



Cooperative Extension

College of Agriculture
Washington State University
Pullman, Washington

EXTENSION BULLETIN 0960
SEPTEMBER 1981

**Cost of Establishing
an Apple Orchard,
Columbia Basin,
Central Washington**

Farm Business Management Reports



Washington, D.C.
1910

Cost of Establishing
an Apple Orchard
in the Pacific Basin
Central Washington

1981 COST OF ESTABLISHING AN APPLE ORCHARD
COLUMBIA BASIN, CENTRAL WASHINGTON

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INTRODUCTION

Tree fruit production continues to increase in importance in the Columbia Basin area of central Washington. Between 1965 and 1980, tree fruit plantings rose from 3,163 acres to 14,224 acres (Table 1). Apple plantings have increased relatively even more dramatically, rising from 1,856 acres in 1965 to 11,012 acres in 1980. Moreover, the rate at which acreage has been diverted to apples jumped dramatically during the past five years. The annual compound rate of increase in apple plantings was 8.7% between 1965 and 1975. That rate more than doubled to 20.8% over the 1975-1980 period.

Table 1. Acres of Tree Fruits in the Columbia Basin, Washington, 1965-1980.

Year	All Tree Fruits			All Apples
	Bearing	Non-Bearing	Total	
1965	1,210	1,953	3,163	1,856
1970	3,239	850	4,513	2,694
1975	5,764	1,098	6,862	4,275
1980	8,010	6,214	14,224	11,012

SOURCE: U.S. Bureau of Reclamation annual crop reports.

The objective of this publication is to present estimated 1981 costs of establishing an apple orchard in the Columbia Basin area. Similar information was published in 1965, 1972, and 1976. Since the last study, costs have increased dramatically and orchard design and establishment practices have changed. A comparison of the estimates appearing in this publication with those published for 1976 indicates that per-acre costs during the establishment period have approximately doubled.

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It is anticipated that growers, prospective growers, agricultural lenders, and others concerned with the Washington apple industry will find the information reported herein helpful in estimating the physical and financial requirements of establishing new plantings of apples. While the acreages and the practices outlined may not fit all conditions, they represent current trends. The study is of particular interest for areas where new lands are being opened for plantings.

BUDGET ASSUMPTIONS

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

1. The area to be planted is 50 acres, including roads, buildings, windbreaks, etc.
2. Trees are free-standing, spur type, Red Delicious on semi-dwarfing rootstocks.
3. Tree spacing is 9 feet x 18 feet with pollenizer trees interset every sixth tree in every third row. This spacing results in about 269 Red Delicious trees plus 15 trees as pollenizers interset between permanent trees, making a total of 284 trees per planted acre.
4. An under tree, solid set permanent sprinkler irrigation system is used.
5. New purchase costs (1981) are used for all machinery, equipment, and buildings. While this assumption may overstate apple production costs currently being experienced by orchardists, it provides an indication of the earnings needed to replace depreciable assets. Recent increases in the prices paid for new machinery and equipment mean that the depreciation claimed on assets purchased prior to these price advances substantially understates the amount of capital currently required for asset replacement. When an enterprise is evaluated to determine its long-run viability, it is important to consider the ability of the enterprise to replace its depreciable assets on a new cost basis.

The above assumptions require careful study and consideration. Whether this is a new operation or an addition to an existing orchard operation, the establishment of 50 acres of new planting requires additional labor, equipment, machinery and buildings. In planting new land rather than old orchard soils, better tree growth and perhaps earlier production would be anticipated.

The selection of cultivars (variety) may differ as well as rootstocks. This will alter spacing and tree populations as well as growth and productivity. The irrigation system assumes a soil and condition readily adapted to the use of plastic pipe. Similarly, planting assumes a soil suitable to the use of a tree planter rather than the requirement to dig holes for each tree.

SOURCES OF INFORMATION

Most of the information was obtained from an informal group of experienced fruit growers who had recently made sizeable plantings of apple orchards in the Columbia Basin area. This was used as the base for current planting practices and requirements for labor, equipment, and supplies. Several Columbia Basin suppliers were contacted to obtain current prices on machinery, equipment, custom operations, fertilizer, chemicals, and power. The Grant County Assessor's Office provided estimates of land prices and property taxes.

Due to the procedure used, the data in this publication should be viewed as "typical" or "representative" of a 50-acre orchard rather than a mathematical average of a large number of producers. Where such factors as orchard size, machinery complement, machinery use, cultural practices, and input prices differ from those assumed in this publication, quite different establishment costs may result. Moreover, this publication is not specifically intended as a guide to planting practices. Rather, it represents the current technology used in the area.

SUMMARY OF CAPITAL INVESTMENT AND ESTABLISHMENT COSTS

Table 2 presents the estimated annual capital requirements in new equipment, buildings, land, and operating expenses when establishing a 50-acre orchard in the Columbia Basin. While most of the field equipment, buildings, and vehicles may be on hand before planting the orchard, all assets used in developing the orchard are included for the sake of completeness. It is assumed that all items are purchased the year they are first used.

Table 2. Capital Requirements per Year for Equipment, Buildings, Land and Operating Expenses for the Five-Year Establishment Period for a 50-Acre, Apple Orchard in the Columbia Basin Area of Central Washington.^{a/}

	Year 1	Year 2	Year 3	Year 4	Year 5
Requirements:					
Land (50 acres @ \$2,000 per acre)	\$100,000				
Irrigation System	50,000				
Machine Shed	28,000				
Equipment	31,451			\$ 18,740	\$ 3,250
Operating Expenses ^{b/}	<u>78,216</u>	<u>\$ 19,314</u>	<u>\$ 25,708</u>	<u>31,965</u>	<u>43,470</u>
Total	\$287,667	\$ 19,314	\$ 25,708	\$ 50,705	\$ 46,720
Receipts:					
Apples				\$ 25,000	\$ 75,000
Net Requirements	\$287,667	\$ 19,314	\$ 25,708	\$ 25,705	(\$ 28,280)

a/ Does not include interest costs.

b/ Includes per year variable costs and property taxes.

Of course, the actual timing of the above capital outlays will vary, depending on how the various assets are financed.

Annual costs per acre for the five-year development period are summarized in Table 3. As indicated, the total cost of establishing the orchard, minus revenues from sale of partial crops in years 4 and 5, is approximately \$6,100 per acre. These costs represent annual operating expenses and, unlike the capital requirements in Table 2, amortized expenses for capital assets with a useful life in excess of one year.

Table 3. Five-Year Establishment Cost per Acre for an Apple Orchard, Columbia Basin Area of Central Washington.

