further.

Also, it was assumed that the land, irrigation system, machinery, equipment, and buildings would be purchased. No consideration was given for employee housing.

The situation outlined is not characteristic of all orchard operations. For example, many economies can be gained by adding this acreage to existing farm operations. Conversely, added costs can be anticipated when the planting represents a separate business enterprise. Use this publication as a guide; considerable judgment must be exercised in generalizing cost estimates to situations differing from those outlined here.

SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE⁽¹¹⁾
FOR ESTABLISHING A 10-ACRE JONAGOLD APPLE ORCHARD
IN NORTHWEST WASHINGTON; YEAR ONE

TABLE 3A.

(CONT'D.)

OPERATION	TOOLING	MTH	YEAR	MACH	LABOR	HOURS	VARIABLE COST			TOTAL	VARIABLE	TOTAL
							FIXED	FUEL, LUBE, & REPAIRS	LABOR			
SOIL ANALYSIS	CUSTOM SOIL TESTS	OCT	1992	\$.00	\$.00	\$.00	\$.00	\$.00	\$.00	\$.05	\$.05	\$.05
SOIL PREPARATION	CUSTOM DISK AND CHISEL	OCT	1992	.00	.00	.00	.00	.00	40.00	.33	40.33	40.33
FERTILIZE	CUSTOM FERTILIZE	[3]	OCT	1992	.00	.00	.00	.00	7.00	52.00	3.44	62.44
DOLOMITE	CUSTOM DOLOMITE 3T/ACRE	OCT	1992	.00	.00	.00	.00	.00	294.00	2.45	296.45	296.45
SOIL PREPARATION	CUSTOM CULTIMULCH	OCT	1992	.00	.00	.00	.00	.00	20.00	.17	20.17	20.17
WEED CONTROL	40HP; WEED SPRAYER	[1]	OCT	1992	.28	.33	7.46	1.18	3.00	47.00	.43	51.60
SOIL PREPARATION	CUSTOM ROTOTILL FOR COVER	APR	1993	.00	.00	.00	.00	.00	20.00	.00	1.17	21.17
BED PREPARATION	40HP WITH RENTED BLADE	APR	1993	1.00	1.10	17.59	2.56	9.90	7.50	.00	1.16	21.13
LAYOUT AND STAKE	HAND LABOR	APR	1993	.00	.00	.00	.00	.00	30.00	5.00	2.04	37.04
HAUL TREES	40HP; TRAILER	APR	1993	.25	.30	6.39	1.00	17.72	.00	1.09	19.81	26.21
PLANT TREES	RENT 100HP/PLANTER; LABOR	APR	1993	.00	.00	.00	.00	.00	150.00	.00	4352.40	4765.04
PLANT POLLENIZER	HAND LABOR	APR	1993	.00	.00	.00	.00	.00	15.00	.00	199.50	227.01
INSTALL POSTS	SOIL PREPARATION	APR	1993	.00	.00	.00	.00	.00	45.00	1612.00	96.66	1753.66
SOIL PREPARATION	CUSTOM ROTOTILL/SUBSOIL	APR	1993	.00	.00	.00	.00	.00	40.00	.00	2.33	42.33
SOIL COVER CROP	40HP; RENTED GRAIN DRILL	APR	1993	1.00	1.10	17.59	2.56	9.90	9.00	28.88	2.94	70.87
PRUNE LEADERS	PRUNING TOOLS; HAND LABOR	APR	1993	.00	.00	.00	.00	.00	30.00	.00	1.75	31.75
PEST CONTROL	40HP; AIR SPRAYER	[4]	APR	1993	.28	.33	8.82	2.53	3.00	.00	32.62	2.23
PEST CONTROL	40HP; AIR SPRAYER	[5]	APR	1993	.28	.33	8.82	2.53	3.00	.00	9.67	.89
PAINT TREE TRUNK	40HP; SPRAYER	[2]	APR	1993	.07	.08	1.86	.30	.75	.00	47.00	2.80
HOE AROUND TREES	HAND LABOR	APR	1993	.00	.00	.00	.00	.00	45.00	.00	20.49	68.76
PEST CONTROL	40HP; FLAIL MOWER	APR	1993	.00	.00	.00	.00	.00	105.00	.00	6.25	116.81
PEST CONTROL	40HP; AIR SPRAYER	[4]	JUN	1993	.28	.33	8.82	2.53	3.00	.00	32.62	1.91
MOW ORCHARD	40HP; AIR SPRAYER	[5]	JUN	1993	.28	.33	8.82	2.53	3.00	.00	40.37	49.20
IN-ROW WEED CTRL	40HP; FLAIL MOWER	[5]	JUN	1993	.28	.33	8.82	2.53	3.00	.00	9.67	16.08
IN-ROW WEED CTRL	40HP; SPRAYER	[6]	JUL	1993	.28	.33	7.46	1.18	3.00	.00	16.59	.69
IN-ROW WEED CTRL	40HP; SPRAYER	[6]	AUG	1993	.28	.33	7.46	1.18	3.00	.00	16.59	.52
TIE DOWN BRANCH	HAND LABOR	AUG	1993	.00	.00	.00	.00	.00	165.00	.00	10.00	179.38
MOW ORCHARD	40HP; FLAIL MOWER	AUG	1993	.90	1.09	20.86	3.93	9.78	.00	.00	.34	34.91
DISEASE CONTROL	40HP; AIR SPRAYER	[7]	SEP	1993	.28	.33	8.82	2.53	3.00	.00	16.73	.37
MOW ORCHARD	40HP; FLAIL MOWER	[7]	OCT	1993	.90	1.09	20.86	3.93	9.78	.00	.00	11
IN-ROW WEED CTRL	40HP; SPRAYER	[2]	NOV	1993	.28	.33	7.46	1.18	3.00	.00	37.07	.00
RODENT CONTROL	HAND LABOR	[8]	NOV	1993	.00	.00	.00	.00	15.00	.00	4.00	19.00

SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE
FOR ESTABLISHING A 10-ACRE JONAGOLD APPLE ORCHARD
IN NORTHWEST WASHINGTON; YEAR ONE¹¹

TABLE 3A.

(CONT'D.)

OPERATION	TOOLING	MTH	YEAR	MACH	LABOR	HOURS	VARIABLE COST			TOTAL	VARIABLE	TOTAL
							FIXED	FUEL, LUBE, & REPAIRS	LABOR			
LAND RENT	PER ACRE COST	ANN	1993	\$.00	\$.00	\$ 125.00	\$.00	\$.00	\$.00	\$.00	\$.00	\$ 125.00
OVERHEAD	5% VARIABLE COSTS	ANN	1993	.00	.00	.00	.00	.00	424.16	.00	.00	424.16
MISC. COSTS	SHOP; SHOP TOOLS	ANN	1993	.00	.00	46.37	.00	.00	.00	.00	.00	46.37
PICKUP TRUCK	MISC USE	ANN	1993	5.00	5.50	46.88	21.77	49.50	.00	.00	3.56	74.83
IRRIGATION	Drip Irrigation Sys.	[10]	ANN	1993	.00	439.50	.00	30.00	54.54	12.50	4.85	541.39
FERTIGATE	Thru Irrigation Sys.	[9]	SEA	1993	.00	.00	.00	.00	12.69	.63	13.32	13.32
TOTAL PER ACRE							\$13.94	\$16.09	\$886.23	\$66.32	\$819.89	\$967.20
							\$6623.57	\$430.42	\$8907.34	\$9793.57		

[1] 400 LBS/SULPOMAG

[2] .25 GAL/AC SURFLAN AS; 1.5 QT GRANOXONE EXTRA

[3] 400 LB/AC MAP (11-5-0)

[4] .375 LB/AC BAYLETON 50DF; .75 LB/AC SYLLIT 65WP; 3 LB/AC LORSBAN 50W; 1 LB/AC R56

[5] .375 LB/AC BAYLETON 50DF; .75 LB/AC SYLLIT 65WP; 1 LB/AC R56

[6] 1.5 QT/AC GRANOXONE EXTRA

[7] 7.5 LB/AC ZIRAM 76

[8] 5 LB/HYPHOS; 10 GAL/SORBA ZKP; 15 LB/UREA

[9] * 100 LB/AC UREA; 5 LB/AC HYPOS

[10] IRRIGATION - LABOR/4 HRS; POWER/\$13.04; MAINT/\$41.50; 2.5 GAL/CHLORINE; DEPREC/\$270.64; INTEREST/\$125.08; INS & TAXES/\$43.78

[11] IF FUMIGATION IS REQUIRED IN A REPLANT SITUATION, THESE COSTS WOULD NEED TO BE ADDED.

ITEMIZED COST PER ACRE FOR ESTABLISHING
A 10-ACRE JONAGOLD APPLE ORCHARD IN
NORTHWEST WASHINGTON; YEAR ONE

TABLE 3B.

