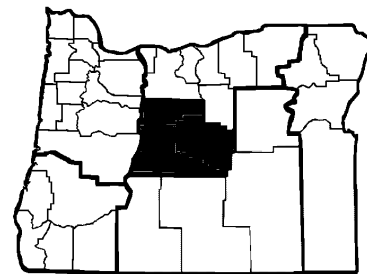


Enterprise Budget

Carrot Seed Production, Central Oregon Region

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EM 8573, Revised October 2002

This enterprise budget estimates the typical costs and returns of producing hybrid carrot seed in the Madras area of central Oregon. While efforts were made to reflect common practices, it is not representative of any particular farm and should be used only as a guide to estimate actual costs. The major assumptions used in constructing this budget are discussed below. Assistance provided by area producers is greatly appreciated.

Cropping Pattern

This budget is based on a typical 600-acre farm with 30 acres in production of hybrid carrot seed following wheat. The budget includes production costs for 1 acre, with a yield of 345 pounds per acre. A summary of the estimated costs and returns per acre is shown in Table 1.

Land and Irrigation

A land lease charge of \$100 per acre is included to represent the cost of leasing or owning the land. The charge is based on the cost of a long-term lease for good-quality irrigated land. The field is sprinkler irrigated using a 10-foot wheel line. A water charge of \$3.17 per acre-inch covers the cost of irrigation water and canal maintenance. Calculations are based on the North Unit Irrigation District rates for Deschutes River water rights. A charge of \$55 per acre covers electricity, repair, and maintenance costs for the sprinkler system. Irrigation fixed costs includes \$42 for interest and depreciation on the irrigation system.

Labor

Hand labor costs \$7.68 per hour, including worker's compensation, social security taxes, and other labor overhead expenses. Operator labor costs \$13.65 per hour and includes worker's compensation, social security taxes, and other labor overhead expenses. Labor hours for machinery operation are calculated by multiplying 1.21 times machine hours to allow for machinery setup, movement, and adjustments. Hired labor is used for sprinkler irrigation.

Capital

Opportunity costs of capital are charged at a rate of 9 percent for current, intermediate, and long-term capital provided by the owner.

Operations

The cultural operations are listed in the budget in the approximate order in which they typically are performed. Table 2 shows the cost of field operations with owned machinery. Land preparation includes burning the wheat stubble, one irrigation set, a fertilizer/weed control application, tillage, and bedding up. Hybrid seed is planted in August followed by four sprinkler irrigation sets, several pesticide applications, cultivation of the small carrots and covering the male carrots with fabric, requiring 5 hours of hand labor.

In the spring, removal of the row covering, thinning, weeding, and replanting require a total of 10 hours of hand labor per acre. Insecticides and fungicides are applied as necessary. An additional 20 inches of water are applied over nine sets using a wheel line. Prior to harvest, the male pollinator rows are rolled down. The carrot seed stalks are swathed and combined.

Machinery and Equipment

The machinery complement is sufficient for producing carrot seed. A detailed breakdown of machinery values and costs used in this budget is shown in Table 3. January 1998 replacement costs are used. The machinery costs per hour are estimated based on the total farm use of the machinery. Fixed costs for machinery and equipment include the cost of interest and depreciation.

Other

A miscellaneous charge of \$10 per acre is included to cover general insurance, tools, office supplies, and other expenses. A pickup and ATV are utilized for hauling supplies, checking irrigation, and other activities related to carrot seed production.

Total variable cost is \$1,248, with a break-even price over variable costs of \$3.62 per pound. The total of all costs is \$1,640, with a break-even price over total costs of \$4.75 per pound.



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Table 1. Carrot seed production: Summary of estimated costs and returns per acre.

Item	Unit	Price (\$)	Quantity	Amount (\$)	Your Farm
INCOME					
Carrot Seed	Pound	7.36	345.0	2,539.20	_____
TOTAL INCOME				2,539.20	_____
DIRECT EXPENSES					
Herbicides	Acre	93.16	1.00	93.16	_____
Insecticides	Acre	229.36	1.00	229.36	_____
Fungicides	Acre	49.44	1.00	49.44	_____
Custom Applications	Acre	93.42	1.00	93.42	_____
Seed	Acre	17.00	1.00	17.00	_____
Bee Hive Rental	Acre	164.00	1.00	164.00	_____
Other	Acre	13.00	1.00	13.00	_____
Hand Labor	Acre	163.41	1.00	163.41	_____
Fertilizer	Acre	89.00	1.00	89.00	_____
Water	Acre	92.72	1.00	92.72	_____
Operator Labor	Hour	13.65	6.72	91.68	_____
Diesel Fuel	Gal	1.30	19.37	25.18	_____
Gasoline	Gal	1.55	4.43	6.87	_____
Repair and Maintenance	Acre	59.48	1.00	59.48	_____
Interest on Operating Capital	Acre	60.44	1.00	60.44	_____
TOTAL DIRECT EXPENSES				1,248.15	_____
RETURNS ABOVE DIRECT EXPENSES				1,291.05	_____
FIXED EXPENSES					
Implements	Acre	35.60	1.00	35.60	_____
Tractors	Acre	83.33	1.00	83.33	_____
Self-propelled Equipment	Acre	79.75	1.00	79.75	_____
Trucks	Acre	2.89	1.00	2.89	_____
TOTAL FIXED EXPENSES				201.57	_____
TOTAL SPECIFIED EXPENSES				1,449.73	_____
RETURNS ABOVE TOTAL SPECIFIED EXPENSES				1,089.47	_____
ALLOCATED COST ITEMS					
General Overhead	Acre	35.00	1.00	35.00	_____
Land Costs	Acre	100.00	1.00	100.00	_____
Sprinkler and Pump Costs	Acre	55.00	1.00	55.00	_____
RESIDUAL RETURNS				899.47	_____