Establishment Year	Yearly Costs \$	Yearly Revenue ^{a/} \$	Net Yearly Estab. Cost \$	Accumulated Estab. Cost \$
1	1,993.70	0.0	1,993.70	1,993.70
2	1,057.84	0.0	1,057.84	3,051.54
3	1,319.56	0.0	1,319.56	4,371.10
4	1,637.30	500.00	1,137.30	5,508.40
5	2,084.71	1,500.00	584.71	6,093.11

^{a/} Revenues in year 4 are estimated to be 5 bins at a sale price of \$100 per bin. Revenues in year 5 are estimated to be 15 bins at a sale price of \$100 per bin.

ANNUAL COSTS DURING ESTABLISHMENT

The estimated costs for each year are shown in two tables (an A and B table, see Tables 4A through 8B). Tables 4A through 8A outline the schedule of field operations by calendar month, the type of machinery and labor used, the hours used per acre for the apple orchard for each of the five establishment years. The costs of field operations are divided into two categories. The first is the cost of machinery ownership, or fixed costs. The second category, variable costs, is associated with operating machinery, hiring labor, and purchasing services and materials. Total cost is the sum of machinery fixed costs and selected variable costs.

Machinery fixed costs include depreciation and interest on investment, property taxes, and insurance. These costs do not vary with the crop produced, given the ownership of a specific machinery complement, and are incurred whether or not a crop is grown. Machinery fixed costs for a specific field operation are determined by multiplying the machine hours per acre times the per-hour fixed cost shown in Table 9. The per-hour fixed cost is determined by dividing the total annual fixed cost by the annual hours of machinery used for the representative farm.

Variable costs vary directly with the crop grown and the number of acres produced. Such costs include fuel, oil, repairs, fertilizer, chemicals, and custom work. Machine operating labor and hand labor are also a variable cost.

The second set of tables (Tables 4B through 8B) present summaries of costs appearing in the schedule of operations and certain other expenses for the apple orchard in each of the five establishment years. Costs included in these tables that do not appear in the schedule of operations (Tables A) are interest on operating capital, land cost, and overhead (telephone, utilities, legal, accounting, etc.). These tables present, on a yearly basis, the total cost of establishing a semi-dwarfing apple orchard.

Land costs (8% of the \$2,000 land price) are based on rental agreements typical for bare land in the area. While the owner-operator obviously will not actually experience a land rental cost, the cost is included in the analysis under the assumption that it represents the returns the owner-operator must have, apart from appreciation of land value, to justify keeping the capital invested in orchard land and continuing to farm the land himself. As used 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 as a result of the owner-operator farming the land himself instead of renting his land to a tenant.

First Year

It was assumed the land was in crop production prior to establishing the orchard. On that basis, the pre-plant operations normally consist of discing twice and marking the tree rows. In addition, a solid set irrigation system is established at an approximate cost of \$1,000 per acre.

Various planting patterns are used for semi-dwarf orchards. Most orchardists allow at least 18 feet between the tree rows to facilitate machinery use. This study was based on the trees placed 9 feet apart in the row, which would result in about 269 Red Delicious trees per planted acre when the rows are 18 feet apart. However, some land is needed for roads, windbreaks, buildings, etc. For this study, it was assumed that 93% of the land was planted. Therefore, for the total 50 acres, an average of 250 Red Delicious trees per acre was assumed to be planted.

Table 4A outlines the schedule of field operations by calendar month, the type of machinery and labor used, and the hours used per acre for the apple orchard during the first year of establishment. The notation "2X" by some operations, such as discing, indicates that the operation is done twice. The notation "2T" by other operations, such as mowing, indicates that two trips across the field are needed to complete a single operation. Table 4B presents a summary of the costs, totaling \$1,993.70, experienced during the first year of establishment.

Second Year

The loss of newly planted trees is generally very minimal. In this study, it was assumed that for every four acres, one tree was lost and had to be replanted in the second year. In addition, pollenizer trees are interspersed every sixth tree in every third row totaling 269 Red Delicious and 15 pollenizer trees (284 trees) per fully planted acre. Since it is assumed that only 93% of the land is planted, an average of 14 pollenizer trees per acre were planted in the second year.

Orchardists generally begin pruning and training the trees in the second year and also begin an aphid control program. Table 5A outlines the schedule of field operations by calendar month, the type of machinery and labor used, and the hours used per acre for the apple orchard during the second year of establishment. Table 5B presents a summary of the costs, totaling \$1,057.84, experienced during the second year of establishment.

Third Year

In the third year, orchardists usually establish a sod cover. For this study, it was assumed that cover is established in the fall of the third year. Pruning and training costs increase due to larger trees and the addition of limb spreaders to the training operation. Some trees develop fruit in the third year but most growers remove that fruit by hand in order to develop a better tree.

Table 6A outlines the schedule of field operations for the apple orchard during the third year of establishment. Third year establishment costs totaled \$1,319.56 per acre (Table 6B).

Fourth Year

Orchardists normally harvest a light crop from semi-dwarf apple trees that are four years old. In this study, it was assumed that five bins of apples were harvested and sold for \$100 per bin. 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.

Due to the production of fruit in the fourth year, Columbia Basin growers usually initiate a spray program for the control of insects in the fourth year. Table 7A shows an application of one delayed dormant spraying and two cover sprays along with the other field operations. Table 7B presents a summary of the costs totaling \$1,637.30, experienced during the fourth year. However, because of the \$500.00 crop value, the net annual cost per acre was \$1,137.30 as shown in Table 3.

Fifth Year

Columbia Basin orchardists generally expect to obtain approximately 15 bins of apples per acre from semi-dwarf Red Delicious trees that are five years old. 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. Thinning spray rather than hand labor is used to thin the fruit during the fifth year. Also, a system of bin distribution, swamping and cleanup, plus some formal harvest supervision must be established at harvest time.

Table 8A outlines the schedule of field operations for the apple orchard during the fifth and final year of establishment. Table 8B presents a summary of the costs totaling \$2,084.71, experienced during the fifth year. However, because of the \$1,500.00 crop value, the annual net cost per acre was \$584.71, as shown in Table 3.

MACHINERY AND INPUT COSTS

Table 9 identifies the machine complement used to derive the cost estimates, including current purchase prices, annual hours of use, and per-hour fixed and variable costs.

Machinery fixed costs include depreciation and interest on investment, property taxes, and insurance; costs that do not vary with the number of acres produced. It should be noted that interest on investment represents a 14% opportunity cost to the enterprise. These are earnings foregone by investing money in the machinery complement rather than in the next best alternative investment. This may also represent the interest paid on funds borrowed to finance machinery purchases.