		PRICE OR UNIT COST/UNIT QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS				
SOIL ANALYSIS	ACRE	\$ 6.00	1.00	\$ 6.00
CUSTOM DISK	ACRE	20.00	1.00	20.00
CUSTOM CHISEL	ACRE	20.00	1.00	20.00
CUSTOM LIME 3T/A	TON	98.00	3.00	294.00
CUSTOM CULTIMULCH	ACRE	20.00	1.00	20.00
SUL-PO-MAG	LB	.12	800.00	94.00
RENT POSTHOLE AGR	DAY	45.00	1.00	45.00
2" STAKES	EACH	2.00	806.00	1612.00
FERTILIZE	ACRE	7.00	1.00	7.00
MAP (11-55-0)	LB	.13	400.00	52.00
CRABAPPLE POLINATOR	EACH	4.75	42.00	199.50
DRILL RENTAL	ACRE	9.00	1.00	9.00
COMPANION GRASS	LB	1.65	17.50	28.88
SYLLIT 65WP	LB	11.00	4.50	49.50
BAYLETON 50DF	OZ	3.37	2.28	7.56
LORSBAN 50W	LB	7.65	9.00	68.85
SPREADER R-56	OZ	.16	6.00	.96
SCRAPER BLADE	ACRE	7.50	1.00	7.50
ROTOTIL-SUBSOIL	ACRE	40.00	1.00	40.00
LAYOUTSTAKE MTL	ACRE	5.00	1.00	5.00
RENT TRACTOR/PLANTER	ACRE	75.00	1.00	75.00
JONAGOLD BRANCHED	EACH	5.40	806.00	4352.40
CUSTOM ROTOTILL	ACRE	20.00	1.00	20.00
TREETHRUNK PAINT	GAL	5.00	3.50	17.50
CARWASH MITT	EACH	2.99	1.00	2.99
TAPE/TWINE	ACRE	25.00	.25	6.25
GRAMOXONE EXTRA	QT	11.06	4.50	49.77
KITE STRING	ROLL	5.00	2.00	10.00
ZIRAM 76	LB	2.23	7.50	16.73
SURFLAN AS	GAL	81.90	.25	20.48
ROZOL	LB	4.00	1.00	4.00
CHLORINE	GAL	5.00	2.50	12.50
UREA	LB	.15	15.00	2.25
HYPHOS	LB	1.08	5.00	5.40
SORBA ZKP	QT	3.36	1.50	5.04
TRACTOR REPAIR	ACRE	10.96	1.00	10.96
TRACTOR FUEL/LUBE	ACRE	35.51	1.00	35.51
MACHINERY REPAIRS	ACRE	19.86	1.00	19.86
IRRIGATION POWER	ACRE	13.04	1.00	13.04
IRRIGATION MAINT	ACRE	41.50	1.00	41.50
IRRIGATION LABOR	HOUR	7.50	4.00	30.00
HAND LABOR	HOUR	7.50	76.00	570.00
LABOR(TRAC/MACH OPER)	ACRE	144.83	1.00	144.83
OVERHEAD	ACRE	424.16	1.00	424.16
INTEREST ON OPER CAP	DOL	.10	4304.22	430.42
TOTAL VARIABLE COST				
			\$8907.34	

TOTAL VARIABLE COST

ITEMIZED COST PER ACRE FOR ESTABLISHING
A 10-ACRE JONAGOLD APPLE ORCHARD IN
NORTHWEST WASHINGTON; YEAR ONE

TABLE 3B. (CONT'D)

		PRICE OR UNIT COST/UNIT QUANTITY	VALUE OR COST	YOUR FARM
FIXED COSTS				
EQUIPMENT:				
DEPRECIATION	ACRE	\$ 137.21	1.00	\$ 137.21
INTEREST	ACRE	93.01	1.00	93.01
INSURANCE	ACRE	6.20	1.00	6.20
TAXES	ACRE	18.60	1.00	18.60
HOUSING	ACRE	10.33	1.00	10.33
PRUNING TOOLS	ACRE	10.00	1.00	10.00
SHOP TOOLS	ACRE	19.37	1.00	19.37
MACHINE SHED/SHOP	ACRE	27.00	1.00	27.00
IRRIGATION:				
DEPRECIATION	DOL	270.64	1.00	270.64
INTEREST	DOL	125.08	1.00	125.08
INS/TAXES	DOL	43.78	1.00	43.78
LAND RENT	ACRE	125.00	1.00	125.00
TOTAL FIXED COST				
			\$886.23	
TOTAL COST				
			\$9793.57	

SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE
FOR ESTABLISHING A 10-ACRE JONAGOLD APPLE ORCHARD
IN NORTHWEST WASHINGTON; YEAR TWO

TABLE 4A.

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR	TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.	VARIABLE COST	TOTAL COST
SOIL ANALYSIS	CUSTOM SOIL TESTS	OCT	1993	\$.00	\$.00	\$.00	\$.00	\$.00	\$.00	\$.00	\$.05	\$ 6.05	\$ 6.05
IN-ROW WEED CTRL	40HP;SPRAYER	[15]	NOV 1993	.00	.00	.00	.00	.00	.00	49.11	.00	49.11	49.11
WINTER PRUNE	HAND LABOR;CUT RISERS	FEB	1994	.00	5.00	.00	52.50	.00	.00	3.94	.00	56.44	61.44
DELAY DORMANT	40HP;AIR SPRAYER	[1]	MAR 1994	.28	.33	8.82	2.53	3.00	.00	7.38	.86	13.77	22.59
REPLANT	REPLANT TREES; HAND LABOR	MAR	1994	.00	.00	.00	.00	15.00	.00	32.40	3.16	50.56	50.56
IN-ROW WEED CTRL	40HP;SPRAYER	[2]	MAR 1994	.28	.33	8.82	2.53	3.00	.00	37.07	2.84	45.43	54.43
DISEASE CONTROL	40HP;AIR SPRAYER	[3]	MAR 1994	.28	.33	8.82	2.53	3.00	.00	11.00	1.10	17.63	26.45
PEST CONTROL	40HP;AIR SPRAYER	[4]	APR 1994	.28	.33	8.82	2.53	3.00	.00	31.24	2.14	38.91	47.73
PEST CONTROL	40HP;AIR SPRAYER	[5]	APR 1994	.28	.33	8.82	2.53	3.00	.00	21.40	1.57	28.49	37.31
DISEASE CONTROL	40HP;AIR SPRAYER	[6]	APR 1994	.28	.33	8.82	2.53	3.00	.00	13.79	1.13	20.44	29.26
PEST CONTROL	40HP;AIR SPRAYER	[7]	MAY 1994	.28	.33	7.46	1.18	3.00	.00	16.69	1.04	21.91	29.37
PEST/NUTRIENTS	40HP;AIR SPRAYER	[8]	MAY 1994	.28	.33	8.82	2.53	3.00	.00	26.46	1.60	33.39	42.41
TREE TRAINING	HAND LABOR;TIE LEADERS	MAY	1994	.00	.00	.00	.00	300.00	.00	25.00	16.25	341.25	341.25
PEST/NUTRIENTS	40HP;AIR SPRAYER	[9]	JUN 1994	.28	.33	8.82	2.53	3.00	.00	14.48	.83	20.83	29.66
PEST/NUTRIENTS	40HP;AIR SPRAYER	[10]	JUN 1994	.28	.33	8.82	2.53	3.00	.00	16.98	.94	23.44	32.26
IN-ROW WEED CTRL	40HP;SPRAYER	[12]	JUN 1994	.28	.33	8.82	2.53	3.00	.00	37.07	1.77	44.36	53.19
HAND THINNING	HAND LABOR	JUN	1994	.00	.00	.00	.00	37.50	.00	.00	1.56	39.06	39.06
TREE TRAINING	HAND LABOR;WEIGHT LIMBS	JUL	1994	.00	.00	.00	.00	300.00	.00	25.00	10.83	335.83	335.83
PEST/NUTRIENTS	40HP;AIR SPRAYER	[11]	JUL 1994	.28	.33	8.82	2.53	3.00	.00	11.18	.56	17.26	26.08
NUTRIENTS	40HP;AIR SPRAYER	[12]	SEP 1994	.56	.66	17.64	5.06	6.00	.00	5.00	.26	16.32	33.96
HARVEST (5 BINS)	40HP;LOADER;HAND LABOR	[16]	OCT 1994	2.00	2.20	32.57	8.30	102.30	.00	.00	.92	111.52	144.10
HAUL FRUIT	CUSTOM HAULING	OCT	1994	.00	.00	.00	.00	12.50	.00	.00	.10	12.60	12.60
RODENT CONTROL	HAND LABOR	[13]	ANN 1994	.00	.00	.00	.00	15.00	.00	4.00	.95	19.95	19.95
IRRIGATION	DRIP IRRIGATION	ANN	1994	.00	.00	439.50	.00	30.00	54.54	12.50	4.85	101.89	541.39
MISC. COSTS	SHOP-SHOP TOOLS	ANN	1994	.00	.00	46.37	.00	.00	.00	.00	.00	.00	.00
INTEREST	INTEREST ON ESTAB COST	ANN	1994	.00	.00	979.36	.00	.00	.00	.00	.00	.00	979.36
PICKUP TRUCK	MISC USE	ANN	1994	5.00	5.50	46.88	21.77	49.50	.00	.00	3.56	74.83	121.71
LAND RENT	PER ACRE COST	ANN	1994	.00	.00	125.00	.00	.00	.00	.00	.00	.00	125.00
OVERHEAD	5% VARIABLE COSTS	ANN	1994	.00	.00	.00	.00	83.58	.00	.00	.00	83.58	83.58
FERTIGATE	THRU IRRIGATION SYSTEM	[14]	SEA 1995	.00	.00	.00	.00	.00	.00	29.50	1.47	30.98	30.98
FERTIGATE	THRU IRRIGATION SYS.	[14]	SEA 1994	.00	.00	.00	.00	.00	.00	26.00	1.30	27.30	27.30
MOW ORCHARD	40HP;FLAIL MOWER;APR-OCT	SEA 1994	4.49	5.43	104.31	19.64	48.89	.00	.00	3.43	71.96	176.27	
TOTAL PER ACRE				\$15.34	\$17.79	\$1901.15	\$83.76	\$992.69	\$156.62	\$69.04	\$755.28	\$3656.43	

- [1] 1.5 GAL/SUPERIOR OIL; 1 PT/LORSBAN 4E; 3 LB/ZINC 50
- [2] .25 GAL/AC SURFLAN AS; 1.5 QT/GRAMOXONE EXTRA
- [3] 1.25 OZ/RALLY 4OH; 1.25 LB/ZIRAM; 1 LB/SOLUBOR; 4 OZ/R-56
- [4] 4 OZ/RUBIGAN; 2 LB/DITHANE M45; 4 LB/SORBA 2KP; 4 OZ/R-56
- [5] 1.5 OZ/BAYLETON 50DF; .75 LB/AC SYLLIT 65WP; 1 LB/THIODAN 50WP; 4 OZ/AC R-56; 1 LB/AC SOLUBOR
- [6] 4 OZ/RUBIGAN EC; 1.25 LB/ZIRAM 76; 4 OZ/AC R-56
- [7] 1.25 OZ/RALLY 4OH; 1.5 LB/CAP'TAN 50WP; .75 LB/LORSBAN 50W; 4 OZ/AC R-56
- [8] 4 OZ/RUBIGAN EC; 1.5 LB/CAP'TAN 50WP; 4 OZ/AC R-56; 5 LB/NUTRA PHOS 24; 15 LB/EPSOM SALTS
- [9] 1.25 OZ RALLY 4OH; 1.25 LB/ZIRAM; 15 LB/EPSOM SALTS; 4 OZ/AC R-56
- [10] 4 OZ/RUBIGAN EC; 1.25 LB/ZIRAM; .625 LB/GUTHION 35WP; 4 OZ/AC R-56
- [11] .625 LB/GUTHION 35WP; 5 LB/NUTRA PHOS 24; 4 OZ/AC R-56
- [12] 2.5 LB/MORALEAF CALCIUM
- [13] 1 LB/AC ROZOL
- [14] 50 LB/AC UREA; 100 LB/KCS; 100 LB/EPSOM SALTS (SEPARATE APPLICATION)
- [15] 5 LB/AC SURFLAN AS; 1.875 LB/AC PRINCEP 80W
- [16] HARVEST/BIN

ITEMIZED COST PER ACRE FOR ESTABLISHING
A 10-ACRE JONAGOLD APPLE ORCHARD IN
NORTHWEST WASHINGTON; YEAR TWO

TABLE 4B.

