Farm Business Management Reports		EB1504
	# 2000 Carrot Enterprise Budgets Columbia Basin, Washington State	
	Herbert Hinman Erik Sorensen Gary Pelter	
		

NOTE

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 and size of machinery complement.
- Cultural practices.
- Size of farm 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 modern, well-managed Columbia Basin farms. To avoid drawing unwarranted conclusions for any particular farm or group of farms, the reader must closely examine the assumptions used. If they are not appropriate for the situation at hand, adjustments in the costs and/or returns should be made.

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2000 CARROT ENTERPRISE BUDGETS COLUMBIA BASIN, WASHINGTON STATE

by

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INTRODUCTION

Carrots are an important crop in Washington State for the fresh market, processing, and carrot seed. Washington ranks first in production of processing carrots in the U.S. and fourth for fresh market carrots. Overall, Washington ranks second to California in production of carrots. Washington produces approximately 33% of the processing carrots grown in the U.S. and 3% of the fresh carrots.

Carrots are grown commercially in both eastern and western Washington. Over the past two decades, acreage has increased dramatically in eastern Washington, particularly in the Columbia Basin. In 1998, 6,500 acres of processing carrots and 3,000 acres of fresh market carrots were harvested in Washington. The total cash value of this crop was more than $28 million.

This publication presents projected year 2000 cost and return information for representative Columbia Basin carrot enterprises produced under center pivot irrigation. Producers, lenders, and others should find this information helpful in identifying enterprise strengths and weaknesses, planning production adjustments, estimating financial requirements, and resolving numerous other business management problems.

OBJECTIVES OF THE STUDY

The objectives of this study are: (1) to identify production practices necessary to produce carrots on well-managed farms in the Columbia Basin; (2) to provide estimates of capital requirements, production costs, and returns; and (3) to provide current and prospective producers with a procedure for analyzing the profitability of carrot production.

The enterprise data do not represent a particular farm. Instead, they represent costs, returns, and profitability measures under the specific assumptions adopted for the study. The blank spaces on the right-hand side of the various budget tables and profitability worksheets may be used to estimate costs, returns, and profitability measures for individual producers. Also, local Cooperative Extension agents and fieldpersons should be consulted for recommendations on field operations and operating inputs.

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SOURCES OF INFORMATION

Personal interviews made in 2000 with six selected area producers were used to identify commonly used field operations and equipment. These producers were considered to be representatives of well-managed farms. The quantities and types of material (i.e., seed, fertilizer, herbicides, and insecticides) used in the budgets were based on recommended and widely used practices. Local farm suppliers were contacted to obtain price information on materials and other services commonly used by farmers. Equipment costs were based on current purchase prices and on rates of annual use considered typical.

BUDGET ASSUMPTIONS

Budgets are presented for grower harvested Chantenay carrots and grower harvested Imperator carrots, which are primarily grown in the southern portion of the Columbia Basin, and for processor harvested Chantenay carrots, which are primarily grown in the northern portion of the Columbia Basin. Chantenay carrots typically have large roots, measuring approximately 6" in length and 3" in diameter. In Washington, they are grown exclusively for processing as dicer carrots. Imperator carrots typically have long thin roots, approximately 9" in length and 1 1/2" in diameter. This type of carrot is grown for both the fresh market and for processing as slicer carrots. The assumptions made in developing the enterprise data for both these carrot varieties are:

1. The cash rental rate for center pivot irrigated land used to produce carrots varies considerably within the Columbia Basin. For budget purposes, a gross rent of $300 per acre was used for the south Columbia Basin and $200 per acre was used for the north Columbia Basin, with the landowner paying the land taxes.

2. The center pivot irrigation system is furnished by the landowner. The tenant pays the irrigation charge and the electrical costs of approximately $75 per acre and maintains the center pivot system at a cost of approximately $15 per acre.

3. Estimated annual production per acre for grower harvested Chantenay (dicing) carrots grown in the south basin was 44 tons in the field, paid on 40 tons of cleaned carrots. For processor harvested Chantenay carrots grown in the north basin, the estimated annual production was 35 tons in the field, paid on approximately 65 percent of the gross harvest, or 23 tons. For grower harvested Imperator (fresh and slicing) carrots in the south basin, the estimated annual production was 33 tons in the field, paid on 29 tons of cleaned carrots.

4. Estimated average price received for grower harvested Chantenay carrots is $55 per ton, for processor harvested Chantenay carrots $44 per ton, and for Imperator carrots $80 per ton.

5. Acreage on which carrots are grown was previously in wheat.

DISCUSSION OF BUDGET INFORMATION

Budget information is reported in six tables for each of the three designated carrot types. The information in the "A" tables is for grower harvested Chantenay carrots. The information in the "B" tables is for processor harvested Chantenay carrots. The information in the "C" tables is for grower harvested Imperator carrots. A summary of the information presented in each table for each of the three designated carrot types is presented below.

Table 1. Schedule of Operations and Costs per Acre

Table 1 outlines the schedule of field operations by calendar month, the type of machinery and labor used, and the hours used per acre for producing carrots.

Costs of field operations are divided into two categories. The first is fixed costs, which are the cost of renting land, owning equipment and buildings, and management. The second category, variable costs, is associated with operating machinery, hiring labor, and purchasing services and materials. Total cost is the sum of fixed and variable costs.

Machinery fixed costs include depreciation, interest on the average investment, property taxes, insurance, and housing. These costs are incurred whether or not a crop is grown and do not vary with the enterprise, given ownership of a specific equipment complement. Per-hour fixed costs for machinery are determined by dividing the total annual fixed cost by the total annual hours of machinery use over all enterprises for the representative farm. For a specific field operation, machinery fixed costs are determined by multiplying the machine hours per acre times the machinery per-hour fixed cost as shown in Table 7.

Land fixed cost is equal to the gross rental rates typical of the area. Much of the land used for carrot production is rental ground. Although individual rental arrangements vary, in many situations the tenant pays a cash rent and the landowner pays the taxes.

An opportunity cost for management is also reported. For management, a cost of 7 percent of gross receipts is used. This is representative of management fees charged by farm management firms in the Columbia Basin and is an estimation of the value of an operator's management skills.

Variable costs depend directly on the number of acres and yield level of the carrots produced. These costs include fuel, oil, repairs, fertilizer, chemicals, custom work, overhead, and interest on operating capital. Machinery operating labor and hand labor are also included as variable costs.

Table 2. Material and Services Used by Operation

Table 1, "Schedule of Operations and Costs Per Acre," lists under the "Service" column and "Materials" column dollar figures for services and materials used in the different operations. Tables 2 lists, by operation, the specific services and/or materials used and prices paid for these services and materials.

Table 3. Summary of Itemized Costs per Acre

An itemized list of the costs in Table 1 is presented in Table 3. Most items are self-explanatory; however, "Tractor Interest" and "Machinery Interest" warrant additional explanation. These figures represent opportunity costs (returns foregone by investing in the given equipment complement rather than in alternative investments) or interest paid to finance the given equipment complement. Total interest cost on these capital purchases is calculated on the average value of the equipment over their respective years of use. A 9 percent interest charge is made against this "average" value.