Machinery variable costs include machine repair, fuel and lubrication costs, costs that vary with the crop grown or the number of acres produced.

Table 10 indicates the prices used for fuel, fertilizer, chemicals, tree stock, and other selected inputs used in deriving these budgets.

CONCLUDING NOTE

The cost estimates presented in this publication rest on many assumptions. In planting 50 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 planted even further.

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

It was fully recognized by the growers and authors that the situation outlined is not characteristic of all orchard or farm operations. For example, many economies can be gained by adding this acreage onto existing farm operations. Conversely, added costs can be anticipated when the planting represents a separate business enterprise.

It is essential that this publication be used merely as a guide and that considerable judgement be exercised in generalizing cost estimates to situations differing from those outlined above.

TABLE 4A: 1981 FIRST YEAR COSTS OF ESTABLISHING AN APPLE ORCHARD ON SEMI-DWARFING ROOTSTOCK, COLUMBIA BASIN, WASHINGTON

SCHEDULE OF OPERATIONS AND SELECTED COSTS PER ACRE

OPERATION	TOOLING	MONTH	MACH. HOURS	LABOR HOURS	VARIABLE COST					TOTAL COST	
					MACH. FIXED COST	FUEL, OIL, LUBE, AND REPAIRS	LABOR	SERVICE	MATERIALS		SELECTED VARIABLE COST
					\$	\$	\$	\$	\$	\$	
IRRIGATE	SOLID SET, 28AC.IN.	APR-SEPT	0.0	0.88	115.25	30.24	4.40	15.00	0.0	49.64	164.89
FERTILIZE	60HP-WT, FERT. SPR. BDCT.	JAN	0.25	0.30	2.96	1.81	1.50	0.0	18.45	21.76	24.72
DISC(2X)	RENTED 110HP-WT W/12' DISC	FEB	0.0	0.84	0.0	2.15	4.20	10.50	0.0	16.85	16.85
LAYOUT & STAKE	HAND LABOR	FEB	0.0	3.00	0.0	0.0	15.00	0.0	2.00	17.00	17.00
PLANT	RENTED 110HP-WT W/PLANTER	MAR	0.0	1.20	0.0	6.15	6.00	22.50	1025.15	1059.65	1058.65
PLANTING LABOR	HAND LABOR	MAR	0.0	3.60	0.0	0.0	18.00	0.0	0.0	18.00	18.00
HAUL PLANTS	60HP-WT, TRAILER	MAR	1.00	1.20	8.78	6.45	6.00	0.0	0.0	12.45	21.22
HERB. APP.(2T)	60HP-WT, WEED SPRAYER	MAY	0.50	0.60	8.44	3.16	3.00	0.0	9.50	15.66	24.10
MOW WEEDS(2T)	60HP-WT, 9' MOWER	MAY	0.50	0.60	5.74	3.56	2.99	0.0	0.0	6.55	12.28
MOW WEEDS(2T)	60HP-WT, 9' MOWER	JUNE	0.50	0.60	5.74	3.56	2.99	0.0	0.0	6.55	12.28
FERTILIZE	HAND LABOR(AFTER 3D IRR.)	JUNE	0.0	0.33	0.0	0.0	1.50	0.0	9.23	10.73	10.73
MOW WEEDS(2T)	60HP-WT, 9' MOWER	JULY	0.50	0.60	5.74	3.56	2.99	0.0	0.0	6.55	12.28
FERTILIZE	60HP-WT, FERT. SPREADER	NOV	0.25	0.30	2.96	1.81	1.50	0.0	18.45	21.76	24.72
GOPHER CONTROL	60HP-WT, GOPHER MACHINE	NOV	0.25	0.30	3.30	1.87	1.50	0.0	7.35	10.72	14.02
MOUSE CONTROL	CUSTOM AERIAL	NOV	0.0	0.0	0.0	0.0	0.0	4.50	10.70	15.20	15.20
MISC USE	1/2 TON PICK-UP		6.00	7.20	37.68	20.05	36.00	0.0	0.0	56.05	93.73
MISC USE	60HP-WT, TRAILER		0.50	0.60	4.39	3.22	3.00	0.0	0.0	6.22	10.61
MISC USE	SMALL TOOLS		0.0	0.0	11.28	0.00	0.0	0.0	0.0	0.00	11.28
MACHINE SHED	32X72		0.0	0.0	57.12	0.00	0.0	0.0	0.0	0.00	57.12
TOTAL PER ACRE			10.24	22.14	269.37	87.57	110.56	52.50	1100.68	1351.31	1620.68

COST BASED ON ESTABLISHING A 50 ACRE ORCHARD WITH 93% OF THE TOTAL AREA PLANTED TO TREES.

TABLE 4B: 1981 FIRST YEAR COSTS OF ESTABLISHING AN APPLE ORCHARD ON
SEMI-DWARFING ROOTSTOCK, COLUMBIA BASIN, WASHINGTON

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS					
NITROGEN	LBS.	0.369	125.00	\$ 46.13	-----
MACHINE HIRE	HR.	15.000	0.70	10.50	-----
TRACTOR DRIVER	HR.	5.000	2.04	10.20	-----
HAND LABOR	HR.	5.000	6.90	34.50	-----
STAKES	ACRE	2.000	1.00	2.00	-----
MACHINE HIRE	ACRE	22.500	1.00	22.50	-----
TREES	TREE	4.100	250.00	1025.00	-----
SOLICAN	ACRE	9.500	1.00	9.50	-----
STRYCHNINE OATS	LBS.	1.050	7.00	7.35	-----
CUSTOM AERIAL	ACRE	4.500	1.00	4.50	-----
ROZOL	LBS.	1.070	10.00	10.70	-----
IRRIG. CHARGE	ACRE	15.000	1.00	15.00	-----
FUEL FOR RENTED TRACTORS	ACRE	1.230	6.75	8.30	-----
MACHINERY	ACRE	22.73	1.00	22.73	-----
TRACTORS	ACRE	26.30	1.00	26.30	-----
IRRIGATION MACHINERY	ACRE	30.24	1.00	30.24	-----
LABOR(TRACTOR & MACHINERY)	HOURL	5.00	12.29	61.47	-----
LABOR(IRRIGATION)	HOURL	5.00	0.88	4.40	-----
INTEREST ON OP. CAP.	DOL.	0.14	907.85	127.10	-----
OVERHEAD COST	DOL.	0.050	1478.41	73.92	-----
TOTAL VARIABLE COST				\$1552.33	-----
FIXED COSTS					
MACHINERY	ACRE	125.31	1.00	\$ 125.31	-----
TRACTORS	ACRE	28.81	1.00	28.81	-----
IRRIGATION MACHINERY	ACRE	115.25	1.00	115.25	-----
TAXES (LAND)	ACRE	12.00	1.00	12.00	-----
LAND (NET RENT)	ACRE	0.08	2000.00	160.00	-----
TOTAL FIXED COSTS				\$ 441.37	-----
TOTAL COSTS				\$1993.70	-----