		PRICE OR UNIT COST/UNIT QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS				
SOIL ANALYSIS	ACRE	\$ 6.00	1.00	\$ 6.00
SURFLAN AS	GAL	81.90	1.00	81.90
PRINCEP 80W	LB	4.35	1.88	8.16
GRAMOXONE EXTRA	QT	11.06	3.00	33.18
RALLY 40W	OZ	5.30	3.75	19.89
ZIRAM 76	LB	2.23	5.00	11.16
SOLUBOR	LB	.95	2.00	1.90
SPREADER R-56	OZ	.16	33.50	5.36
JONAGOLD BRANCHED	EACH	5.40	6.00	32.40
SUPERIOR OIL	GAL	2.75	1.50	4.12
LORSBAN 4E	OZ	.41	1.00	.41
ZINC 50	LB	.95	3.00	2.85
RUBIGAN EC	QT	2.59	16.00	41.44
SYLLIT 65WP	LB	11.00	.75	8.25
BAYLETON 50DF	OZ	3.37	1.50	5.06
THIODAN 50WP	LB	6.50	1.00	6.50
DITHANE M45	LB	3.60	2.00	7.20
SORBA ZKP	QT	3.36	4.00	13.44
TAPE/TWINE	ACRE	25.00	1.00	25.00
CAPTAN 50WP	LB	2.46	3.00	7.38
NUTRA PHOS 24	LB	1.47	10.00	14.70
EPSOM SALTS	LB	.29	130.00	38.36
LORSBAN 50W	LB	7.65	.75	5.74
GUTHION 35WP	LB	5.10	1.26	6.38
CUP WEIGHTS YR2	ACRE	25.00	1.00	25.00
MORALEAF CALCIUM	LB	1.00	5.00	5.00
ROZOL	LB	4.00	1.00	4.00
UREA	LB	.15	100.00	15.00
KCL	LB	.11	100.00	11.00
CHLORINE	GAL	5.00	2.50	12.50
TRACTOR REPAIR	ACRE	13.14	1.00	13.14
TRACTOR FUEL/LUBE	ACRE	40.46	1.00	40.46
MACHINERY REPAIRS	ACRE	30.16	1.00	30.16
IRRIGATION POWER	ACRE	13.04	1.00	13.04
IRRIGATION MAINT	ACRE	41.50	1.00	41.50
IRRIGATION LABOR	HOUR	7.50	4.00	30.00
PICKING HAND	BIN	15.00	5.00	75.00
CUSTOM HAUL HARVEST	BIN	2.50	5.00	12.50
HAND LABOR	HOUR	7.50	97.00	727.50
LABOR(TRAC/MACH OPER)	ACRE	160.12	1.00	160.12
OVERHEAD	ACRE	83.58	1.00	83.58
INTEREST ON OPER CAP	DOL	.10	690.41	69.04

TOTAL VARIABLE COST

1755.28

ITEMIZED COST PER ACRE FOR ESTABLISHING
A 10-ACRE JONAGOLD APPLE ORCHARD IN
NORTHWEST WASHINGTON; YEAR TWO

TABLE 4B. (CONT'D)

		PRICE OR UNIT COST/UNIT QUANTITY	VALUE OR COST	YOUR FARM
FIXED COSTS				
EQUIPMENT:				
DEPRECIATION	ACRE	\$157.18	1.00	\$157.18
INTEREST	ACRE	107.96	1.00	107.96
INSURANCE	ACRE	7.20	1.00	7.20
TAXES	ACRE	21.59	1.00	21.59
HOUSING	ACRE	12.00	1.00	12.00
PRUNING TOOLS	ACRE	5.00	1.00	5.00
SHOP TOOLS	ACRE	19.37	1.00	19.37
MACHINE SHED/SHOP	ACRE	27.00	1.00	27.00
IRRIGATION:				
DEPRECIATION	DOL	270.64	1.00	270.64
INTEREST	DOL	125.08	1.00	125.08
INS/TAXES	DOL	43.78	1.00	43.78
ACCUM COST	ACRE	979.36	1.00	979.36
LAND RENT	ACRE	125.00	1.00	125.00
TOTAL FIXED COST				\$1901.15
TOTAL COST				\$3656.43

SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE
FOR ESTABLISHING A 10-ACRE JONAGOLD APPLE ORCHARD
IN NORTHWEST WASHINGTON; YEAR THREE

TABLE 5A.

OPERATION	TOOLING	MTH	YEAR	MACH LABOR HOURS	TOTAL FIXED COST	VARIABLE COST			TOTAL VARIABLE COST
						FUEL, LUBE, & REPAIRS	LABOR	SERVICE	
SOIL ANALYSIS	CUSTOM SOIL TESTS	OCT	1994	\$.00	\$.00	\$.00	\$.00	\$.00	\$.05
IN-ROW WEED CTRL	40HP;SPRAYER	[17]	NOV 1994	.28	.33	7.46	1.18	3.00	49.11
WINTER PRUNE	HAND LABOR;CUT RISERS	FEB	1995	.00	.00	5.00	.00	150.00	.00
DELAY DORMANT	40HP;AIR SPRAYER	[1]	MAR 1995	.28	.33	8.82	2.53	3.00	7.38
DISEASE CONTROL	40HP;SPRAYER	[3]	MAR 1995	.28	.33	7.46	1.18	3.00	.00
PEST CONTROL	40HP;AIR SPRAYER	[4]	APR 1995	.28	.33	8.82	2.53	3.00	.00
PEST CONTROL	40HP;AIR SPRAYER	[5]	APR 1995	.28	.33	8.82	2.53	3.00	.00
DISEASE CONTROL	40HP;AIR SPRAYER	[6]	APR 1995	.28	.33	8.82	2.53	3.00	.00
PEST CONTROL	40HP;AIR SPRAYER	[7]	MAY 1995	.28	.33	8.82	2.53	3.00	.00
RUSSET CONTROL	40HP;AIR SPRAYER	[8]	MAY 1995	.56	.66	17.64	5.06	6.00	29.20
PEST/NUTRIENTS	40HP;AIR SPRAYER	[9]	MAY 1995	.28	.33	8.82	2.53	3.00	.00
TREE TRAINING	HAND LABOR;TIE LEADERS	MAY	1995	.00	.00	.00	.00	300.00	.00
PEST/NUTRIENTS	40HP;AIR SPRAYER	[10]	JUN 1995	.28	.33	8.82	2.53	3.00	.00
PEST/NUTRIENTS	40HP;AIR SPRAYER	[11]	JUN 1995	.28	.33	8.82	2.53	3.00	.00
IN-ROW WEED CNTL	40HP;AIR SPRAYER	[12]	JUN 1995	.28	.33	8.82	2.53	3.00	.00
HAND THINNING	HAND LABOR	JUN	1995	.00	.00	.00	.00	120.00	.00
TREE TRAINING	HAND LABOR	JUL	1995	.00	.00	.00	.00	300.00	.00
PEST/NUTRIENTS	40HP;AIR SPRAYER	[12]	JUL 1995	.28	.33	8.82	2.53	3.00	.00
TIE FRUIT LIMBS	HAND LABOR	SEP	1995	.00	.00	.00	.00	75.00	.00
NUTRIENTS	40HP;AIR SPRAYER	[13]	SEP 1995	.56	.66	17.64	5.06	6.00	37.07
HARVEST(15 BINS)	40HP/LOADER;HAND LABOR	[16]	OCT 1995	10.00	11.00	162.85	41.52	335.25	1.77
HAUL FRUIT	CUSTOM HAULING	OCT	1995	.00	.00	.00	.00	300.00	.00
DISEASE CONTROL	40HP;AIR SPRAYER	[19]	OCT 1995	.28	.33	8.82	2.53	3.00	.00
RODENT CONTROL	HAND LABOR	[14]	ANN 1995	.00	.00	.00	.00	15.00	.00
IRRIGATION	DRIP IRRIGATION	ANN	1995	.00	.00	439.50	.00	30.00	54.54
MISC. COSTS	SHOP;SHOP TOOLS	ANN	1995	.00	.00	46.37	.00	.00	37.50
INTEREST	INTEREST ON ESTAB COSTS	ANN	1995	.00	.00	1220.00	.00	.00	37.50
PICKUP TRUCK	MISC USE	ANN	1995	5.00	5.50	46.88	21.77	49.50	27.60
LAND RENT	PER ACRE COST	ANN	1995	.00	.00	125.00	.00	.00	.00
OVERHEAD	5% VARIABLE COSTS	ANN	1995	.00	.00	.00	.00	115.04	.26
FERTIGATE	THRU IRRIGATION SYS.	[15]	SEA 1995	.00	.00	.00	.00	.00	3.14
IN-ROW WEED CTRL	THRU IRRIGATION SYSTEM	[15]	SEA 1995	.00	.00	.00	.00	.00	.00
MOW ORCHARD	40HP;SPRAYER	[18]	SEA 1995	.28	.33	7.46	1.18	3.00	.00
	40HP;FLAIL MOWER;APR-OCT	SEA 1995	4.49	5.43	104.31	19.64	48.89	.00	.00
TOTAL PER ACRE				\$24.44	\$27.92	\$2304.63	\$124.39	\$1477.64	\$213.08
							\$518.27		\$82.52
									\$2415.80
									\$4720.44