Table 4. Break-Even Selling Price per Ton

Table 4 shows the break-even selling prices for different enterprise costs. The first break-even price is the price needed to cover total variable costs – those costs that occur only if the crop is produced. If the price received does not equal or exceed the variable cost break-even price, the crop becomes uneconomical to produce, even in the short run, because the added costs of production are greater than the added returns.

The second break-even price is the price required to cover total cash costs, assuming no interest on machinery or building loans is being paid. If other cash costs exist on your farm, you must identify and include these costs in the cash cost break-even calculation. Furthermore, since a cash cost has been attributed to all labor and land rent, you may wish to subtract the noncash costs for operator/family labor along with rent for land that is owned, and substitute ownership cash costs before calculating the price needed to cover total cash costs.

The third break-even price is the price needed to cover total cash costs, plus depreciation on machinery and buildings. You must realize this price to stay in business over the long run.

The fourth break-even price is the price you must receive to recover total costs including cash costs, depreciation, operator labor and management, and opportunity costs for investments in machinery. Failure to receive this price means the owner-operator will not realize a return on his/her management, labor and capital contributions equivalent to what could be earned in an alternative use. Realizing a price above the break-even level means that in addition to covering all costs, a premium (profit) is received for the risk assumed in producing the crop.

Table 5. Summary of Receipts, Costs, and Profitability per Acre

Receipts, costs, and various measures of profitability for the carrot enterprises are summarized in Table 5. The assumed price represents an estimate as to what 2000 prices may be and is by no means a "predicted" price. Since the budget estimates do not include storage and marketing costs, the assumed prices received by the producer are net of storage and marketing cost. Since profitability greatly depends on yield and price received, you should recalculate profitability using your predicted yield and price when using these tables.

The first profit measure is estimated total receipts – estimated price times estimated yield. The second profit measure is returns over variable costs and land rent, which was calculated by subtracting total variable costs and land rent from total receipts. The third profit measure, returns to management and risk, was calculated by subtracting the machinery fixed expenses from returns over variable cost. This is the return you earn for management and risk after accounting for all costs

including labor contributed to producing the crop. The fourth profit measure is returns over all costs including management. This is the return (profit) the producer receives, under the given assumptions, for accepting the risks involved in producing carrots.

Table 6. Returns over Costs at Various Price and Yield Levels

Table 6 presents the returns over total costs, as calculated in Table 5, at different price and yield combinations.

Table 7. Hourly Machinery Costs

Table 7 presents the estimated fixed and variable costs per hour of use for machinery used to produce carrots in the Columbia Basin.

Equipment fixed costs include depreciation, interest on investment, property taxes, and insurance. Equipment prices are representative of what growers would currently pay to replace equipment. While this assumption may result in an overstatement of production costs currently experienced by producers, it indicates the enterprise's ability to generate the earnings needed to replace depreciable assets. Continuing increases in prices paid for replacement machinery and equipment due to inflation and improved technology mean that depreciation claimed on assets purchased before price advances 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 its ability to replace depreciable assets on a replaceable cost basis. Note that interest on investment represents a 9 percent opportunity cost to the enterprise. These are earnings foregone by investing in the equipment complement rather than in the next best alternative investment. Equipment variable costs include equipment repair, fuel, and lubrication costs – costs that vary with the crop grown or the number of acres produced.

CONCLUDING NOTE

Given the price and yield assumptions used in this study, carrots prove to be a profitable crop in the Columbia Basin. For grower harvested Chantenay carrots grown in the south Columbia Basin, given a yield of 40 tons cleaned carrots and a price of $55 a ton, the producer clears $110 per acre above all costs, including opportunity costs. This means the producer is receiving a higher return than those charged in this budget for his/her labor, management and equity capital. At a yield of 40 tons of cleaned carrots, a price of $52.05 per ton is needed to cover all costs.

For processor harvested Chantenay carrots grown in the north Columbia Basin, given a paid yield of 23 tons per acre and a price of $44 a ton, the producer clears $92 per acre above all costs, including opportunity cost. At a paid yield of 23 tons, a price of $39.69 per ton is needed to cover all costs.

For Imperator carrots, given a paid yield of 29 tons per acre and a price of $80 a ton, the producer comes up $27 per acre short of covering all costs, including opportunity cost. At a paid yield of 29 tons, a price of $81.00 is needed to cover all costs.

To use these budgets you should fully comprehend the procedures and assumptions used in this study and interpret the results accordingly. The authors and producers who provided this data recognize that these budgets do not represent any one particular operation. They should be used as a general guide to help derive budgets for individual operations. Moreover, this publication does not recommend production practices. Rather, it presents current technology used to produce carrots in the Columbia Basin.

TABLE 1A. SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR PRODUCING GROWER HARVESTED CHANTENAY (DICER) CARROTS IN THE SOUTH COLUMBIA BASIN OF WASHINGTON STATE.