TABLE 5A: 1981 SECOND YEAR COSTS OF ESTABLISHING AN APPLE ORCHARD ON SEMI-DWARFING ROOTSTOCK, COLUMBIA BASIN, WASHINGTON

SCHEDULE OF OPERATIONS AND SELECTED COSTS PER ACRE											
OPERATION	TOOLING	MONTH	MACH. HOURS	LABOR HOURS	VARIABLE COST					TOTAL COST	
					MACH. FIXED COST	FUEL, OIL, LUBE, AND REPAIRS	LABOR	SERVICE	MATERIALS		SELECTED VARIABLE COST
					\$	\$	\$	\$	\$	\$	
IRRIGATE	SOLID SET, 24AC.IN.	APR-SEPT	0.0	0.88	115.18	25.92	4.40	15.00	0.0	45.32	160.50
PRUNE	HAND LABOR, PRUNING TOOLS	FEB	0.0	5.00	1.38	0.00	25.00	0.0	0.0	25.00	26.38
PLT POLLENIZERS AND REPLANTS	60HP-WT, 24" TREE AUGER	MAR	0.75	0.90	8.67	7.19	9.00	0.0	58.42	74.62	83.29
HAUL PLANTS	1/2 TON PICKUP	MAR	0.75	0.90	4.71	2.51	4.50	0.0	0.0	7.01	11.72
HERB. APP.(2T)	60HP-WT, WEED SPRAYER	MAY	0.50	0.60	8.44	3.16	3.00	0.0	9.50	15.66	24.10
MOW WEEDS(2T)	60HP-WT, 9' MOWER	MAY	0.50	0.60	5.74	3.56	2.99	0.0	0.0	6.55	12.28
MOW WEEDS(2T)	60HP-WT, 9' MOWER	JUNE	0.50	0.60	5.74	3.56	2.99	0.0	0.0	6.55	12.28
MOW WEEDS(2T)	60HP-WT, 9' MOWER	JULY	0.50	0.60	5.74	3.56	2.99	0.0	0.0	6.55	12.28
APHID CONTROL	CUSTOM AERIAL	JULY	0.0	0.0	0.0	0.0	0.0	5.50	8.84	14.34	14.34
FERTILIZE	60HP-WT, FERT. SPREADER	NOV	0.25	0.30	2.96	1.81	1.50	0.0	46.13	49.44	52.40
GOPHER CONTROL	60HP-WT, GOPHER MACHINE	NOV	0.25	0.30	3.30	1.87	1.50	0.0	7.35	10.72	14.02
MOUSE CONTROL	CUSTOM AERIAL	NOV	0.0	0.0	0.0	0.0	0.0	4.50	10.70	15.20	15.20
MISC USE	1/2 TON PICK-UP		6.00	7.20	37.68	20.05	36.00	0.0	0.0	56.05	93.73
MISC USE	60HP-WT, TRAILER		0.50	0.60	4.39	3.22	3.00	0.0	0.0	6.22	10.61
MISC USE	SMALL TOOLS		0.0	0.0	11.28	0.0	0.0	0.0	0.0	0.0	11.28
MACHINE SHED	32X72		0.0	0.0	57.12	0.0	0.0	0.0	0.0	0.0	57.12
TOTAL PER ACRE			10.50	18.47	272.32	76.39	96.87	25.00	140.94	339.20	611.53

COST BASED ON ESTABLISHING A 50 ACRE ORCHARD WITH 93% OF THE TOTAL AREA PLANTED TO TREES.

TABLE 5B: 1981 SECOND YEAR COSTS OF ESTABLISHING AN APPLE ORCHARD ON
SEMI-DWARFING ROOTSTOCK, COLUMBIA BASIN, WASHINGTON

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS					
CUSTOM AERIAL	ACRE	5.500	1.00	\$ 5.50	-----
THIODAN	LBS.	4.420	2.00	8.84	-----
TREES	TREE	4.100	14.25	58.43	-----
HAND LABOR	HR.	5.000	5.90	29.50	-----
SOLICAN	ACRE	9.500	1.00	9.50	-----
NITROGEN	LBS.	0.369	125.00	46.13	-----
STRYCHNINE OATS	LBS.	1.050	7.00	7.35	-----
CUSTOM AERIAL	ACRE	4.500	1.00	4.50	-----
ROZOL	LBS.	1.070	10.00	10.70	-----
IRRIG. CHARGE	ACRE	15.000	1.00	15.00	-----
MACHINERY	ACRE	27.27	1.00	27.27	-----
TRACTORS	ACRE	23.20	1.00	23.20	-----
IRRIGATION MACHINERY	ACRE	25.92	1.00	25.92	-----
LABOR(TRACTOR & MACHINERY)	HOUR	5.00	12.59	62.97	-----
LABOR(IRRIGATION)	HOUR	5.00	0.88	4.40	-----
INTEREST ON OP. CAP.	DOL.	0.14	123.15	17.24	-----
OVERHEAD COST	DOL.	0.050	356.45	17.82	-----

TOTAL VARIABLE COST				\$ 374.27	-----
FIXED COSTS					
MACHINERY	ACRE	131.74	1.00	131.74	-----
TRACTORS	ACRE	25.41	1.00	25.41	-----
IRRIGATION MACHINERY	ACRE	115.18	1.00	115.18	-----
TAXES (LAND)	ACRE	12.00	1.00	12.00	-----
INTEREST ON ACCUM ESTAB COST	ACRE	1993.70	0.12	239.24	-----
LAND (NET RENT)	ACRE	0.08	2000.00	160.00	-----