- [1] 1.5 GAL/SUPERIOR OIL; 1 PT/LORSBAN 4E; 3 LB/ZINC 50
- [2] 25 GAL/AC SURFLAN AS; 1.5 QT/GRANOXONE EXTRA
- [3] 1.25 OZ/RALLY 40W; 1.25 LB/ZIRAM; 1 LB/SOLUBOR; 4 OZ/R-56
- [4] 4 OZ/RUBIGAN; 2 LB/DITHANE M45; 4 LB/SORBA ZKP; 4 OZ/R-56
- [5] 1.5 OZ/BAYLETON 50DF; .75 LB/AC SYLLIT 65WP; 1 LB/THIODAN 50WP; 4 OZ/AC R-56; 1 LB/AC SOLUBOR
- [6] 4 OZ/RUBIGAN EC; 1.25 LB/ZIRAM 76; 4 OZ/AC R-56
- [7] 1.25 OZ/RALLY 40W; 1.5 LB/CAPTAN 50WP; .75 LB/LORSBAN 50W; 4 OZ/AC R-56
- [8] 10 OZ/PROVIDE (OPTIONAL SPRAY)
- [9] 4 OZ/RUBIGAN EC; 1.5 LB/CAPTAN 50WP; 4 OZ/AC R-56; 5 LB/NUTRA PHOS 24; 15 LB/EPSOM SALTS
- [10] 1.25 OZ RALLY 40W; 1.25 LB/ZIRAM; 15 LB/EPSON SALTS; 4 OZ/AC R-56
- [11] 4 OZ/RUBIGAN EC; 1.25 LB/ZIRAM; .625 LB/GUTHION 35WP; 4 OZ/AC R-56
- [12] .625 LB/GUTHION 35WP; 5 LB/NUTRA PHOS 24; 4 OZ/AC R-56
- [13] 2.5 LB/MORALEAF CALCIUM
- [14] 1 LB/AC ROZOOL
- [15] 50 LB/AC UREA; 100 LB/AC KCL; 100 LB/AC ZINC 50
- [16] HARVEST/BIN
- [17] .5 LB/AC SURFLAN AS; 1.8 LB/AC PRINCEP 80W
- [18] 2 QT/AC ROUNDUP; 1 QT/AC SPREADER R-11
- [19] 12 LBS/AC KOIDE DF

ITEMIZED COST PER ACRE FOR ESTABLISHING
A 10-ACRE JONAGOLD APPLE ORCHARD IN
NORTHWEST WASHINGTON; YEAR THREE

TABLE 5B.

		PRICE OR UNIT COST/UNIT QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS				
SOIL ANALYSIS	ACRE	\$ 6.00	1.00	\$ 6.00
SURFLAN AS	GAL	81.90	.75	61.43
PRINCEP 80W	LB	4.35	1.88	8.16
SUPERIOR OIL	GAL	2.75	1.50	4.12
LORSBAN 4E	OZ	.41	1.00	.41
ZINC 50	LB	.95	3.00	2.85
RALLY 40W	OZ	5.30	3.75	19.89
ZIRAM 76	LB	2.23	5.00	11.16
SOLUBOR	LB	.95	2.00	1.90
SPREADER R-56	OZ	.16	32.00	5.12
SYLLIT 65WP	LB	11.00	.75	8.25
BAYLETON 50DF	OZ	3.37	1.50	5.06
THIODAN 50WP	LB	6.50	1.00	6.50
RUBIGAN EC	QT	2.59	16.05	41.57
DITHANE M45	LB	3.60	2.00	7.20
SORBA ZKP	QT	3.36	1.50	5.04
CAPTAN 50WP	LB	2.46	3.00	7.38
LORSBAN 50W	LB	7.65	.75	5.74
PROVIDE	OZ	1.46	20.00	29.20
NUTRA PHOS 24	LB	1.47	10.00	14.70
EPSOM SALTS	LB	.29	130.00	38.36
TAPE/TWINE	ACRE	25.00	1.00	25.00
GRAMOXONE EXTRA	QT	11.06	1.50	16.59
GUTHION 35WP	LB	5.10	1.26	6.38
R56 (STICKER)	GAL	18.90	4.00	75.60
MORALEAF CALCIUM	LB	1.00	5.00	5.00
KOCIDE DF	LB	2.30	12.00	27.60
CHLORINE	GAL	5.00	2.50	12.50
ROZOL	LB	4.00	1.00	4.00
ROUNDUP	GAL	61.00	.50	30.50
SPREADER R-11	GAL	21.45	.25	5.36
KCL	LB	.11	100.00	11.00
UREA	LB	.15	100.00	15.00
TRACTOR REPAIR	ACRE	23.75	1.00	23.75
TRACTOR FUEL/LUBE	ACRE	66.17	1.00	66.17
MACHINERY REPAIRS	ACRE	34.47	1.00	34.47
IRRIGATION POWER	ACRE	13.04	1.00	13.04
IRRIGATION MAINT	ACRE	41.50	1.00	41.50
IRRIGATION LABOR	HOUR	7.50	4.00	30.00
PICKING HAND	BIN	15.00	15.00	225.00
CUSTOM HAUL HARVEST	BIN	2.50	15.00	37.50
HAND LABOR	HOUR	7.50	129.50	971.25
LABOR(TRAC/MACH OPER)	ACRE	251.30	1.00	251.30
OVERHEAD	ACRE	115.04	1.00	115.04
INTEREST ON OPER CAP	DOL	.10	825.17	82.52
TOTAL VARIABLE COST				
			\$2415.80	

TOTAL VARIABLE COST

ITEMIZED COST PER ACRE FOR ESTABLISHING
A 10-ACRE JONAGOLD APPLE ORCHARD IN
NORTHWEST WASHINGTON; YEAR THREE

		PRICE OR UNIT COST/UNIT QUANTITY	VALUE OR COST	YOUR FARM
FIXED COSTS				
EQUIPMENT:				
DEPRECIATION	ACRE	\$ 234.02	1.00	\$ 234.02
INTEREST	ACRE	170.38	1.00	170.38
INSURANCE	ACRE	11.36	1.00	11.36
TAXES	ACRE	34.08	1.00	34.08
HOUSING	ACRE	18.93	1.00	18.93
PRUNING TOOLS	ACRE	5.00	1.00	5.00
SHOP TOOLS	ACRE	19.37	1.00	19.37
MACHINE SHED/SHOP	ACRE	27.00	1.00	27.00
IRRIGATION:				
DEPRECIATION	DOL	270.64	1.00	270.64
INTEREST	DOL	125.08	1.00	125.08
INS/TAXES	DOL	43.78	1.00	43.78
ACCUM COST INTEREST	ACRE	1220.00	1.00	1220.00
LAND RENT	ACRE	125.00	1.00	125.00
TOTAL FIXED COST				
			\$2304.63	
TOTAL COST				
			\$4720.44	

SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE
FOR ESTABLISHING A 10-ACRE JONAGOLD APPLE ORCHARD
IN NORTHEAST WASHINGTON; YEAR FOUR

TABLE 6A.

OPERATION	TOOLING	MTH	YEAR	VARIABLE COST				TOTAL VARIABLE COST
				MACH HOURS	MACH LABOR	TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	
SOIL ANALYSIS	CUSTOM SOIL TESTS	OCT	1995	\$.00	\$.00	\$.00	\$.00	\$.05
IN-ROW WEED CTRL	40HP;SPRAYER	[117]	NOV 1995	.28	.33	7.46	1.18	28.63
WINTER PRUNE	HAND LABOR;CUT RISERS	FEB	1996	.00	.00	5.00	.00	.00
DELAY DORMANT	40HP;AIR SPRAYER	[11]	MAR 1996	.28	.33	8.82	2.53	3.00
IN-ROW WEED CTRL	40HP;SPRAYER	[2]	MAR 1996	.28	.33	7.46	1.18	3.00
DISEASE CONTROL	40HP;AIR SPRAYER	[13]	MAR 1996	.28	.33	8.82	2.53	3.00
PEST CONTROL	40HP;AIR SPRAYER	[4]	APR 1996	.28	.33	8.82	2.53	3.00
PEST CONTROL	40HP;AIR SPRAYER	[5]	APR 1996	.28	.33	8.82	2.53	3.00
DISEASE CONTROL	40HP;AIR SPRAYER	[6]	APR 1996	.28	.33	8.82	2.53	3.00
PEST CONTROL	40HP;AIR SPRAYER	[7]	MAY 1996	.28	.33	8.82	2.53	3.00
RUSSET CONTROL	40HP;AIR SPRAYER	[8]	MAY 1996	.56	.66	17.64	5.06	6.00
PEST/NUTRIENTS	40HP;AIR SPRAYER	[9]	MAY 1996	.28	.33	8.82	2.53	3.00
PEST/NUTRIENTS	40HP;AIR SPRAYER	[10]	JUN 1996	.28	.33	8.82	2.53	3.00
PEST/NUTRIENTS	40HP;AIR SPRAYER	[11]	JUN 1996	.28	.33	8.82	2.53	3.00
IN-ROW WEED CTRL	40HP;SPRAYER	[2]	JUN 1996	.28	.33	7.46	1.18	3.00
HAND THINNING	HAND LABOR	JUN	1996	.00	.00	0.00	0.00	0.00
PEST/NUTRIENTS	40HP;AIR SPRAYER	[12]	JUL 1996	.28	.33	8.82	2.53	3.00
TREE TRAINING	HAND LABOR	JUL	1996	.00	.00	0.00	0.00	0.00
NUTRIENTS	40HP;AIR SPRAYER	[13]	SEP 1996	.56	.66	17.64	5.06	6.00
TIE FRUIT LIMBS	HAND LABOR	SEP	1996	.00	.00	0.00	0.00	0.00
HARVEST(25 BINS)	40HP/LOADER;HAND LABOR	[16]	OCT 1996	8.50	9.35	138.43	35.29	474.15
HAUL FRUIT	CUSTOM HAULING	OCT	1996	.00	.00	0.00	0.00	0.00
DISEASE CONTROL	40HP;AIR SPRAYER	[19]	OCT 1996	.28	.33	8.82	2.53	3.00
RODENT CONTROL	HAND LABOR	[14]	ANN 1996	.00	.00	0.00	0.00	0.00
IRRIGATION	DRIP IRRIGATION	ANN	1996	.00	.00	439.50	0.00	30.00
MISC. COSTS	SHOP;SHOPTOOLS	ANN	1996	.00	.00	46.37	0.00	0.00
INTEREST	INTEREST ON ESTAB COST	ANN	1996	.00	.00	1317.04	0.00	0.00
PICKUP TRUCK	MISC USE	ANN	1996	5.00	46.88	21.77	4.90	0.00
LAND RENT	PER ACRE COST	ANN	1996	.00	125.00	.00	0.00	0.00
OVERHEAD	5% VARIABLE COSTS	ANN	1996	.00	.00	0.00	0.00	0.00
FERTIGATE	THRU IRRIGATION SYS.	[15]	SEA 1996	.00	.00	0.00	0.00	0.00
FERTIGATE	THRU IRRIGATION SYSTEM	[15]	SEA 1995	.00	.00	0.00	0.00	0.00
IN-ROW WEED CTRL	40HP;SPRAYER	[18]	SEA 1996	.28	.33	7.46	1.18	3.00
MOW ORCHARD	40HP;FLAIL MOWER;APR-OCT	SEA 1996	4.49	5.43	104.31	19.64	48.89	.00
TOTAL PER ACRE				\$23.21	\$26.60	\$2384.70	\$119.34	\$1409.54
						\$194.07	\$434.57	\$72.27
								\$229.69
								\$4614.39