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	VARIABLE COST					TOTAL VARIABLE COST	TOTAL COST
							FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.		
						$	$	$	$	$	$	$	$
SOIL TEST*	FOR NEMATODES	FALL	1999	.00	.00	.00	.00	.00	3.00	.00	.25	3.25	3.25
FUMIGATE	CUSTOM APPLIED	FALL	1999	.00	.00	.00	.00	.00	37.00	183.24	18.17	238.41	238.41
SOIL TEST	FOR NUTRIENTS	MAR	2000	.00	.00	.00	.00	.00	3.00	.00	.16	3.16	3.16
DISC&PACK(1.5X)	200HP-WT, 20' DISC & PACK	MAR	2000	.16	.19	4.02	4.85	2.28	.00	.00	.37	7.50	11.52
PLOW & PACK	150HP-4BTM PLOW & 7' PACK	MAR	2000	.40	.48	7.09	8.78	5.76	.00	.00	.76	15.30	22.39
FERTILIZE	CUSTOM APPLIED	MAR	2000	.00	.00	.00	.00	.00	6.00	87.14	4.89	98.03	98.03
WEED CONTROL	150HP-WT,SPRAYER	APR	2000	.11	.13	1.98	2.20	1.56	.00	13.25	.77	17.78	19.76
LIST	150HP-WT, LISTER	APR	2000	.20	.24	2.96	3.51	2.88	.00	.00	.29	6.68	9.64
BED SHAPING	150HP-WT, BED SHAPER	APR	2000	.20	.24	3.38	3.64	2.88	.00	.00	.29	6.82	10.19
PLANT	85HP-WT, PRECISION BELT PLANT.	APR	2000	.50	.60	13.32	10.34	7.20	.00	35.00	2.36	54.91	68.23
IRRIGATE	CENTER PIVOT, 44 AC. IN.	SEA	2000	.00	1.00	.00	15.00	12.00	75.00	.00	4.59	106.59	106.59
NITROGATION	THROUGH SPRINKLERS (150# N)	SEA	2000	.00	.00	.00	.00	.00	.00	36.45	1.64	38.09	38.09
CULTIVATE	85HP-WT, 8R-CULTIVATOR	MAY	2000	.33	.40	4.80	4.20	4.75	.00	.00	.34	9.29	14.08
WEED CONTROL	CUSTOM APPLIED	MAY	2000	.00	.00	.00	.00	.00	6.00	29.64	1.34	36.97	36.97
CULTIVATE LAY-BY	85HP-WT, 8R-CULTIVATOR	JUN	2000	.33	.40	4.80	4.20	4.75	.00	.00	.27	9.22	14.02
WEED CONTROL	CUSTOM APPLIED	JUN	2000	.00	.00	.00	.00	.00	6.00	26.50	.98	33.47	33.47
HAND WEEDING	CUSTOM WEEDING	JUL	2000	.00	.00	.00	.00	.00	50.00	.00	1.13	51.12	51.12
INSECT/FUNG APP**	CUSTOM AERIAL	SEA	2000	.00	.00	.00	.00	.00	7.50	25.91	1.50	34.92	34.92
CHEMIGATE**	APPLY FUNGICIDE	SEA	2000	.00	.00	.00	.00	.00	.00	14.74	.66	15.40	15.40
TOP	85HP-WT, FORAGE CHOPPER	OCT	2000	1.00	1.20	11.98	9.95	14.40	.00	.00	.00	24.35	36.33
CROWN	150HP-WT, CROWNER	OCT	2000	1.33	1.60	27.58	36.30	19.20	.00	.00	.00	55.50	83.07
DIG	85HP-WT, 6R-BEET DIGGER	OCT	2000	1.25	1.50	24.51	29.26	18.00	.00	.00	.00	47.26	71.78
HAUL**	CUSTOM HAULING	OCT	2000	.00	.00	.00	.00	.00	484.00	.00	.00	484.00	484.00
LABOR PICKUP	3/4 TON	ANN	2000	.67	.80	2.62	4.09	9.60	.00	.00	.62	14.31	16.92
MANAGER PICKUP	3/4 TON	ANN	2000	.50	.00	4.17	4.41	.00	.00	.00	.20	4.61	8.78
MANAGEMENT	7% OF GROSS RECEIPTS	ANN	2000	.00	.00	154.00	.00	.00	.00	.00	.00	.00	154.00
OVERHEAD	UTILITIES,LEGAL,ACCT.,ETC.	ANN	2000	.00	.00	.00	.00	.00	106.27	.00	.00	106.27	106.27
LAND COST	RENTAL RATE	ANN	2000	.00	.00	300.00	.00	.00	.00	.00	.00	.00	300.00
TOTAL PER ACRE				6.98	8.77	567.19	140.75	105.26	783.77	451.87	41.57	1523.22	2090.41

* NUMBER OF APPLICATIONS AND AMOUNT OF MATERIAL USED CAN VARY SIGNIFICANTLY DEPENDING ON CONDITIONS WITHIN GROWING AREA.

** ON LAND THAT IS OWNED AND NOT RENTED, AFTER HARVEST A COVER CROP IS GENERALLY ESTABLISHED IN OCTOBER AND DESTROYED IN THE SPRING OF THE FOLLOWING YEAR AT AN APPROXIMATE COST OF $40/ACRE.

Table 2A. Material and Services Used by Operation for Producing Grower Harvested Chantenay (Dicer) Carrots in the South Columbia Basin of Washington State.

Operation	Month	Material and/or Service
Soil Test (for nematodes)	Fall	Service cost @ an average cost of $3.00/acre
Fumigate	Fall	Custom applied @ $37.00/acre 18 gals. of Telone II @ $10.18/gal.
Soil Test (for nutrients)	March	Service cost @ an average cost of $3.00/acre
Fertilize	March	Custom applied @ $6.00/acre 100 Lbs. of nitrogen (dry) @$0.215/lb. 120 Lbs. of phosphate @ $0.27/lb. 110 Lbs. of potash @ $0.168/lb. 40 Lbs. of sulfur @ $0.129/lb. 5 Lbs. of zinc @ $1.38/lb. 1 Lb. of boron @ $2.70/lb.
Weed Control	April	1 Lb. of Lorox @ $13.25/lb.
Plant	April	Coated seed @ $35.00/acre
Irrigate	Season	Irrigation charge and power costs @ $75.00/acre
Nitrogate	Season	150 Lbs. of nitrogen (liquid) @ $0.243/lb.
Weed Control	May	Custom applied @ $6.00/acre 1.5 Pints of Fusilade @ $18.45/pt. 1 Qt. of crop oil @ $1.96/qt.
Weed Control	June	Custom applied @ $6.00/acre 2 Lb. of Lorox @ $13.25/lb.
Hand Weeding	July	Custom hired @ $50.00/acre
Insecticide/ Fungicide*	Season	Custom aerial applications @ $7.50/application 1.5 Lbs. of Thiodan @ $7.45/lb. 2 Pints of Bravo @ $7.37/pt.
Chemigate*	Season	2 Pints of Bravo @ $7.37/pt.
Haul	October	Custom hauling of 44 tons of carrots @ $11.00/ton
Overhead	Annual	7.5% of variable cost.

* Number of applications and amount of material used can vary significantly depending on conditions within growing area.

TABLE 3A. ITEMIZED COSTS PER ACRE FOR PRODUCING GROWER HARVESTED CHANTENAY (DICER) CARROTS IN THE SOUTH COLUMBIA BASIN OF WASHINGTON STATE.