TOTAL FIXED COSTS				\$ 683.57	-----
TOTAL COSTS				\$1057.84	-----

TABLE 6A: 1981 THIRD YEAR COSTS OF ESTABLISHING AN APPLE ORCHARD ON SEMI-DWARFING ROOTSTOCK, COLUMBIA BASIN, WASHINGTON

SCHEDULE OF OPERATIONS AND SELECTED COSTS PER ACRE

OPERATION	TOOLING	MONTH	MACH. HOURS	LABOR HOURS	VARIABLE COST					SELECTED VARIABLE COST	TOTAL COST
					MACH. FIXED COST	FUEL, OIL, LUBE, AND REPAIRS	LABOR	SERVICE	MATERIALS		
					\$	\$	\$	\$	\$	\$	\$
IRRIGATE	SOLID SET, 24AC.IN.	APR-SEPT	0.0	0.88	115.18	25.92	4.40	15.00	0.0	45.32	160.50
PRUNE & TRAIN	HAND LABOR, PRUNING TOOLS	FEB	0.0	12.50	3.46	0.00	62.50	0.0	60.00	122.50	125.96
MOW WEEDS(2T)	60HP-WT, 9' MOWER	MAY	0.50	0.60	5.74	3.56	2.99	0.0	0.0	6.55	12.28
FRUIT REMOVAL	HAND LABOR	MAY	0.0	1.00	0.0	0.0	5.00	0.0	0.0	5.00	5.00
MOW WEEDS(2T)	60HP-WT, 9' MOWER	JUNE	0.50	0.60	5.74	3.56	2.99	0.0	0.0	6.55	12.28
MOW WEEDS(2T)	60HP-WT, 9' MOWER	JULY	0.50	0.60	5.74	3.56	2.99	0.0	0.0	6.55	12.28
HERB. APP.(2T)	60HP-WT, WEED SPRAYER	JULY	0.50	0.60	8.44	3.16	3.00	0.0	17.84	24.00	32.44
APHID CONTROL	CUSTOM AERIAL	JULY	0.0	0.0	0.0	0.0	0.0	5.50	8.84	14.34	14.34
FERTILIZE	60HP-WT, FERT. SPR. BDCT	AUG	0.25	0.30	2.96	1.81	1.50	0.0	11.07	14.38	17.34
DISC	60HP-WT, RENTED 12' DISC	AUG	0.50	0.60	3.39	3.10	3.00	5.00	0.0	11.10	14.49
SEED GRASS	60HP-WT, RENTED SEEDER	SEPT	0.50	0.60	3.39	3.10	3.00	10.00	15.00	31.10	34.49
FERTILIZE	60HP-WT, FERT. SPREADER	NOV	0.25	0.30	2.96	1.81	1.50	0.0	46.13	49.44	52.40
HERB. APP (2T)	60HP-WT, WEED SPRAYER	NOV	0.50	0.60	8.44	3.16	3.00	0.0	23.24	29.40	37.84
GOPHER CONTROL	60HP-WT, GOPHER MACHINE	NOV	0.25	0.30	3.30	1.87	1.50	0.0	7.35	10.72	14.02
MOUSE CONTROL	CUSTOM AERIAL	NOV	0.0	0.0	0.0	0.0	0.0	4.50	10.70	15.20	15.20
MISC USE	1/2 TON PICK-UP		6.00	7.20	37.68	20.05	36.00	0.0	0.0	56.05	93.73
MISC USE	60HP-WT, TRAILER		0.50	0.60	4.39	3.22	3.00	0.0	0.0	6.22	10.61
MISC USE	SMALL TOOLS		0.0	0.0	11.28	0.0	0.0	0.0	0.0	0.0	11.28
MACHINE SHED	32X72		0.0	0.0	57.12	0.0	0.0	0.0	0.0	0.0	57.12
TOTAL PER ACRE			9.74	28.27	279.21	77.86	136.37	40.00	200.16	454.39	733.60

COST BASED ON ESTABLISHING A 50 ACRE ORCHARD WITH 93% OF THE AREA PLANTED TO TREES.

TABLE 6B: 1981 THIRD YEAR COSTS OF ESTABLISHING AN APPLE ORCHARD ON
SEMI-DWARFING ROOTSTOCK, COLUMBIA BASIN, WASHINGTON

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS					
CUSTOM AERIAL	ACRE	5.500	1.00	\$ 5.50	-----
THIODAN	LBS.	4.420	2.00	8.84	-----
SINBAR	LBS.	16.240	1.00	16.24	-----
SIMAZINE	LBS.	3.500	2.00	7.00	-----
SPREADERS	ACRE	60.000	1.00	60.00	-----
HAND LABOR	HR.	5.000	13.50	67.50	-----
ROUNDUP	ACRE	17.840	1.00	17.84	-----
NITROGEN	LBS.	0.369	155.00	57.20	-----
STRYCHNINE OATS	LBS.	1.050	7.00	7.35	-----
CUSTOM AERIAL	ACRE	4.500	1.00	4.50	-----
ROZOL	LBS.	1.070	10.00	10.70	-----
IRRIG. CHARGE	ACRE	15.000	1.00	15.00	-----
MACHINE HIRE	ACRE	5.000	1.00	5.00	-----
MACHINE HIRE	ACRE	10.000	1.00	10.00	-----
RED FESCUE SEED	LBS.	1.500	10.00	15.00	-----
MACHINERY	ACRE	22.54	1.00	22.54	-----
TRACTORS	ACRE	29.40	1.00	29.40	-----
IRRIGATION MACHINERY	ACRE	25.92	1.00	25.92	-----
LABOR(TRACTOR & MACHINERY)	HOUR	5.00	12.89	64.47	-----
LABOR(IRRIGATION)	HOUR	5.00	0.88	4.40	-----
INTEREST ON OP. CAP.	DOL.	0.14	170.43	23.86	-----
OVERHEAD COST	DOL.	0.050	478.26	23.91	-----

TOTAL VARIABLE COST				\$ 502.17	-----
FIXED COSTS					
MACHINERY	ACRE	131.83	1.00	\$ 131.83	-----
TRACTORS	ACRE	32.20	1.00	32.20	-----
IRRIGATION MACHINERY	ACRE	115.18	1.00	115.18	-----
TAXES (LAND)	ACRE	12.00	1.00	12.00	-----
INTEREST ON ACCUM ESTAB COST	ACRE	3051.54	0.12	366.18	-----
LAND (NET RENT)	ACRE	0.08	2000.00	160.00	-----