- [1] 1.5 GAL/SUPERIOR OIL; 1 PT/LORSBAN 4E; 3 LB/ZINC 50
- [2] 25 GAL/AC SURFLAN AS; 1.5 QT/GRAMOXONE EXTRA
- [3] 1.25 OZ/RALLY 40W; 1.25 LB/ZIRAM; 1 LB/SOLUBOR; 4 OZ/R-56
- [4] 4 OZ/RUBIGAN; 2 LB/DITHANE M45; 4 LB/SORBA 2KP; 4 OZ/R-56
- [5] 1.5 OZ/BAYLETON 50DF; .75 LB/AC SYLLIT 65WP; 1 LB/THIODAN 50WP; 4 OZ/AC R-56; 1 LB/AC SOLUBOR
- [6] 4 OZ/RUBIGAN EC; 1.25 LB/ZIRAM 76; 4 OZ/AC R-56
- [7] 1.25 OZ/RALLY 40W; 1.5 LB/CAPTAN 50WP; .75 LB/LORSBAN 50W; 4 OZ/AC R-56
- [8] 10 OZ/PROVIDE (OPTIONAL SPRAY)
- [9] 4 OZ/RUBIGAN EC; 1.5 LB/CAPTAN 50WP; 4 OZ/AC R-56; 5 LB/NUTRA PHOS 24; 15 LB/EPSOM SALTS
- [10] 1.25 OZ RALLY 40W; 1.25 LB/ZIRAM; 15 LB/EPSON SALTS; 4 OZ/AC R-56
- [11] 4 OZ/RUBIGAN EC; 1.25 LB/ZIRAM; .625 LB/GUTHION 35WP; 4 OZ/AC R-56
- [12] .625 LB/GUTHION 35WP; 5 LB/NUTRA PHOS 24; 4 OZ/AC R-56
- [13] 2.5 LB/MORALEAF CALCIUM
- [14] 1 LB/AC ROZOL
- [15] 50 LB/AC UREA; 100 LB/AC KCL; 100 LB/EPSOM SALTS (SEPARATE APPLICATION)
- [16] HARVEST/BIN
- [17] .5 LB/AC SURFLAN AS; 1.8 LB/AC PRINCEP 80W
- [18] 2 QT/AC ROUNDUP; 1 QT/AC SPREADER R-11
- [19] 12 LBS/AC KOCIDE DF

ITEMIZED COST PER ACRE FOR ESTABLISHING
A 10-ACRE JONAGOLD APPLE ORCHARD IN
NORTHWEST WASHINGTON; YEAR FOUR

TABLE 6B.

		PRICE OR UNIT COST/UNIT QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS				
SOIL ANALYSIS	ACRE	\$ 6.00	1.00	\$ 6.00
SURFLAN AS	GAL	81.90	.75	61.44
PRINCEP 80W	LB	4.35	5.38	23.38
EPSOM SALTS	LB	.29	130.00	38.36
SUPERIOR OIL	GAL	2.75	1.50	4.12
LORSBAN 4E	OZ	.41	1.00	.41
ZINC 50	LB	.95	3.00	2.85
RALLY 40W	OZ	5.30	3.75	19.89
ZIRAM 76	LB	2.23	5.00	11.16
SOLUBOR	LB	.95	2.00	1.90
SPREADER R-56	OZ	.16	36.00	5.76
RUBIGAN EC	QT	2.59	16.00	41.44
SYLLIT 65WP	LB	11.00	.75	8.25
BAYLETON 50DF	OZ	3.37	1.50	5.06
THIODAN 50WP	LB	6.50	1.00	6.50
DITHANE M45	LB	3.60	2.00	7.20
SORBA ZKP	QT	3.36	1.50	5.04
PROVIDE	OZ	1.46	20.00	29.20
CAPTAN 50WP	LB	2.46	3.00	7.38
NUTRA PHOS 24	LB	1.47	10.00	14.70
LORSBAN 50W	LB	7.65	.75	5.74
GUTHION 35WP	LB	5.10	1.26	6.38
TAPE/TWINE	ACRE	25.00	1.00	25.00
MORALEAF CALCIUM	LB	1.00	5.00	5.00
KOCIDE DF	LB	2.30	12.00	27.60
ROZOL	LB	4.00	1.00	4.00
CHLORINE	GAL	5.00	2.50	12.50
ROUNDUP	GAL	61.00	.50	30.50
SPREADER R-11	GAL	21.45	.25	5.36
UREA	LB	.15	50.00	7.50
KCL	LB	.11	100.00	11.00
TRACTOR REPAIR	ACRE	22.09	1.00	22.09
TRACTOR FUEL/LUBE	ACRE	62.38	1.00	62.38
MACHINERY REPAIRS	ACRE	34.88	1.00	34.88
IRRIGATION POWER	ACRE	13.04	1.00	13.04
IRRIGATION MAINT	ACRE	41.50	1.00	41.50
IRRIGATION LABOR	HOUR	7.50	4.00	30.00
PICKING HAND	BIN	15.00	25.00	375.00
CUSTOM HAUL HARVEST	BIN	2.50	10.94	27.35
HAND LABOR	HOUR	7.50	102.00	765.00
LABOR(TRAC/MACH OPER)	ACRE	239.44	1.00	239.44
OVERHEAD	ACRE	106.18	1.00	106.18
INTEREST ON OEPR CAP	DOL	.10	722.67	72.27
TOTAL VARIABLE COST				
			\$2229.69	

ITEMIZED COST PER ACRE FOR ESTABLISHING
A 10-ACRE JONAGOLD APPLE ORCHARD IN
NORTHWEST WASHINGTON; YEAR FOUR

TABLE 6B. (CONT'D)

		PRICE OR UNIT COST/UNIT QUANTITY	VALUE OR COST	YOUR FARM
FIXED COSTS				
EQUIPMENT:				
DEPRECIATION	ACRE	\$ 226.21	1.00	\$ 226.21
INTEREST	ACRE	163.72	1.00	163.72
INSURANCE	ACRE	10.91	1.00	10.91
TAXES	ACRE	32.74	1.00	32.74
HOUSING	ACRE	18.19	1.00	18.19
PRUNING TOOLS	ACRE	5.00	1.00	5.00
SHOP TOOLS	ACRE	19.37	1.00	19.37
MACHINE SHED/SHOP	ACRE	27.00	1.00	27.00
IRRIGATION:				
DEPRECIATION	DOL	270.64	1.00	270.64
INTEREST	DOL	125.08	1.00	125.08
INS/TAXES	DOL	43.78	1.00	43.78
ACCUM COST INTEREST	ACRE	1317.04	1.00	1317.04
LAND RENT	ACRE	125.00	1.00	125.00
TOTAL FIXED COST				
			\$2384.70	
TOTAL COST				
			\$4614.39	

SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE
FOR ESTABLISHING A 10-ACRE JONAGOLD APPLE ORCHARD
IN NORTHWEST WASHINGTON; YEAR FIVE

TABLE 7A.