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS		$		$	
CUSTOM FUMIGATE	ACRE	37.00	1.00	37.00	
CUSTOM SOIL TEST	ACRE	3.00	2.00	6.00	
CUSTOM FERTILIZE	ACRE	6.00	1.00	6.00	
CUSTOM SPRAYING	ACRE	6.00	2.00	12.00	
CUSTOM AERIAL	ACRE	7.50	1.00	7.50	
CUSTOM HAULING	TON	11.00	44.00	484.00	
COATED SEED	ACRE	35.00	1.00	35.00	
NITROGEN (DRY)	LB.	.21	100.00	21.50	
NITROGEN (LIQ)	LB.	.24	150.00	36.45	
PHOSPHATE (DRY)	LB.	.27	120.00	32.40	
POTASH	LB.	.17	110.00	18.48	
SULFUR	LB.	.13	40.00	5.16	
ZINC	LB.	1.38	5.00	6.90	
BORON	LB.	2.70	1.00	2.70	
TELONE II	GAL.	10.18	18.00	183.24	
LOROX	LB.	13.25	3.00	39.75	
FUSILADE	PINT	18.45	1.50	27.67	
CROP OIL	QT.	1.96	1.00	1.96	
THIODAN	LB.	7.45	1.50	11.18	
BRAVO	PINT	7.37	4.00	29.48	
HAND WEEDING	ACRE	50.00	1.00	50.00	
LABOR(TRAC/MACH)	HOUR	12.00	8.77	105.26	
IRRIGATION REPAIR	ACRE	15.00	1.00	15.00	
IRRIGATION POWER/CHG	ACRE	75.00	1.00	75.00	
TRACTOR REPAIR	ACRE	34.31	1.00	34.31	
TRACTOR FUEL/LUBE	ACRE	43.66	1.00	43.66	
MACHINERY REPAIRS	ACRE	44.01	1.00	44.01	
MACHINE FUEL/LUBE	ACRE	3.77	1.00	3.77	
OVERHEAD	ACRE	106.27	1.00	106.27	
INTEREST ON OP. CAP.	ACRE	41.57	1.00	41.57	
TOTAL VARIABLE COST				1523.22	
FIXED COSTS		$		$	
TRACTOR DEPRECIATION	ACRE	23.77	1.00	23.77	
TRACTOR INTEREST	ACRE	20.79	1.00	20.79	
TRACTOR INSURANCE	ACRE	1.39	1.00	1.39	
TRACTOR TAXES	ACRE	4.16	1.00	4.16	
TRACTOR HOUSING	ACRE	2.31	1.00	2.31	
MACHINE DEPRECIATION	ACRE	31.88	1.00	31.88	
MACHINE INTEREST	ACRE	20.97	1.00	20.97	
MACHINE INSURANCE	ACRE	1.40	1.00	1.40	
MACHINE TAXES	ACRE	4.19	1.00	4.19	
MACHINE HOUSING	ACRE	2.33	1.00	2.33	
LAND RENT	ACRE	300.00	1.00	300.00	
MANAGEMENT FEE	ACRE	154.00	1.00	154.00	
TOTAL FIXED COST				567.19	
TOTAL COST				2090.41	

TABLE 4A. BREAK-EVEN SELLING PRICE PER TON OF GROWER HARVESTED CHANTENAY CARROTS PRODUCED IN THE SOUTH COLUMBIA BASIN.

		COST PER ACRE	YOUR FARM	BREAK-EVEN PRICE ($/TON)	YOUR FARM
		$	$	(40 TONS)	$
1.	TOTAL VARIABLE COST	1,523.22	_____	38.08	_____
PLUS:	TRACTOR & MACHINERY INSURANCE	2.79	_____		
	TRACTOR & MACHINERY TAXES	8.35	_____		
	LAND RENT	300.00	_____		
2.	TOTAL CASH COSTS	1,834.36	_____	45.86	_____
PLUS:	TRACTOR & MACHINERY DEPRECIATION	55.66	_____		
3.	TOTAL CASH COST & DEPRECIATION	1,890.02	_____	47.25	_____
PLUS:	TRACTOR & MACHINERY INTEREST	41.76	_____		
	TRACTOR & MACHINERY HOUSING	4.64	_____		
	MANAGEMENT*	145.75	_____		
4.	TOTAL COST**	2,082.17	_____	52.05	_____

* 7% OF GROSS RECEIPTS (40 TONS X $52.05 X .07).

** TOTAL COST FIGURE IS DIFFERENT THAN THAT IN TABLES 1A AND 2A DUE TO DECREASED MANAGEMENT COST AS PRICE RECEIVED DECREASES.

TABLE 5A. SUMMARY OF RECEIPTS, COSTS, AND PROFITABILITY PER ACRE FOR GROWER HARVESTED CHANTENAY CARROTS PRODUCED IN THE SOUTH COLUMBIA BASIN.

	PRICE/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
GROSS RECEIPTS				
CHANTENAY CARROTS	$55.00	40 TONS	$2,200.00	_____
1. TOTAL RECEIPTS			2,200.00	_____
LESS: TOTAL VARIABLE COST			1,523.22	_____
LAND RENT			300.00	_____
2. RETURNS OVER VARIABLE COST AND LAND RENT			376.78	_____
LESS: TRACTOR & MACHINERY FIXED COST			113.19	_____
3. NET RETURNS TO MANAGEMENT AND RISK			263.59	_____
LESS: MANAGEMENT*			154.00	_____
4. RETURNS OVER TOTAL COSTS			109.59	_____

* 7% OF GROSS RECEIPTS (40 TONS X $55.00 X .07).

TABLE 6A. RETURNS OVER TOTAL COSTS AT VARIOUS PRICE AND NET YIELD LEVELS FOR GROWER HARVESTED CHANTENAY CARROTS PRODUCED IN THE SOUTH COLUMBIA BASIN.

YIELD PRICE	32 TONS	36 TONS	40 TONS	44 TONS	48 TONS
$/Ton	$	$	$	$	$
40	-642	-545	-448	-352	-255
43	-553	-445	-337	-229	-121
46	-463	-344	-225	-106	13
49	-374	-244	-114	17	147
52	-284	-143	-2	139	281
55	-195	-43	110	262	415
58	-106	57	221	385	549

TABLE 1B. SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR PRODUCING PROCESSOR HARVESTED CHANTENAY (DICER) CARROTS IN THE NORTH COLUMBIA BASIN OF WASHINGTON STATE.