TOTAL FIXED COSTS				\$ 817.39	-----
TOTAL COSTS				\$1319.56	-----

TABLE 7A: 1981 FOURTH YEAR COSTS OF ESTABLISHING AN APPLE ORCHARD ON SEMI-DWARFING ROOTSTOCK, COLUMBIA BASIN, WASHINGTON

SCHEDULE OF OPERATIONS AND SELECTED COSTS PER ACRE

OPERATION	TOOLING	MONTH	VARIABLE COST								TOTAL COST
			MACH. HOURS	LABOR HOURS	MACH. FIXED COST	FUEL, OIL, LUBE, AND REPAIRS	LABOR	SERVICE	MATERIALS	SELECTED VARIABLE COST	
					\$	\$	\$	\$	\$	\$	\$
IRRIGATE	SOLID SET, 24AC.IN.	APR-SEPT	0.0	0.88	115.18	25.92	4.40	15.00	0.0	45.32	160.50
PRUNE & TRAIN	HAND LABOR, PRUNING TOOLS	FEB	0.0	16.67	4.62	0.0	62.50	0.0	50.00	112.50	117.12
DORMANT SPRAY	60HP-WT, BLAST SPRAYER	APR	0.35	0.42	10.27	5.73	2.10	0.0	40.25	48.08	58.35
MOW WEEDS(2T)	60HP-WT, 9' MOWER	MAY	0.50	0.60	5.74	3.56	2.99	0.0	0.0	6.55	12.28
COVER SPRAY	60HP-WT, BLAST SPRAYER	MAY	0.35	0.42	10.27	5.73	2.10	0.0	5.87	13.70	23.98
MOW WEEDS(2T)	60HP-WT, 9' MOWER	JUNE	0.50	0.60	5.74	3.56	2.99	0.0	0.0	6.55	12.28
COVER SPRAY	60HP-WT, BLAST SPRAYER	JUNE	0.35	0.42	10.27	5.73	2.10	0.0	5.87	13.70	23.98
FRUIT THINNING	HAND LABOR	JUNE	0.0	8.33	0.0	0.0	41.65	0.0	0.0	41.65	41.65
MOW WEEDS(2T)	60HP-WT, 9' MOWER	JULY	0.50	8.33	5.74	3.56	2.99	0.0	0.0	6.55	12.28
PICKING	HAND LABOR, PICKING SACKS	SEPT	0.0	9.00	3.38	0.0	45.00	0.0	0.0	45.00	48.38
BIN HAULING	60HP-WT, BACKFORK	SEPT	1.50	1.80	10.61	9.32	9.00	0.0	0.0	18.32	28.93
BIN HAULING	35HP-WT, BACKFORK	SEPT	1.50	1.80	7.87	5.63	9.00	0.0	0.0	14.63	22.49
HAULING FRUIT	CUSTOM HAULING(5 BINS)	SEPT	0.0	0.0	0.0	0.0	0.0	22.50	0.0	22.50	22.50
FERTILIZE	35HP-WT, FERT. SPREADER	NOV	0.25	0.30	2.50	1.19	1.50	0.0	46.13	48.82	51.32
HERB. APP.(2T)	35HP-WT, WEED SPRAYER	NOV	0.50	0.60	7.52	1.93	3.00	0.0	23.24	28.17	35.69
GOPHER CONTROL	60HP-WT, GOPHER MACHINE	NOV	0.25	0.30	3.30	1.87	1.50	0.0	7.35	10.72	14.02
MOUSE CONTROL	CUSTOM AERIAL	NOV	0.0	0.0	0.0	0.0	0.0	4.50	10.70	15.20	15.20
MISC USE	1/2 TON PICK-UP		6.00	7.20	37.68	20.05	36.00	0.0	0.0	56.05	93.73
MISC USE	60HP-WT, TRAILER		0.50	0.60	4.39	3.22	3.00	0.0	0.0	6.22	10.61
MISC USE	SMALL TOOLS		0.0	0.0	11.28	0.0	0.0	0.0	0.0	0.0	11.28
MACHINE SHED	32X72		0.0	0.0	57.12	0.0	0.0	0.0	0.0	0.0	57.12
TOTAL PER ACRE			13.05	50.53	313.47	96.99	231.82	42.00	189.41	560.22	873.69

COST BASED ON ESTABLISHING A 50 ACRE ORCHARD WITH 93% OF THE AREA PLANTED TO TREES.

TABLE 7B: 1981 FOURTH YEAR COSTS OF ESTABLISHING AN APPLE ORCHARD ON
SEMI-DWARFING ROOTSTOCK, COLUMBIA BASIN, WASHINGTON

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS					
PREHARVEST					
GUTHION	LBS.	4.700	2.50	\$ 11.74	-----
SINBAR	LBS.	16.240	1.00	16.24	-----
SIMAZINE	LBS.	3.500	2.00	7.00	-----
ZINC SULFATE	LBS.	1.350	12.00	16.20	-----
HAND LABOR	HR.	5.000	20.83	104.15	-----
SPREADERS	ACRE	50.000	1.00	50.00	-----
SOLUBOR	LBS.	0.570	5.00	2.85	-----
NITROGEN	LBS.	0.369	125.00	46.13	-----
STRYCHNINE OATS	LBS.	1.050	7.00	7.35	-----
CUSTOM AERIAL	ACRE	4.500	1.00	4.50	-----
ROZOL	LBS.	1.070	10.00	10.70	-----
IRRIG. CHARGE	ACRE	15.000	1.00	15.00	-----
SUPERIOR OIL	QT.	0.750	12.00	9.00	-----
THIODAN	LBS.	4.420	2.00	8.84	-----
PARATHION	LBS.	1.120	3.00	3.36	-----
MACHINERY	ACRE	32.90	1.00	32.90	-----
TRACTORS	ACRE	23.21	1.00	23.21	-----
IRRIGATION MACHINERY	ACRE	25.92	1.00	25.92	-----
LABOR(TRACTOR & MACHINERY)	HOUR	5.00	12.05	60.27	-----
LABOR(IRRIGATION)	HOUR	5.00	0.88	4.40	-----
INTEREST ON OP. CAP.	DOL.	0.14	194.34	27.21	-----
OVERHEAD COST	DOL.	0.050	587.43	29.37	-----

SUBTOTAL, PRE-HARVEST				\$ 516.35	-----
HARVEST COSTS					
HAND LABOR	BINS	9.000	5.00	\$ 45.00	-----
CUSTOM HAULING	BINS	4.500	5.00	22.50	-----
MACHINERY	ACRE	0.06	1.00	0.06	-----
TRACTORS	ACRE	14.89	1.00	14.89	-----
LABOR(TRACTOR & MACHINERY)	HOUR	5.00	3.60	18.00	-----

SUBTOTAL, HARVEST				\$ 100.45	-----

TOTAL VARIABLE COST				\$ 616.80	-----
FIXED COSTS					
MACHINERY	ACRE	154.59	1.00	\$ 154.59	-----
TRACTORS	ACRE	43.70	1.00	43.70	-----
IRRIGATION MACHINERY	ACRE	115.18	1.00	115.18	-----
TAXES (LAND)	ACRE	22.50	1.00	22.50	-----
INTEREST ON ACCUM ESTAB COST	ACRE	4371.10	0.12	524.53	-----
LAND (NET RENT)	ACRE	0.08	2000.00	160.00	-----