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	TOTAL			VARIABLE COST			TOTAL COST
						FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.		
SOIL ANALYSIS	CUSTOM SOIL TESTS	OCT	1996	\$.00	\$.00	\$.00	\$.00	\$.00	\$.00	\$.05	\$.05	\$ 6.05
IN-ROW WEED CTRL	40HP; SPRAYER	[17]	NOV 1996	.28	.33	7.46	1.18	3.00	.00	49.11	.00	53.28
WINTER PRUNE	HAND LABOR; CUT RISERS	FEB	1997	.00	.00	5.00	.00	187.50	.00	.00	14.06	201.56
DELAY DORMANT	40HP; AIR SPRAYER	[1]	MAR 1997	.28	.33	8.82	2.53	3.00	.00	7.38	.86	13.77
IN-ROW WEED CTRL	60HP; SPRAYER	[2]	MAR 1997	.28	.33	7.46	1.18	3.00	.00	28.63	2.19	34.99
DISEASE CONTROL	40HP; AIR SPRAYER	[3]	MAR 1997	.28	.33	8.82	2.53	3.00	.00	11.00	1.10	17.63
PEST CONTROL	60HP; AIR SPRAYER	[4]	APR 1997	.28	.33	8.82	2.53	3.00	.00	23.24	1.68	30.44
PEST CONTROL	40HP; AIR SPRAYER	[5]	APR 1997	.28	.33	8.82	2.53	3.00	.00	21.40	1.57	28.49
DISEASE CONTROL	40HP; AIR SPRAYER	[6]	APR 1997	.28	.33	8.82	2.53	3.00	.00	13.79	1.13	20.44
PEST CONTROL	40HP; AIR SPRAYER	[7]	APR 1997	.28	.33	8.82	2.53	3.00	.00	16.69	1.11	23.33
RUSSET CONTROL	40HP; AIR SPRAYER	[8]	MAY 1997	.56	.66	17.64	5.06	6.00	.00	29.20	2.02	42.26
PEST/NUTRIENTS	40HP; AIR SPRAYER	[9]	MAY 1997	.28	.33	8.82	2.53	3.00	.00	26.46	1.60	33.59
PEST/NUTRIENTS	40HP; AIR SPRAYER	[10]	JUN 1997	.28	.33	8.82	2.53	3.00	.00	14.48	.83	20.83
PEST/NUTRIENTS	40HP; AIR SPRAYER	[11]	JUN 1997	.28	.33	8.82	2.53	3.00	.00	16.98	.94	23.44
IN-ROW WEED CTRL	40HP; SPRAYER	[12]	JUN 1997	.28	.33	7.46	1.18	3.00	.00	28.63	1.37	34.17
HAND THINNING	HAND LABOR	JUN	1997	.00	.00	.00	.00	281.25	.00	.00	11.72	292.97
PEST/NUTRIENTS	40HP; AIR SPRAYER	[12]	JUL 1997	.28	.33	8.82	2.53	3.00	.00	11.18	.56	17.26
TREE TRAINING	HAND LABOR	JUL	1997	.00	.00	.00	.00	90.00	.00	12.50	3.42	105.92
NUTRIENTS	40HP; AIR SPRAYER	[13]	SEP 1997	.56	.66	17.64	5.06	6.00	.00	5.00	.26	32.26
TIE FRUIT LIMBS	HAND LABOR	SEP	1997	.00	.00	.00	.00	90.00	.00	12.50	1.71	104.21
HARVEST(40 BINS)	40HP/LOADER; HAND LABOR	[16]	OCT 1997	13.60	14.96	221.48	56.46	884.64	.00	.00	7.84	948.94
HAUL FRUIT	CUSTOM HAULING	OCT	1997	.00	.00	.00	.00	100.00	.00	100.00	.83	100.83
DISEASE CONTROL	40HP; AIR SPRAYER	[19]	OCT 1997	.28	.33	8.82	2.53	3.00	.00	27.60	.28	33.40
STRIP LEAVES	HAND LABOR	OCT	1997	.00	.00	.00	.00	225.00	.00	1.87	226.87	226.87
RODENT CONTROL	HAND LABOR	[14]	ANN 1997	.00	.00	.00	.00	15.00	.00	4.00	.95	19.95
IRRIGATION	Drip Irrigation	ANN	1997	.00	.00	270.64	.00	30.00	54.54	12.50	4.85	372.53
IRRIGATION	Drip Irrigation	ANN	1997	.00	.00	168.86	.00	.00	.00	.00	.00	168.86
MISC. COSTS	Shop; Shop Tools	ANN	1997	.00	.00	46.37	.00	.00	.00	.00	.00	46.37
INTEREST	Interest on Estab Costs	ANN	1997	.00	.00	1153.48	.00	.00	.00	.00	.00	1153.48
PICKUP TRUCK	Misc Use	ANN	1997	5.00	5.50	46.88	21.77	49.50	.00	.00	3.56	74.83
LAND RENT	Per Acre Cost	ANN	1997	.00	.00	125.00	.00	.00	.00	.00	.00	125.00
OVERHEAD	5% Variable Costs	ANN	1997	.00	.00	.00	.00	.00	139.82	.00	.00	139.82
FERTIGATE	Thru Irrigation Sys.	[15]	SEA 1997	.00	.00	.00	.00	.00	.00	18.50	.92	19.42
FERTIGATE	Thru Irrigation System	[15]	SEA 1997	.00	.00	.00	.00	.00	.00	29.50	1.47	30.98
IN-ROW WEED CTRL	40HP; SPRAYER	[18]	SEA 1997	.55	.67	14.91	2.36	5.99	.00	35.86	2.21	46.42
MOW ORCHARD	40HP; FLAIL MOWER; APR-OCT	SEA 1997	4.49	5.43	104.31	19.64	48.89	.00	.00	3.43	71.96	176.27
TOTAL PER ACRE				\$28.59	\$32.55	\$2311.65	\$141.70	\$1961.77	\$1456.13	\$76.39	\$2936.26	\$5247.91

- [1] 1.5 GAL/SUPERIOR OIL; 1 PT/LORSAN 4E; 3 LB/ZINC 50
- [2] .25 GAL/AC SURFLAN AS; 1.5 QT/GRAMOXONE EXTRA
- [3] 1.25 OZ/RALLY 40N; 1.25 LB/ZIRAM; 1 LB/SOLUBOR; 4 OZ/R-56
- [4] 4 OZ/RUBIGAN; 2 LB/DITHANE M45; 4 LB/SORBA ZKP; 4 OZ/R-56
- [5] 1.5 OZ/BAYLETON 50DF; .75 LB/AC SYLLIT 65WP; 1 LB/THIODAN 50WP; 4 OZ/AC R-56; 1 LB/AC SOLUBOR
- [6] 4 OZ/RUBIGAN EC; 1.25 LB/ZIRAM 76; 4 OZ/AC R-56
- [7] 1.25 OZ/RALLY 40N; 1.5 LB/CAPTAN 50WP; .75 LB/LORSAN 50W; 4 OZ/AC R-56
- [8] 10 OZ/PROVIDE (OPTIONAL SPRAY)
- [9] 4 OZ/RUBIGAN EC; 1.5 LB/CAPTAN 50WP; 4 OZ/AC R-56; 5 LB/NUTRA PHOS 24; 15 LB/EPSOM SALTS
- [10] 1.25 OZ RALLY 40N; 1.25 LB/ZIRAM; 15 LB/EPSOM SALTS; 4 OZ/AC R-56
- [11] 4 OZ/RUBIGAN EC; 1.25 LB/ZIRAM; .625 LB/GUTHION 35WP; 4 OZ/AC R-56
- [12] .625 LB/GUTHION 35WP; 5 LB/NUTRA PHOS 24; 4 OZ/AC R-56
- [13] 2.5 LB/MORALEAF CALCIUM
- [14] 1 LB/AC ROTOZ
- [15] 50 LB/AC UREA; 100 LB/AC KCL; 100 LB/EPSOM SALTS (SEPARATE APPLICATION)
- [16] HARVEST/BIN
- [17] .5 LB/AC SURFLAN AS; 1.8 LB/AC PRINCEP 80W
- [18] 2 QTS/AC ROUNDUP; 1 QT/AC SPREADER R-11
- [19] 12 LBS/AC KOICIDE DF

ITEMIZED COST PER ACRE FOR ESTABLISHING
A 10-ACRE JONAGOLD APPLE ORCHARD IN
NORTHWEST WASHINGTON; YEAR FIVE

TABLE 7B.

		PRICE OR UNIT COST/UNIT	VALUE OR QUANTITY	YOUR COST	YOUR FARM
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VARIABLE COSTS

SOIL ANALYSIS	ACRE	\$ 6.00	1.00	\$ 6.00	
SURFLAN AS	GAL	81.90	1.00	81.90	
PRINCEP 80W	LB	4.35	5.64	24.48	
SUPERIOR OIL	GAL	2.75	1.50	4.12	
LORSBAN 4E	OZ	.41	1.00	.41	
ZINC 50	LB	.95	3.00	2.85	
RALLY 40W	OZ	5.30	3.75	19.89	
ZIRAM 76	LB	2.23	5.00	11.16	
SOLUBOR	LB	.95	2.00	1.90	
SPREADER R-56	OZ	.16	36.00	5.76	
RUBIGAN EC	QT	2.59	16.00	41.44	
SYLLIT 65WP	LB	11.00	.75	8.25	
BAYLETON 50DF	OZ	3.37	1.50	5.06	
THIODAN 50WP	LB	6.50	1.00	6.50	
DITHANE M45	LB	3.60	2.00	7.20	
SORBA ZKP	QT	3.36	1.50	5.04	
CAPTAN 50WP	LB	2.46	3.00	7.38	
LORSBAN 50W	LB	7.65	.75	5.74	
PROVIDE	OZ	1.46	20.00	29.20	
NUTRA PHOS 24	LB	1.47	10.00	14.70	
EPSOM SALTS	LB	.29	130.00	38.36	
GUTHION 35WP	LB	5.10	1.26	6.38	
TAPE/TWINE	ACRE	25.00	1.00	25.00	
MORALEAF CALCIUM	LB	1.00	5.00	5.00	
KOCIDE DF	LB	2.30	12.00	27.60	
ROZOL	LB	4.00	1.00	4.00	
UREA	LB	.15	50.00	7.50	
KCL	LB	.11	100.00	11.00	
ROUNDUP	GAL	61.00	.50	30.50	
SPREADER R-11	GAL	21.45	.25	5.36	
CHLORINE	GAL	5.00	2.50	12.50	
TRACTOR REPAIR	ACRE	28.56	1.00	28.56	
TRACTOR FUEL/LUBE	ACRE	77.85	1.00	77.85	
MACHINERY REPAIRS	ACRE	35.28	1.00	35.28	
IRRIGATION POWER	ACRE	13.04	1.00	13.04	
IRRIGATION MAINT	ACRE	41.50	1.00	41.50	
IRRIGATION LABOR	HOUR	7.50	4.00	30.00	
CHECKER/HARVEST	HOUR	7.50	8.00	60.00	
SUPERVISOR/HARVEST	HOUR	7.50	8.00	60.00	
PICKING HAND	BIN	15.00	40.00	600.00	
CUSTOM HAUL HARVEST	BIN	2.50	40.00	100.00	
HAND LABOR	HOUR	7.50	122.50	918.75	
LABOR(TRAC/MACH OPER)	ACRE	292.93	1.00	292.93	
OVERHEAD	ACRE	139.82	1.00	139.82	
INTEREST ON OPER CAP	DOL	.10	763.94	76.39	

TOTAL VARIABLE COST

\$2936.26

ITEMIZED COST PER ACRE FOR ESTABLISHING
A 10-ACRE JONAGOLD APPLE ORCHARD IN
NORTHWEST WASHINGTON; YEAR FIVE

TABLE 7B. (CONT'D)

		PRICE OR UNIT COST/UNIT	VALUE OR QUANTITY	YOUR COST	YOUR FARM
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FIXED COSTS

EQUIPMENT:					
DEPRECIATION	ACRE	\$ 268.66	1.00	\$ 268.66	
INTEREST	ACRE	198.60	1.00	198.60	
INSURANCE	ACRE	13.24	1.00	13.24	
TAXES	ACRE	39.72	1.00	39.72	
HOUSING	ACRE	22.07	1.00	22.07	
PRUNING TOOLS	ACRE	5.00	1.00	5.00	
SHOP TOOLS	ACRE	19.37	1.00	19.37	
MACHINE SHED/SHOP	ACRE	27.00	1.00	27.00	
IRRIGATION:					
DEPRECIATION	DOL	270.64	1.00	270.64	
INTEREST	DOL	125.08	1.00	125.08	
INS/TAXES	DOL	43.78	1.00	43.78	
ACCUM COST INTEREST	ACRE	1153.48	1.00	1153.48	
LAND RENT	ACRE	125.00	1.00	125.00	

TOTAL FIXED COST \$2311.65

TOTAL COST \$5247.91

SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE
FOR ESTABLISHING A 10-ACRE JONAGOLD APPLE ORCHARD
IN NORTHWEST WASHINGTON; YEAR SIX

TABLE 8A.