							VARIABLE COST						
OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.	TOTAL VARIABLE COST	TOTAL COST
						$	$	$	$	$	$	$	$
SOIL TEST*	FOR NEMATODES	FALL	1999	.00	.00	.00	.00	.00	3.00	.00	.25	3.25	3.25
SOIL TEST	FOR NUTRIENTS	MAR	2000	.00	.00	.00	.00	.00	3.00	.00	.16	3.16	3.16
DISC&PACK(1.5X)	200HP-WT, 20' DISC & PACK	MAR	2000	.16	.19	4.02	4.85	2.28	.00	.00	.37	7.50	11.52
PLOW & PACK	150HP-4BTM PLOW & 7' PACK	MAR	2000	.40	.48	7.09	8.78	5.76	.00	.00	.76	15.30	22.39
FERTILIZE	CUSTOM APPLIED	MAR	2000	.00	.00	.00	.00	.00	6.00	87.14	4.89	98.03	98.03
WEED CONTROL	150HP-WT,SPRAYER	APR	2000	.11	.13	1.98	2.20	1.56	.00	13.25	.77	17.78	19.76
LIST	150HP-WT, LISTER	APR	2000	.20	.24	2.96	3.51	2.88	.00	.00	.29	6.68	9.64
PLANT	85HP-WT, PRECISION BELT PLANT.	APR	2000	.50	.60	13.32	10.34	7.20	.00	35.00	2.36	54.91	68.23
IRRIGATE	CENTER PIVOT, 44 AC. IN.	SEA	2000	.00	1.00	.00	15.00	12.00	75.00	.00	4.59	106.59	106.59
NITROGATION	THROUGH SPRINKLERS (150# N)	SEA	2000	.00	.00	.00	.00	.00	.00	36.45	1.64	38.09	38.09
CULTIVATE	85HP-WT, 8R-CULTIVATOR	MAY	2000	.33	.40	4.80	4.20	4.75	.00	.00	.34	9.29	14.08
WEED CONTROL	CUSTOM APPLIED	MAY	2000	.00	.00	.00	.00	.00	6.00	29.64	1.34	36.97	36.97
CULTIVATE LAY-BY	85HP-WT, 8R-CULTIVATOR	JUN	2000	.33	.40	4.80	4.20	4.75	.00	.00	.27	9.22	14.02
WEED CONTROL	CUSTOM APPLIED	JUN	2000	.00	.00	.00	.00	.00	6.00	26.50	.98	33.47	33.47
HAND WEEDING	CUSTOM WEEDING	JUL	2000	.00	.00	.00	.00	.00	50.00	.00	1.13	51.12	51.12
CHEMIGATE**	APPLY FUNGICIDE	SEA	2000	.00	.00	.00	.00	.00	.00	14.74	.66	15.40	15.40
TOP	85HP-WT, FORAGE CHOPPER	OCT	2000	1.00	1.20	11.98	9.95	14.40	.00	.00	.00	24.35	36.33
HARVEST***	PROCESSOR HARVESTED	OCT	2000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
LABOR PICKUP	3/4 TON	ANN	2000	.67	.80	2.62	4.09	9.60	.00	.00	.62	14.31	16.92
MANAGER PICKUP	3/4 TON	ANN	2000	.50	.00	4.17	4.41	.00	.00	.00	.20	4.61	8.78
MANAGEMENT	7% OF GROSS RECEIPTS	ANN	2000	.00	.00	70.84	.00	.00	.00	.00	.00	.00	70.84
OVERHEAD	UTILITIES,LEGAL,ACCT.,ETC.	ANN	2000	.00	.00	.00	.00	.00	41.25	.00	.00	41.25	41.25
LAND COST	RENTAL RATE	ANN	2000	.00	.00	200.00	.00	.00	.00	.00	.00	.00	200.00
TOTAL PER ACRE				4.20	5.43	328.56	71.54	65.18	190.25	242.72	21.60	591.29	919.85

* IF FUMIGATION IS REQUIRED, THE COST IS APPROXIMATELY $240/ACRE.

** NUMBER OF APPLICATIONS AND AMOUNT OF MATERIAL USED CAN VARY SIGNIFICANTLY DEPENDING ON CONDITIONS WITHIN GROWING AREA.

*** ON LAND THAT IS OWNED AND NOT RENTED, AFTER HARVEST A COVER CROP IS GENERALLY ESTABLISHED IN OCTOBER AND DESTROYED IN THE SPRING OF THE FOLLOWING YEAR AT AN APPROXIMATE COST OF $40/ACRE.

Table 2B. Material and Services Used by Operation for Producing Processor Harvested Chantenay (Dicer) Carrots in the North Columbia Basin of Washington State.

Operation	Month	Material and/or Service
Soil Test (for nematodes)	Fall	Service cost @ an average cost of $3.00/acre
Soil Test (for nutrients)	March	Service cost @ an average cost of $3.00/acre
Fertilize	March	Custom applied @ $6.00/acre 100 Lbs. of nitrogen (dry) @$0.215/lb. 120 Lbs. of phosphate @ $0.27/lb. 110 Lbs. of potash @ $0.168/lb. 40 Lbs. of sulfur @ $0.129/lb. 5 Lbs. of zinc @ $1.38/lb. 1 Lb. of boron @ $2.70/lb.
Weed Control	April	1 Lb. of Lorox @ $13.25/lb.
Plant	April	Coated seed @ $35.00/acre
Irrigate	Season	Irrigation charge and power costs @ $75.00/acre
Nitrogate	Season	150 Lbs. of nitrogen (liquid) @ $0.243/lb.
Weed Control	May	Custom applied @ $6.00/acre 1.5 Pints of Fusilade @ $18.45/pt. 1 Qt. of crop oil @ $1.96/qt.
Weed Control	June	Custom applied @ $6.00/acre 2 Lb. of Lorox @ $13.25/lb.
Hand Weeding	July	Custom hired @ $50.00/acre
Chemigate*	Season	2 Pints of Bravo @ $7.37/pt.
Overhead	Annual	7.5% of variable cost.

* Number of applications and amount of material used can vary significantly depending on conditions within growing area.

TABLE 3B. ITEMIZED COSTS PER ACRE FOR PRODUCING PROCESSOR HARVESTED CHANTENAY (DICER) CARROTS IN THE NORTH COLUMBIA BASIN OF WASHINGTON STATE.

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS		$		$	
CUSTOM SOIL TEST	ACRE	3.00	2.00	6.00	
CUSTOM FERTILIZE	ACRE	6.00	1.00	6.00	
CUSTOM SPRAYING	ACRE	6.00	2.00	12.00	
COATED SEED	ACRE	35.00	1.00	35.00	
NITROGEN (DRY)	LB.	.21	100.00	21.50	
NITROGEN (LIQ)	LB.	.24	150.00	36.45	
PHOSPHATE (DRY)	LB.	.27	120.00	32.40	
POTASH	LB.	.17	110.00	18.48	
SULFUR	LB.	.13	40.00	5.16	
ZINC	LB.	1.38	5.00	6.90	
BORON	LB.	2.70	1.00	2.70	
LOROX	LB.	13.25	3.00	39.75	
FUSILADE	PINT	18.45	1.50	27.67	
CROP OIL	QT.	1.96	1.00	1.96	
BRAVO	PINT	7.37	2.00	14.74	
HAND WEEDING	ACRE	50.00	1.00	50.00	
LABOR(TRAC/MACH)	HOUR	12.00	5.43	65.18	
IRRIGATION REPAIR	ACRE	15.00	1.00	15.00	
IRRIGATION POWER/CHG	ACRE	75.00	1.00	75.00	
TRACTOR REPAIR	ACRE	14.37	1.00	14.37	
TRACTOR FUEL/LUBE	ACRE	19.04	1.00	19.04	
MACHINERY REPAIRS	ACRE	19.37	1.00	19.37	
MACHINE FUEL/LUBE	ACRE	3.77	1.00	3.77	
OVERHEAD	ACRE	41.25	1.00	41.25	
INTEREST ON OP. CAP.	ACRE	21.60	1.00	21.60	
TOTAL VARIABLE COST				591.29	
FIXED COSTS		$		$	
TRACTOR DEPRECIATION	ACRE	11.30	1.00	11.30	
TRACTOR INTEREST	ACRE	9.57	1.00	9.57	
TRACTOR INSURANCE	ACRE	.64	1.00	.64	
TRACTOR TAXES	ACRE	1.91	1.00	1.91	
TRACTOR HOUSING	ACRE	1.06	1.00	1.06	
MACHINE DEPRECIATION	ACRE	16.07	1.00	16.07	
MACHINE INTEREST	ACRE	12.46	1.00	12.46	
MACHINE INSURANCE	ACRE	.83	1.00	.83	
MACHINE TAXES	ACRE	2.49	1.00	2.49	
MACHINE HOUSING	ACRE	1.38	1.00	1.38	
MANAGEMENT FEE	ACRE	70.84	1.00	70.84	
LAND RENT	ACRE	200.00	1.00	200.00	
TOTAL FIXED COST				328.56	
TOTAL COST				919.85	

TABLE 4B. BREAK-EVEN SELLING PRICE PER TON OF PROCESSOR HARVESTED CHANTENAY CARROTS PRODUCED IN THE NORTH COLUMBIA BASIN.