TOTAL FIXED COSTS				\$1020.50	-----

TOTAL COSTS				\$1637.30	-----

TABLE 8A: 1981 FIFTH YEAR COSTS OF ESTABLISHING AN APPLE ORCHARD ON
SEMI-DWARFING ROOTSTOCK, COLUMBIA BASIN, WASHINGTON

SCHEDULE OF OPERATIONS AND SELECTED COSTS PER ACRE

OPERATION	TOOLING	MONTH	VARIABLE COST							TOTAL COST	
			MACH. HOURS	LABOR HOURS	MACH. FUEL,OIL, FIXED LUBE,AND REPAIRS		LABOR SERVICE MATERIALS	SELECTED VARIABLE COST			
					\$	\$			\$		\$
IRRIGATE	SOLID SET, 24AC.IN.	APR-SEPT	0.0	0.88	115.18	25.92	4.40	15.00	0.0	45.32	160.50
PRUNE & TRAIN	HAND LABOR,PRUNING TOOLS	FEB	0.0	25.00	6.92	0.0	125.00	0.0	0.0	125.00	131.92
DORMANT SPRAY	60HP-WT,BLAST SPRAYER	APR	0.35	0.42	10.27	5.73	2.10	0.0	34.85	42.68	52.95
SPRAY TREES	60HP-WT,BLAST SPRAYER	APR	0.35	0.42	10.27	5.73	2.10	0.0	17.68	25.51	35.78
MOW WEEDS(2T)	60HP-WT, 9' MOWER	MAY	0.50	0.60	5.74	3.56	2.99	0.0	0.0	6.55	12.28
COVER SPRAY	60HP-WT,BLAST SPRAYER	MAY	0.35	0.42	10.27	5.73	2.10	0.0	5.87	13.70	23.98
THIN. SPRAY(2X)	60HP.WT,BLAST SPRAYER	MAY	0.70	0.84	20.54	11.46	4.20	0.0	21.93	37.59	58.13
MOW WEEDS(2T)	60HP-WT, 9' MOWER	JUNE	0.50	0.60	5.74	3.56	2.99	0.0	0.0	6.55	12.28
COVER SPRAY	60HP-WT,BLAST SPRAYER	JUNE	0.35	0.42	10.27	5.73	2.10	0.0	5.87	13.70	23.98
MOW WEEDS(2T)	60HP-WT, 9' MOWER	JULY	0.50	0.60	5.74	3.56	2.99	0.0	0.0	6.55	12.28
PICKING	HAND LABOR,PICKING SACKS	SEPT	0.0	27.00	8.46	0.0	135.00	0.0	0.0	135.00	143.46
BIN DISTRI.	35HP-WT,BACKFORK	SEPT	3.00	3.60	15.30	11.28	18.00	0.0	0.0	29.28	44.58
SWAMP & LOAD	65HP-WT,HIGHLIFT FORK	SEPT	3.00	3.60	31.35	20.56	18.00	0.0	0.0	38.56	69.91
SWAMP & LOAD	BACKFORK W/ABOVE OPER.	SEPT	3.00	0.0	10.99	1.97	0.0	0.0	0.0	1.97	12.96
HAULING FRUIT	CUSTOM HAULING(15 BINS)	SEPT	0.0	0.0	0.0	0.0	0.0	67.50	0.0	67.50	67.50
HARV. SUPERV.	SUPERVISOR	SEPT	0.0	0.0	0.0	0.0	0.0	15.00	0.0	15.00	15.00
CLEANUP	35HP-WT,TRAILER	OCT	0.50	0.60	3.47	1.99	3.00	0.0	0.0	4.99	8.47
FERTILIZE	35HP-WT,FERT. SPREADER	NOV	0.25	0.30	2.50	1.19	1.50	0.0	46.13	48.82	51.32
HERB. APP.(2T)	35HP-WT,WEED SPRAYER	NOV	0.50	0.60	7.52	1.93	3.00	0.0	23.24	28.17	35.69
GOPHER CONTROL	60HP-WT, GOPHER MACHINE	NOV	0.25	0.30	3.30	1.87	1.50	0.0	7.35	10.72	14.02
MOUSE CONTROL	CUSTOM AERIAL	NOV	0.0	0.0	0.0	0.0	0.0	4.50	10.70	15.20	15.20
MISC USE	1/2 TON PICK-UP		6.00	7.20	37.68	20.05	36.00	0.0	0.0	56.05	93.73
MISC USE	60HP-WT,TRAILER		0.50	0.60	4.39	3.22	3.00	0.0	0.0	6.22	10.61
MISC USE	SMALL TOOLS		0.0	0.0	11.28	0.0	0.0	0.0	0.0	0.0	11.28
MACHINE SHED	32X72		0.0	0.0	57.12	0.0	0.0	0.0	0.0	0.0	57.12
TOTAL PER ACRE			20.59	73.99	394.31	135.03	369.97	102.00	173.62	780.63	1174.93

COST BASED ON ESTABLISHING A 50 ACRE ORCHARD WITH 93% OF THE AREA PLANTED TO TREES.