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	VARIABLE COST			TOTAL COST
						FUEL, LUBE, & REPAIRS	LABOR	SERVICE	
SOIL ANALYSIS	CUSTOM SOIL TESTS	OCT 1997	\$.00	\$.00	\$.00	\$.00	\$ 6.00	\$.05	\$ 6.05
IN-ROW WEED CTRL	40HP;SPRAYER	[17] NOV 1997	.28	.33	7.46	1.18	3.00	.00	53.28
WINTER PRUNE	HAND LABOR;CUT RISERS	[18] FEB 1998	.00	.00	5.00	.00	187.50	.00	60.74
DELAY DORMANT	40HP;AIR SPRAYER	[11] MAR 1998	.28	.33	8.82	2.53	3.00	.00	201.56
IN-ROW WEED CTRL	40HP;SPRAYER	[2] MAR 1998	.28	.33	7.46	1.18	3.00	.00	205.56
DISEASE CONTROL	40HP;AIR SPRAYER	[3] MAR 1998	.28	.33	8.82	2.53	3.00	.00	13.77
PEST CONTROL	40HP;AIR SPRAYER	[4] APR 1998	.28	.33	8.82	2.53	3.00	.00	22.59
PEST CONTROL	40HP;AIR SPRAYER	[5] APR 1998	.28	.33	8.82	2.53	3.00	.00	42.45
DISEASE CONTROL	40HP;AIR SPRAYER	[6] APR 1998	.28	.33	8.82	2.53	3.00	.00	28.49
PEST CONTROL	40HP;AIR SPRAYER	[7] MAY 1998	.28	.33	8.82	2.53	3.00	.00	20.44
RUSSET CONTROL	40HP;AIR SPRAYER	[8] MAY 1998	.56	.66	17.64	5.06	6.00	.00	29.20
PEST/NUTRIENTS	40HP;AIR SPRAYER	[9] MAY 1998	.28	.33	8.82	2.53	3.00	.00	26.46
PEST/NUTRIENTS	40HP;AIR SPRAYER	[10] JUN 1998	.28	.33	8.82	2.53	3.00	.00	14.48
PEST/NUTRIENTS	40HP;AIR SPRAYER	[11] JUN 1998	.28	.33	8.82	2.53	3.00	.00	.83
IN-ROW WEED CTRL	40HP;SPRAYER	[2] JUN 1998	.28	.33	8.82	2.53	3.00	.00	20.83
HAND THINNING	HAND LABOR	[12] JUN 1998	.00	.00	.00	.00	.00	.00	29.66
PEST/NUTRIENTS	40HP;AIR SPRAYER	[12] JUL 1998	.28	.33	8.82	2.53	3.00	.00	12.50
TREE TRAINING	HAND LABOR	[13] JUL 1998	.00	.00	.00	.00	.00	.00	10.92
NUTRIENTS	40HP;AIR SPRAYER	[13] SEP 1998	.56	.66	17.64	5.06	6.00	.00	16.98
TIE FRUIT LIMBS	HAND LABOR	[14] SEP 1998	.00	.00	.00	.00	.00	.00	1.32
HARVEST(45 BINS)	40HP/LOADER;HAND LABOR	[16] OCT 1998	19.10	21.01	311.05	79.30	1062.84	.00	12.50
HAUL FRUIT	CUSTOM HAULING	[17] OCT 1998	.00	.00	.00	.00	.00	.00	12.50
DISEASE CONTROL	40HP;AIR SPRAYER	[19] OCT 1998	.28	.33	8.82	2.53	3.00	.00	12.50
STRIP LEAVES	HAND LABOR	[20] OCT 1998	.00	.00	.00	.00	.00	.00	12.50
RODENT CONTROL	DRIP IRRIGATION	[14] ANN 1998	.00	.00	.00	.00	.00	.00	12.50
IRRIGATION	MACH SHED;SHOP TOOLS	[19] ANN 1998	.00	.00	.00	.00	.00	.00	12.50
MISC. COSTS	INTEREST ON ESTAB COST	[ANN 1998]	.00	.00	.00	.00	.00	.00	12.50
PICKUP TRUCK	MISC USE	[14] ANN 1998	.00	.00	.00	.00	.00	.00	12.50
LAND RENT	PER ACRE COST	[ANN 1998]	.00	.00	.00	.00	.00	.00	12.50
OVERHEAD	5% VARIABLE COSTS	[ANN 1998]	.00	.00	.00	.00	.00	.00	12.50
FERT GATE	THRU IRRIGATION SYS.	[15] SEA 1998	.00	.00	.00	.00	.00	.00	12.50
FERTIGATE	THRU IRRIGATION SYSTEM	[15] SEA 1998	.00	.00	.00	.00	.00	.00	12.50
IN-ROW WEED CTRL	40HP;SPRAYER	[18] SEA 1998	.55	.67	14.91	2.36	5.99	.00	12.50
MOW ORCHARD	40HP;FLAIL MOWER;APR-OCT	[18] SEA 1998	4.49	5.43	104.31	19.64	48.89	.00	12.50
TOTAL PER ACRE			\$34.09	\$38.60	\$1926.01	\$164.53	\$2294.10	\$331.58	\$456.13
								\$83.10	\$3329.34
									\$5255.35

- [1] 1.5 GAL/SUPERIOR OIL; 1 PT/LORSBAN 4E; 3 LB/ZINC 50
- [2] .25 GAL/AC SURFLAN AS; 1.5 QT/GRANOZONE EXTRA
- [3] 1.25 OZ/RALLY 40W; 1.25 LB/ZIRAM; 1 LB/SOLUBOR; 4 OZ/R-56
- [4] 4 OZ/RUBIGAN; 2 LB/DITHANE M55; 4 LB/SORBA ZKP; 4 OZ/R-56
- [5] 1.5 OZ/BAYLETON 500F; .75 LB/AC SYLLIT 65WP; 1 LB/THIODAN 50WP; 4 OZ/AC R-56; 1 LB/AC SOLUBOR
- [6] 4 OZ/RUBIGAN EC; 1.25 LB/ZIRAM 76; 4 OZ/AC R-56
- [7] 1.25 OZ/RALLY 40W; 1.5 LB/CAPTAN 50WP; .75 LB/LORSBAN 50W; 4 OZ/AC R-56
- [8] 10 OZ/PROVIDE (OPTIONAL SPRAY)
- [9] 4 OZ/RUBIGAN EC; 1.5 LB/CAPTAN 50WP; 4 OZ/AC R-56; 5 LB/NUTRA PHOS 24; 15 LB/EPSOM SALTS
- [10] 1.25 OZ RALLY 40W; 1.25 LB/ZIRAM; 15 LB/EPSOM SALTS; 4 OZ/AC R-56
- [11] 4 OZ/RUBIGAN EC; 1.25 LB/ZIRAM; .625 LB/GUTHION 35WP; 4 OZ/AC R-56
- [12] 2 QTS/AC ROUNDUP; 5 LB/NUTRA PHOS 24; 4 OZ/AC R-56
- [13] 2.5 LB/MORALEAF CALCIUM
- [14] 1 LB/AC ROZOL
- [15] 50 LB/AC UREA; 100 LB/AC KCL; 100 LB/EPSON SALTS (SEPARATE APPLICATION)
- [16] HARVEST/BIN
- [17] .5 LB/AC SURFLAN AS; 1.8 LB/AC PRINCEP 80W
- [18] 2 QTS/AC ROUNDUP; 1 QT/AC SPREADER R-11
- [19] 12 LBS/AC KOCLIDE DF

ITEMIZED COST PER ACRE FOR ESTABLISHING
A 10-ACRE JONAGOLD APPLE ORCHARD IN
NORTHWEST WASHINGTON; YEAR SIX

TABLE 8B.