		COST PER ACRE	YOUR FARM	BREAK-EVEN PRICE ($/TON)	YOUR FARM
		$	$	(23 TONS)*	$
1.	TOTAL VARIABLE COST	591.12	_____	25.71	_____
PLUS:	TRACTOR & MACHINERY INSURANCE	1.47	_____		
	TRACTOR & MACHINERY TAXES	4.40	_____		
	LAND RENT	200.00	_____		
2.	TOTAL CASH COSTS	797.16	_____	34.66	_____
PLUS:	TRACTOR & MACHINERY DEPRECIATION	27.37	_____		
3.	TOTAL CASH COST & DEPRECIATION	824.53	_____	35.85	_____
PLUS:	TRACTOR & MACHINERY INTEREST	22.03	_____		
	TRACTOR & MACHINERY HOUSING	2.44	_____		
	MANAGEMENT**	63.90	_____		
4.	TOTAL COST***	912.90	_____	39.69	_____

* PAID ON 65% OF GROSS HARVEST (35 TONS).

** 7% OF GROSS RECEIPTS (23 TONS X $39.69 X .07).

*** TOTAL COST FIGURE IS DIFFERENT FROM THAT IN TABLES 1B AND 2B DUE TO DECREASED MANAGEMENT COST AS PRICE RECEIVED DECREASES.

TABLE 5B. SUMMARY OF RECEIPTS, COSTS, AND PROFITABILITY PER ACRE FOR PROCESSOR HARVESTED CHANTENAY CARROTS PRODUCED IN THE NORTH COLUMBIA BASIN.

		PRICE/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
GROSS RECEIPTS					
	CHANTENAY CARROTS	$44.00	23 TONS	$1,012.00	_____
1.	TOTAL RECEIPTS			1,012.00	_____
	LESS: TOTAL VARIABLE COST			591.29	_____
	LAND RENT			200.00	_____
2.	RETURNS OVER VARIABLE COST AND LAND RENT			220.71	_____
	LESS: TRACTOR & MACHINERY FIXED COST			57.72	_____
3.	NET RETURNS TO MANAGEMENT AND RISK			62.99	_____
	LESS: MANAGEMENT*			70.84	_____
4.	RETURNS OVER TOTAL COSTS			92.15	_____

* 7% OF GROSS RECEIPTS (23 TONS X $44.00 X .07).

TABLE 6B. RETURNS OVER TOTAL COSTS AT VARIOUS PRICE AND NET YIELD LEVELS FOR PROCESSOR HARVESTED CHANTENAY CARROTS PRODUCED IN THE NORTH COLUMBIA BASIN.

YIELD PRICE	17 TONS	20 TONS	23 TONS	26 TONS	29 TONS
$/Ton	$	$	$	$	$
35	-296	-198	-100	-3	95
38	-248	-142	-36	70	176
41	-201	-86	28	142	257
44	-153	-31	92	215	338
47	-106	25	156	287	419
50	-59	81	220	360	499
53	-11	137	285	433	580

TABLE 1C. SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR PRODUCING GROWER HARVESTED IMPERATOR (FRESH AND SLICING) CARROTS IN THE SOUTH COLUMBIA BASIN OF WASHINGTON STATE.

							VARIABLE COST						
OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.	TOTAL VARIABLE COST	TOTAL COST
						$	$	$	$	$	$	$	$
SOIL TEST	FOR NEMATODES	FALL	1999	.00	.00	.00	.00	.00	3.00	.00	.25	3.25	3.25
FUMIGATE	CUSTOM APPLIED	FALL	1999	.00	.00	.00	.00	.00	37.00	183.24	18.17	238.41	238.41
SOIL TEST	FOR NUTRIENTS	MAR	2000	.00	.00	.00	.00	.00	3.00	.00	.16	3.16	3.16
DISC&PACK(1.5X)	200HP-WT, 20' DISC & PACK	MAR	2000	.16	.19	4.02	4.85	2.28	.00	.00	.37	7.50	11.52
PLOW & PACK	150HP-4BTM PLOW & 7' PACK	MAR	2000	.40	.48	7.09	8.78	5.76	.00	.00	.76	15.30	22.39
FERTILIZE	CUSTOM APPLIED	MAR	2000	.00	.00	.00	.00	.00	6.00	87.14	4.89	98.03	98.03
WEED CONTROL	150HP-WT,SPRAYER	APR	2000	.11	.13	1.98	2.20	1.56	.00	13.25	.77	17.78	19.76
LIST	150HP-WT, LISTER	APR	2000	.20	.24	2.96	3.51	2.88	.00	.00	.29	6.68	9.64
BED SHAPING	150HP-WT, BED SHAPER	APR	2000	.20	.24	3.38	3.64	2.88	.00	.00	.29	6.82	10.19
PLANT\FUNGICIDE	85HP-WT, PRECISION AIR PLANTER	APR	2000	.50	.60	15.83	11.84	7.20	.00	393.40	18.56	431.00	446.83
IRRIGATE	CENTER PIVOT, 44 AC. IN.	SEA	2000	.00	1.00	.00	15.00	12.00	75.00	.00	4.59	106.59	106.59
NITROGATION	THROUGH SPRINKLERS (150# N)	SEA	2000	.00	.00	.00	.00	.00	.00	36.45	1.64	38.09	38.09
CULTIVATE	85HP-WT, 8R-CULTIVATOR	MAY	2000	.33	.40	4.80	4.20	4.75	.00	.00	.34	9.29	14.08
WEED CONTROL	CUSTOM APPLIED	MAY	2000	.00	.00	.00	.00	.00	6.00	29.64	1.34	36.97	36.97
CULTIVATE LAY-BY	85HP-WT, 8R-CULTIVATOR	JUN	2000	.33	.40	4.80	4.20	4.75	.00	.00	.27	9.22	14.02
WEED CONTROL	CUSTOM APPLIED	JUN	2000	.00	.00	.00	.00	.00	6.00	26.50	.98	33.47	33.47
HAND WEEDING	CUSTOM WEEDING	JUL	2000	.00	.00	.00	.00	.00	50.00	.00	1.13	51.12	51.12
INSECT/FUNG APP*	CUSTOM AERIAL	SEA	2000	.00	.00	.00	.00	.00	7.50	25.91	1.50	34.92	34.92
CHEMIGATE (2X)*	APPLY FUNGICIDE	SEA	2000	.00	.00	.00	.00	.00	.00	40.74	1.83	42.57	42.57
HARVEST (2 MEN)	150HP-WT, 2R-HARVESTER	OCT	2000	1.00	2.40	32.33	27.53	28.80	.00	.00	.00	56.33	88.66
FIELD LOADING	200HP-WT, PULLING TRAILER	OCT	2000	1.00	1.20	12.63	20.41	14.40	.00	.00	.00	34.80	47.43
HAUL**	CUSTOM HAULING	OCT	2000	.00	.00	.00	.00	.00	363.00	.00	.00	363.00	363.00
LABOR PICKUP	3/4 TON	ANN	2000	.67	.80	2.62	4.09	9.60	.00	.00	.62	14.31	16.92
MANAGER PICKUP	3/4 TON	ANN	2000	.50	.00	4.17	4.41	.00	.00	.00	.20	4.61	8.78
MANAGEMENT	7% OF GROSS RECEIPTS	ANN	2000	.00	.00	162.40	.00	.00	.00	.00	.00	.00	162.40
OVERHEAD	UTILITIES,LEGAL,ACCT.,ETC.	ANN	2000	.00	.00	.00	.00	.00	124.74	.00	.00	124.74	124.74
LAND COST	RENTAL RATE	ANN	2000	.00	.00	300.00	.00	.00	.00	.00	.00	.00	300.00
TOTAL PER ACRE				5.40	8.07	558.98	114.67	96.86	681.24	836.27	58.93	1787.97	2346.95