TABLE 8B: 1981 FIFTH YEAR COSTS OF ESTABLISHING AN APPLE ORCHARD ON SEMI-DWARFING ROOTSTOCK, COLUMBIA BASIN, WASHINGTON

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS					
PREHARVEST					
THIODAN	LBS.	4.420	6.00	\$ 26.52	-----
ELGETOL	PT.	3.090	6.00	18.54	-----
NAA	OZ.	0.070	3.00	0.21	-----
SEVIN	LBS.	1.590	2.00	3.18	-----
GUTHION	LBS.	4.700	2.50	11.74	-----
SINBAR	LBS.	16.240	1.00	16.24	-----
SIMAZINE	LBS.	3.500	2.00	7.00	-----
ZINC KEMIN	QT.	1.350	8.00	10.80	-----
SOLUBOR	LBS.	0.570	5.00	2.85	-----
NITROGEN	LBS.	0.369	125.00	46.13	-----
STRYCHNINE DATS	LBS.	1.050	7.00	7.35	-----
CUSTOM AERIAL	ACRE	4.500	1.00	4.50	-----
ROZOL	LBS.	1.070	10.00	10.70	-----
IRRIG. CHARGE	ACRE	15.000	1.00	15.00	-----
SUPERIOR OIL	QT.	0.750	12.00	9.00	-----
HAND LABOR	HR.	5.000	25.00	125.00	-----
PARATHION	LBS.	1.120	3.00	3.36	-----
MACHINERY	ACRE	45.56	1.00	45.56	-----
TRACTORS	ACRE	29.72	1.00	29.72	-----
IRRIGATION MACHINERY	ACRE	25.92	1.00	25.92	-----
LABOR(TRACTOR & MACHINERY)	HOURL	5.00	13.31	66.57	-----
LABOR(IRRIGATION)	HOURL	5.00	0.88	4.40	-----
INTEREST ON OP. CAP.	DOL.	0.14	215.91	30.23	-----
OVERHEAD COST	DOL.	0.050	720.86	36.04	-----
SUBTOTAL, PRE-HARVEST				\$ 556.57	-----
HARVEST COSTS					
SUPERVISOR	BINS	1.000	15.00	\$ 15.00	-----
HAND LABOR	BINS	9.000	15.00	135.00	-----
CUSTOM HAULING	BINS	4.500	15.00	67.50	-----
MACHINERY	ACRE	2.18	1.00	2.18	-----
TRACTORS	ACRE	31.65	1.00	31.65	-----
LABOR(TRACTOR & MACHINERY)	HOURL	5.00	7.80	39.00	-----
SUBTOTAL, HARVEST				\$ 290.33	-----
TOTAL VARIABLE COST				\$ 846.90	-----
FIXED COSTS					
MACHINERY	ACRE	208.20	1.00	\$ 208.20	-----
TRACTORS	ACRE	70.93	1.00	70.93	-----
IRRIGATION MACHINERY	ACRE	115.18	1.00	115.18	-----
TAXES (LAND)	ACRE	22.50	1.00	22.50	-----
INTEREST ON ACCUM. ESTAB. COST	ACRE	5508.40	0.12	661.01	-----
LAND (NET RENT)	ACRE	0.08	2000.00	160.00	-----
TOTAL FIXED COSTS				\$1237.81	-----
TOTAL COSTS				\$2084.71	-----

Table 9. 1981 Machinery Complement for Semi-Dwarfing Apple Orchard, Columbia Basin, Washington.

Item	Assumed Machinery Prices, Annual Use and Costs per Hour of Use												
	Number of Units	Annual Hrs. of Use per Unit	Cost per Hour of Use										Total Cost
			Fixed Cost					Variable Cost					
			Value	Depr.	Interest ^{a/}	Insurance	Taxes	Total	Repair	Fuel	Lube	Total	
\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$		
Wheel Tractor, 60 HP ^{b/}	1	400	15,600	2.75	3.54	.15	.35	6.79	.81	4.69	.70	6.20	12.99
Wheel Tractor, 35 HP ^{b/}	1	400	11,400	2.01	2.58	.11	.26	4.96	.59	2.73	.41	3.73	8.69
Pickup, 1/2 Ton	1	300	8,500	3.36	2.56	.11	.26	6.28	2.59	.65	.10	3.34	9.62
PTO Blast Sprayer, 400 Gal. ^{b/}	1	55	7,000	10.48	10.48	.45	1.14	22.55	10.17	0.0	0.0	10.17	32.72
Trailer	1	75	1,000	.80	1.02	.04	.12	1.99	.25	0.0	0.0	.25	2.24
Highlift Forklift ^{c/}	1	150	3,100	1.70	1.70	.07	.19	3.66	.66	0.0	0.0	.66	4.32
Backfork ^{b/}	2	75	120	.07	.07	.00	.01	.15	.03	0.0	0.0	.03	.18
Weed Sprayer, 100 Gal.	1	15	854	4.69	4.69	.20	.51	10.09	.12	0.0	0.0	.12	10.21
Rotary Mower, 9 ft.	1	75	2,000	2.20	2.20	.09	.24	4.73	.94	0.0	0.0	.94	5.67
Fertilizer Spreader, 12 ft.	1	25	710	2.37	2.32	.10	.26	5.04	1.03	0.0	0.0	1.03	6.07
Gopher Machine	1	15	647	2.60	3.31	.14	.39	6.44	1.28	0.0	0.0	1.28	7.72
Picking Sacks	15 ^{d/}	75	17	.04	.02	.00	.01	.06	0.0	0.0	0.0	0.0	.06
Small Tools	1	100	2,000	4.00	1.40	.06	.18	5.64	0.0	0.0	0.0	0.0	5.64
Pruning Tools	5	210	28	.04	.01	.00	.01	.05	0.0	0.0	0.0	0.0	.05

a/ Fourteen percent opportunity cost. This is earnings foregone from alternative investments and/or interest paid on money borrowed to finance capital purchases.

b/ Purchased in year 4.

c/ Purchased in year 5.

d/ Six picking sacks purchased in year 4 and nine purchased in year 5.

NOTE: Assumed that a 32 x 72 machine storage shed is constructed for \$28,000. It is assumed that this building has a fifty year life with no salvage value.

Assumed that a solid set irrigation system was installed at \$1,000 per acre. It is assumed that this system has a twenty year life with no salvage value.

Table 10. 1981 Prices for Selected Inputs.

Item	Unit	Price
Fuel:		
Gasoline	Gal.	1.31
Diesel	Gal.	1.07
Fertilizers:		
Nitrogen	Lb.	.396
Zinc Sulfate	Lb.	1.35
Zinc Kemin	Gal.	3.64
Solubor	Lb.	.57
Herbicides:		
Solican	Lb.	9.50
Roundup	Gal.	71.38
Sinbar	Lb.	16.24
Simazine	Lb.	3.50
Insecticides:		
Thiodan	Lb.	4.42
Superior Oil	Gal.	3.00
Parathion	Lb.	1.12
Guthion	Lb.	4.70
Rodenticides:		
Rozol	Lb.	1.07
Strychnine Oats	Lb.	1.05
Growth Regulators:		
Elgetol	Pt.	3.09
NAA	Oz.	1.07
Sevin (50%)	Lb.	1.59
Machine Rental:		
110 HP Tractor with 12' Disc	Hr.	15.00
110 HP Tractor	Hr.	10.00
Tree Planter	Tree	.05
12' Disc	Acre	5.00
Seeder	Acre	10.00

Table 10. 1981 Prices for Selected Inputs (Cont'd.).

Item	Unit	Price
Other:		
Stakes	Acre	2.00
Trees	Tree	4.10
Tree Spreaders	Acre	110.00 (2 yr. pd.)
Creeping Red Fescue Seed	Lb.	1.50
Labor	Hr.	5.00
Aerial Spraying	Acre	4.50-5.50