		PRICE OR UNIT COST/UNIT QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS				
SOIL ANALYSIS	ACRE	\$ 6.00	1.00	\$ 6.00
SURFLAN AS	GAL	81.90	1.00	81.90
PRINCEP 80W	LB	4.35	5.64	24.48
SUPERIOR OIL	GAL	2.75	1.50	4.12
LORSBAN 4E	OZ	.41	1.00	.41
ZINC 50	LB	.95	3.00	2.85
RALLY 40W	OZ	5.30	3.75	19.89
ZIRAM 76	LB	2.23	5.00	11.16
SOLUBOR	LB	.95	2.00	1.90
SPREADER R-56	OZ	.16	36.00	5.76
RUBIGAN EC	QT	2.59	16.00	41.44
SYLLIT 65WP	LB	11.00	.75	8.25
BAYLETON 50DF	OZ	3.37	1.50	5.06
THIODAN 50WP	LB	6.50	1.00	6.50
DITHANE M45	LB	3.60	2.00	7.20
SORBA ZKP	QT	3.36	1.50	5.04
CAPTAN 50WP	LB	2.46	3.00	7.38
LORSBAN 50W	LB	7.65	.75	5.74
PROVIDE	OZ	1.46	20.00	29.20
NUTRA PHOS 24	LB	1.47	10.00	14.70
EPSOM SALTS	LB	.29	130.00	38.36
GUTHION 35WP	LB	5.10	1.26	6.38
TAPE/TWINE	ACRE	25.00	1.00	25.00
MORALEAF CALCIUM	LB	1.00	5.00	5.00
KOCIDE DF	LB	2.30	12.00	27.60
CHLORINE	GAL	5.00	2.50	12.50
ROZOL	LB	4.00	1.00	4.00
UREA	LB	.15	50.00	7.50
KCL	LB	.11	100.00	11.00
ROUNDUP	GAL	61.00	.50	30.50
SPREADER R-11	GAL	21.45	.25	5.36
TRACTOR REPAIR	ACRE	35.34	1.00	35.34
TRACTOR FUEL/LUBE	ACRE	93.91	1.00	93.91
MACHINERY REPAIRS	ACRE	35.28	1.00	35.28
IRRIGATION POWER	ACRE	13.04	1.00	13.04
IRRIGATION MAINT	ACRE	41.50	1.00	41.50
IRRIGATION LABOR	HOUR	7.50	4.00	30.00
CHECKER/HARVEST	HOUR	7.50	11.00	82.50
SUPERVISOR/HARVEST	HOUR	7.50	11.00	82.50
PICKING HAND	BIN	15.00	45.00	675.00
CUSTOM HAUL HARVEST	BIN	2.50	45.00	112.50
HAND LABOR	HOUR	7.50	143.55	1076.63
LABOR(TRAC/MACH OPER)	ACRE	347.38	1.00	347.38
OVERHEAD	ACRE	158.54	1.00	158.54
INTEREST ON OPER CAP	DOL	.10	830.95	83.10
TOTAL VARIABLE COST				
			\$3329.34	

TOTAL VARIABLE COST

ITEMIZED COST PER ACRE FOR ESTABLISHING
A 10-ACRE JONAGOLD APPLE ORCHARD IN
NORTHWEST WASHINGTON; YEAR SIX

TABLE 8B. (CONT'D)

		PRICE OR UNIT COST/UNIT QUANTITY	VALUE OR COST	YOUR FARM
FIXED COSTS				
EQUIPMENT:				
DEPRECIATION	ACRE	\$ 310.54	1.00	\$ 310.54
INTEREST	ACRE	233.22	1.00	233.22
INSURANCE	ACRE	15.54	1.00	15.54
TAXES	ACRE	46.64	1.00	46.64
HOUSING	ACRE	25.92	1.00	25.92
PRUNING TOOLS	ACRE	5.00	1.00	5.00
SHOP TOOLS	ACRE	19.37	1.00	19.37
MACHINE SHED/SHOP	ACRE	27.00	1.00	27.00
IRRIGATION:				
DEPRECIATION	DOL	270.64	1.00	270.64
INTEREST	DOL	125.08	1.00	125.08
INS/TAXES	DOL	43.78	1.00	43.78
ACCUM COST INTEREST	ACRE	678.27	1.00	678.27
LAND RENT	ACRE	125.00	1.00	125.00
TOTAL FIXED COST				
			\$1926.01	
TOTAL COST				
			\$5255.35	

APPENDIX

TABLE A.

MACHINERY COMPLEMENT FOR 10-ACRE ORCHARD.

	<u>MACHINERY</u>	<u>SIZE</u>	<u>PURCHASE PRICE</u>	<u>TOTAL¹ FIXED/HR</u>	<u>TOTAL² VAR/HR</u>	<u>TOTAL³ COST/HR</u>	<u>HOURS OF ANNUAL USE</u>
	Wheel Tractor	40 HP	\$17,500	\$17.59	\$2.56	\$20.16	150
	3-Point Sprayer	100 Gal	8,200	12.73	6.37	19.11	100
	Flail Mower	5'	2,500	3.88	1.55	5.43	100
	Tractor w/Loader		27,000	16.29	4.15	20.44	250
	Trailer, Hi Bed		2,000	6.21	1.18	7.39	50
	Pickup, Used	3/4 Ton	10,000	9.38	4.35	13.73	250
	Sprayer	150 Gal	2,500	7.76	1.47	9.24	50

¹ Total fixed costs include depreciation, interest, taxes, and insurance.

² Variable costs include repairs, fuel, and lubrication.

³ Total costs are the sum of total fixed and variable costs.

TABLE B.

PRICES FOR SELECTED INPUTS, NORTHWEST WASHINGTON--1993.

ITEM	UNIT	PRICE
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FERTILIZERS

Ammonium Nitrate	LB	.1250
Epsom Salts	LB	.295
Hyphos	LB	1.08
KCL	LB	.11
MAP (11-55-0)	LB	.13
Nutra Phos 24	LB	1.47
Rozol	LB	4.00
Solubor	LB	.95
Sul-Po-Mag	LB	.1175
Urea	LB	.15
Zinc 50	LB	.95

PESTICIDES

Bayleton 50DF	OZ	3.37
Captan 50WP	LB	2.46
Dithane M45	LB	3.60
Gramoxone Extra	QT	11.06
Guthion 35WP	LB	5.10
Kocide DF	LB	2.30
Lorsban 50W	LB	7.65
Lorsban 4E	OZ	.41
Princep 80W	LB	4.35
Provide	OZ	1.46
Rally 40W	OZ	5.30
R56 (Sticker)	GAL	18.90
Roundup	GAL	61.00
Rubigan EC	QT	2.59
Sorba ZKP	QT	3.36
Spreader R-11	GAL	21.45
Spreader R-56	OZ	.16
Superior Oil	GAL	2.75
Surflan AS	GAL	81.90
Syllit 65WP	LB	11.00
Thiodan 50WP	LB	6.50
Ziram 76	LB	2.23

PLANTS and SEED

Jonagold 1-year branched on 2-year rootstocks (M9)	EACH	5.40
Crabapple pollenizers	EACH	4.75
Companion Grass	LB	1.65

CUSTOM

Backhoe (Custom)	HOUR	60.00
Beehive rental	EACH	25.00
Chisel	ACRE	20.00
Cultimulch	ACRE	20.00
Disk	ACRE	20.00
Drill rental	ACRE	9.00
Fertilize	ACRE	7.00

TABLE B.

PRICES FOR SELECTED INPUTS, NORTHWEST WASHINGTON--1993 (continued).

ITEM	UNIT	PRICE
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CUSTOM (Continued)

Haul	BIN	2.50
Irrigation maintenance labor	ACRE	75.00 (10 hours)
Irrigation variable cost	ACRE	71.00
Leaf tissue analysis	ACRE	1.00
Lime 3 tons/acre	TON	98.00
Plow	ACRE	20.00
Posthole digger rental	DAY	45.00
Rent scraper blade	ACRE	7.50
Rent tractor/planter	ACRE	75.00
Rototill-Subsoil	ACRE	40.00
Soil Analysis	ACRE	6.00

FUEL

Diesel	GAL	.729
Gas	GAL	1.079

LABOR

Hand	HOUR	7.50
Machinery	HOUR	9.00

OTHER

Carwash mitt (painting)	EACH	2.99
Chlorine	GAL	5.00
Cup weights	ACRE	25.00
Harvest bags	EACH	28.00
Harvest bins	EACH	40.00
Kite string	ROLL	5.00
Layout and stake materials	ACRE	5.00
Tree stakes (2 inch)	EACH	2.00
Treerunk paint	GAL	5.00
Twine/tape (year one)	ACRE	6.00
Twine/tape (years two - six)	ACRE	25.00

TABLE C. TRICKLE IRRIGATION¹ SYSTEM INVESTMENT AND ASSOCIATED ANNUAL FIXED COSTS, 10 ACRES IRRIGATED.

Item	Investment Cost	Useful Life	Salvage Value % of Inv. Costs	Insurance and Taxes ²	Depreciation ³	Interest ⁴
Mainline 660 Ft 2-1/2" PVC	\$ 330	20	0	\$ 6.60	\$ 16.50	\$ 16.50
Manifolds 648 Ft @ 2" 336 Ft @ 1½ 288 Ft @ 1½	343	20	0	6.86	17.15	17.15
Installation \$1.25/Ft	2,415	20	0	48.30	120.75	120.75
Chemical Injection System	900	15	0	18.00	60.00	45.00
Sand Media Filters	1,650	15	20	33.00	88.00	99.00
Screen Filters	440	15	20	8.80	23.46	26.40
Controller 6-Station	350	10	20	7.00	28.00	21.00
Valves, Filters, Regulations Gages	570	10	0	11.40	57.00	28.50
Water Meter	350	10	0	7.00	35.00	17.50

TABLE C.
(cont'd)

Item	Investment Cost	Useful Life	Salvage Value % of Inv. Costs	Insurance and Taxes	Depreciation	Interest
Solenoid Valves & Wire	584	15	0	11.68	38.93	29.20
PVC Fittings	188	8	0	3.76	23.50	9.40
PVC Laterals	2,846	5	0	56.92	569.00	143.30
Emitters	2,605	5	0	52.10	521.00	130.25
Installation Labor	360	5	0	7.20	72.00	18.00
4HP Pump	1,000	20	50	20.00	25.00	75.00
Pump, 2HP & Fittings	926	20	50	18.52	23.15	83.34
Chlorine Injector	700	15	20	14.00	37.33	50.40
Emitters 54, 100' @ \$.80 P.E. Hose	3,783	5	0	75.66	756.60	226.98
10,300 Emitters	824	8	0	16.48	103.00	49.44
Fittings	189	8	0	3.78	23.62	11.34
Installation 6 Hrs/Ac @ \$9.00	540	8	0	10.80	67.50	32.40
TOTAL COST	\$11,687			\$437.86	\$2,706.49	\$1,250.85
TOTAL COST PER ACRE	\$ 1,169			\$ 43.78	\$ 270.64	\$ 125.08

¹ Assumes surface water used requiring filtration and treatment of algae.

² Annual insurance and taxes are estimated at 2% of the total system investment.

³ Depreciation is calculated as (investment - salvage) ÷ (useful life).

⁴ Interest on the average investment is estimated as (investment + salvage) ÷ 2 X 10% interest rate.

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