* NUMBER OF APPLICATIONS AND AMOUNT OF MATERIAL USED CAN VARY SIGNIFICANTLY DEPENDING ON CONDITIONS WITHIN GROWING AREA.

** ON LAND THAT IS OWNED AND NOT RENTED, AFTER HARVEST A COVER CROP IS GENERALLY ESTABLISHED IN OCTOBER AND DESTROYED IN THE SPRING OF THE FOLLOWING YEAR AT AN APPROXIMATE COST OF $40/ACRE.

Table 2C. Material and Services Used by Operation for Producing Grower Harvested Imperator (Fresh and Slicing) Carrots in the South Columbia Basin of Washington State.

Operation	Month	Material and/or Service
Soil Test (for nematodes)	Fall	Service cost @ an average cost of $3.00/acre
Fumigate	Fall	Custom applied @ $37.00/acre 18 gals. of Telone II @ $10.18/gal.
Soil Test (for nutrients)	March	Service cost @ an average cost of $3.00/acre
Fertilize	March	Custom applied @ $6.00/acre 100 Lbs. of nitrogen (dry) @$0.215/lb. 120 Lbs. of phosphate @ $0.27/lb. 110 Lbs. of potash @ $0.168/lb. 40 Lbs. of sulfur @ $0.129/lb. 5 Lbs. of zinc @ $1.38/lb. 1 Lb. of boron @ $2.70/lb.
Weed Control	April	1 Lb. of Lorox @ $13.25/lb.
Plant/Fungicide	April	Raw seed @ $200.00/acre 2 Pints of Ridomil Gold @ $96.70/pint
Irrigate	Season	Irrigation charge and power costs @ $75.00/acre
Nitrogate	Season	150 Lbs. of nitrogen (liquid) @ $0.243/lb.
Weed Control	May	Custom applied @ $6.00/acre 1.5 Pints of Fusilade @ $18.45/pt. 1 Qt. of crop oil @ $1.96/qt.
Weed Control	June	Custom applied @ $6.00/acre 2 Lb. of Lorox @ $13.25/lb.
Hand Weeding	July	Custom hired @ $50.00/acre
Insecticide/ Fungicide*	Season	Custom aerial applications @ $7.50/application 1.5 Lbs. of Thiodan @ $7.45/lb. 2 Pints of Bravo @ $7.37/pt.
Chemigate (2X)*	Season	2 Pints of Bravo @ $7.37/pt. 2 Lbs. of Rydomil Copper @ $13.00/lb.
Haul	October	Custom hauling of 33 tons of carrots @ $11.00/ton
Overhead	Annual	7.5% of variable cost.

* Number of applications and amount of material used can vary significantly depending on conditions within growing area.

TABLE 3C. ITEMIZED COSTS PER ACRE FOR PRODUCING GROWER HARVESTED IMPERATOR (FRESH AND SLICING) CARROTS IN THE SOUTH COLUMBIA BASIN OF WASHINGTON STATE.

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS		$		$	
CUSTOM FUMIGATE	ACRE	37.00	1.00	37.00	
CUSTOM SOIL TEST	ACRE	3.00	2.00	6.00	
CUSTOM FERTILIZE	ACRE	6.00	1.00	6.00	
CUSTOM SPRAYING	ACRE	6.00	2.00	12.00	
CUSTOM AERIAL	ACRE	7.50	1.00	7.50	
CUSTOM HAULING	TON	11.00	33.00	363.00	
RAW SEED	ACRE	200.00	1.00	200.00	
NITROGEN (DRY)	LB.	.21	100.00	21.50	
NITROGEN (LIQ)	LB.	.24	150.00	36.45	
PHOSPHATE (DRY)	LB.	.27	120.00	32.40	
POTASH	LB.	.17	110.00	18.48	
SULFUR	LB.	.13	40.00	5.16	
ZINC	LB.	1.38	5.00	6.90	
BORON	LB.	2.70	1.00	2.70	
TELONE II	GAL.	10.18	18.00	183.24	
LOROX	LB.	13.25	3.00	39.75	
FUSILADE	PINT	18.45	1.50	27.67	
CROP OIL	QT.	1.96	1.00	1.96	
BRAVO	PINT	7.37	4.00	29.48	
THIODAN	LB.	7.45	1.50	11.18	
RIDOMIL GOLD	PINT	96.70	2.00	193.40	
RIDOMIL COPPER	LB.	13.00	2.00	26.00	
HAND WEEDING	ACRE	50.00	1.00	50.00	
LABOR(TRAC/MACH)	HOUR	12.00	8.07	96.86	
IRRIGATION REPAIR	ACRE	15.00	1.00	15.00	
IRRIGATION POWER/CHG	ACRE	75.00	1.00	75.00	
TRACTOR REPAIR	ACRE	28.37	1.00	28.37	
TRACTOR FUEL/LUBE	ACRE	35.99	1.00	35.99	
MACHINERY REPAIRS	ACRE	31.54	1.00	31.54	
MACHINE FUEL/LUBE	ACRE	3.77	1.00	3.77	
OVERHEAD	ACRE	124.74	1.00	124.74	
INTEREST ON OP. CAP.	ACRE	58.93	1.00	58.93	
TOTAL VARIABLE COST				1787.97	
FIXED COSTS		$		$	
TRACTOR DEPRECIATION	ACRE	18.98	1.00	18.98	
TRACTOR INTEREST	ACRE	16.76	1.00	16.76	
TRACTOR INSURANCE	ACRE	1.12	1.00	1.12	
TRACTOR TAXES	ACRE	3.35	1.00	3.35	
TRACTOR HOUSING	ACRE	1.86	1.00	1.86	
MACHINE DEPRECIATION	ACRE	26.86	1.00	26.86	
MACHINE INTEREST	ACRE	20.07	1.00	20.07	
MACHINE INSURANCE	ACRE	1.34	1.00	1.34	
MACHINE TAXES	ACRE	4.01	1.00	4.01	
MACHINE HOUSING	ACRE	2.23	1.00	2.23	
LAND RENT	ACRE	300.00	1.00	300.00	
MANAGEMENT FEE	ACRE	162.40	1.00	162.40	
TOTAL FIXED COST				558.98	
TOTAL COST				2346.95	

TABLE 4C. BREAK-EVEN SELLING PRICE PER TON OF GROWER HARVESTED IMPERATOR CARROTS PRODUCED IN THE SOUTH COLUMBIA BASIN.

		COST PER ACRE	YOUR FARM	BREAK-EVEN PRICE ($/TON)	YOUR FARM
		$	$	(29 TONS)	$
1.	TOTAL VARIABLE COST	1,787.97	_____	61.65	_____
PLUS:	TRACTOR & MACHINERY INSURANCE	2.46	_____		
	TRACTOR & MACHINERY TAXES	7.36	_____		
	LAND RENT	300.00	_____		
2.	TOTAL CASH COSTS	2,097.79	_____	72.34	_____
PLUS:	TRACTOR & MACHINERY DEPRECIATION	45.84	_____		
3.	TOTAL CASH COST & DEPRECIATION	2,143.63	_____	73.90	_____
PLUS:	TRACTOR & MACHINERY INTEREST	36.83	_____		
	TRACTOR & MACHINERY HOUSING	4.09	_____		
	MANAGEMENT*	164.43	_____		
4.	TOTAL COST**	2,348.98	_____	81.00	_____

* 7% OF GROSS RECEIPTS (29 TONS X $81.00 X .07).

** TOTAL COST FIGURE IS DIFFERENT FROM THAT IN TABLES 1C AND 2C DUE TO INCREASED MANAGEMENT COST AS PRICE RECEIVED INCREASES.

TABLE 5C. SUMMARY OF RECEIPTS, COSTS, AND PROFITABILITY PER ACRE FOR GROWER HARVESTED IMPERATOR CARROTS PRODUCED IN THE SOUTH COLUMBIA BASIN.

		PRICE/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
GROSS RECEIPTS					
	IMPERATOR CARROTS	$80.00	29 TONS	$2,320.00	_____
1.	TOTAL RECEIPTS			2,320.00	_____
	LESS: TOTAL VARIABLE COST			1,787.97	_____
	LAND RENT			300.00	_____
2.	RETURNS OVER VARIABLE COST AND LAND RENT			232.03	_____
	LESS: TRACTOR & MACHINERY FIXED COST			96.58	_____
3.	NET RETURNS TO MANAGEMENT AND RISK			135.45	_____
	LESS: MANAGEMENT*			162.40	_____
4.	RETURNS OVER TOTAL COSTS			-26.95	_____

* 7% OF GROSS RECEIPTS (29 TONS X $80.00 X .07).

TABLE 6C. RETURNS OVER TOTAL COSTS AT VARIOUS PRICE AND NET YIELD LEVELS FOR GROWER HARVESTED IMPERATOR CARROTS PRODUCED IN THE SOUTH COLUMBIA BASIN.

YIELD PRICE	25 TONS	27 TONS	29 TONS	31 TONS	33 TONS
$/Ton	$	$	$	$	$
76	-364	-249	-135	-20	94
78	-317	-199	-81	37	155
80	-271	-149	-27	95	217
82	-224	-99	27	153	278
84	-178	-49	81	210	339
86	-131	2	135	268	401
88	-85	52	189	326	462

TABLE 7. HOURLY MACHINERY COSTS

MACHINERY	PURCHASE PRICE	YEARS TO TRADE	ANNUAL HOURS	DEPREC-IATION	INTER-EST	INSUR-ANCE	TAXES	HOUSING	TOTAL FIXED COST	REPAIR	FUEL AND LUBE	TOTAL VARIABLE COST	TOTAL COST
	$			COST PER HOUR									
150HP-WT	71,750.00	12	1000	4.48	4.04	.27	.81	.45	10.05	7.18	7.25	14.42	24.47
200HP-WT	90,200.00	12	1000	5.64	5.07	.34	1.01	.56	12.63	9.02	9.32	18.34	30.96
85HP-WT	38,750.00	15	700	3.34	2.73	.18	.55	.30	7.10	3.62	4.14	7.76	14.86
4-18" MB PLOW	10,500.00	10	250	3.46	2.22	.15	.44	.25	6.52	5.03	.00	5.03	11.55
7' PACKER	1,850.00	10	250	.61	.39	.03	.08	.04	1.15	.89	.00	.89	2.04
20' PACKER	4,000.00	7	350	1.22	.65	.04	.13	.07	2.11	1.91	.00	1.91	4.01
20' OFFSET DISC	16,700.00	10	250	5.50	3.54	.24	.71	.39	10.37	8.00	.00	8.00	18.38
2R-HARVESTER	35,875.00	10	250	11.81	7.60	.51	1.52	.84	22.28	11.50	.00	11.50	33.78
8R-CULTIVATOR	8,700.00	15	150	3.50	2.86	.19	.57	.32	7.44	4.04	.00	4.04	11.48
SPRAYER	5,125.00	10	100	4.22	2.71	.18	.54	.30	7.96	3.98	.00	3.98	11.94
LISTER	3,700.00	15	100	2.23	1.82	.12	.36	.20	4.74	1.52	.00	1.52	6.27
BED SHAPER	5,330.00	15	100	3.21	2.63	.18	.53	.29	6.83	2.19	.00	2.19	9.03
FORAGE CHOPPER	4,700.00	10	150	2.62	1.64	.11	.33	.18	4.88	1.27	.00	1.27	6.15
CROWNER	13,300.00	5	270	6.64	2.94	.20	.59	.33	10.69	11.26	.00	11.26	21.95
6R-BEET DIGGER	15,400.00	10	250	5.07	3.26	.22	.65	.36	9.56	7.38	.00	7.38	16.95
PREC. BELT PLANTER	14,350.00	12	100	6.83	9.23	.62	1.85	1.03	19.54	12.00	.00	12.00	31.54
PREC. AIR PLANTER	18,000.00	12	100	8.75	11.48	.77	2.30	1.28	24.56	15.00	.00	15.00	39.56
LABOR PICKUP	7,200.00	5	400	2.43	1.07	.07	.21	.12	3.91	2.88	2.76	5.64	9.55
MANAGER'S PICKUP	21,000.00	6	500	4.98	2.43	.16	.49	.27	8.34	5.61	2.76	8.37	16.71

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

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Published 2000. Subject codes 274, 340.A.

EB1504