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Table 2. Carrot seed production: Estimated resource use and costs for field operations.

Operation	Perf.	Times	Month	Tractor Cost		Equipment Cost		Labor		Operating Input Cost	Total Cost
	Rate (Hr/ac)	Over		Direct	Fixed	Direct	Fixed	Hours	Cost		
Open Field Burn Previous Year's Crop	0.033	1	Aug	----	----	0.36	2.37	0.22	1.97	1.00	5.70
Disk	0.1	1	Aug	2.13	2.52	1.02	3.59	0.13	1.81	----	11.07
Fertilizer	----	1	Aug	----	----	----	----	----	----	61.92	61.92
64# N, 64# P, 64# K	----	----	----	----	----	----	----	----	----	----	----
Cultimulch	0.1	1	Aug	2.34	2.78	0.24	1.26	0.15	1.99	----	8.61
Bed-up Field	0.2	1	Aug	3.11	4.22	0.08	0.57	0.24	3.30	----	11.28
Plant Carrot Seed	0.5	1	Aug	3.90	5.57	----	----	0.60	8.25	22.00	39.72
Irrigate Labor	----	4	Aug–Oct	----	----	0.65	0.52	2.16	16.58	----	17.75
Water	----	----	----	----	----	----	----	----	----	28.53	28.53
Preemergence Weed Control	----	1	Aug	----	----	----	----	----	----	14.87	14.87
Insect Control	----	1	Sept	----	----	----	----	----	----	116.23	116.23
Grass Control	----	1	Sept	----	----	----	----	----	----	26.13	26.13
Cultivation	0.25	1	Sept	3.89	5.28	0.10	1.05	0.30	4.12	----	14.44
Weed Control	----	1	Sept	----	----	----	----	----	----	27.43	27.43
Disease Control	----	1	Oct	----	----	----	----	----	----	32.47	32.47
Cover Male Carrot Rows	0.5	1	Nov	7.79	10.56	0.50	5.28	2.61	23.61	----	47.74
Remove Covering from Male Rows	1	1	Mar	15.59	21.12	1.00	10.56	5.21	47.23	----	95.50
Side-dress Fertilizer	0.25	1	Mar	3.89	5.28	----	----	0.30	4.12	40.00	53.29
90# N, 30# P, 21# S	----	----	----	----	----	----	----	----	----	----	----
Cultivation	0.25	1	Apr	3.89	5.28	0.10	1.05	0.30	4.12	----	14.44
Thin Carrots	1	1	Apr	7.81	11.14	0.45	6.41	1.21	16.51	----	42.32
Hand Weed	----	1	Apr	----	----	----	----	2.00	15.36	----	15.36
Weed Control	----	1	Apr	----	----	----	----	----	----	31.55	31.55
Irrigate Labor	----	9	May–July	----	----	1.46	1.18	4.86	37.31	----	39.95
Water	----	----	----	----	----	----	----	----	----	64.19	64.19
Hand Weed	----	1	May	----	----	----	----	2.00	15.36	----	15.36
Disease Control	----	1	May	----	----	----	----	----	----	32.47	32.47
Cultivation	0.25	1	June	1.95	2.78	0.10	1.05	0.30	4.12	----	10.00
Hand Weed	----	1	June	----	----	----	----	2.00	15.36	----	15.36
Weed Control	----	1	June	----	----	----	----	----	----	28.93	28.93

¹Fertilizer and pesticide costs include cost of custom application.

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Table 2. cont. Carrot seed production: Estimated resource use and costs for field operations.

Operation	Perf.	Times	Month	Tractor Cost		Equipment Cost		Labor		Operating Input Cost	Total Cost
	Rate (Hr/ac)	Over		Direct	Fixed	Direct	Fixed	Hours	Cost		
Insect Control	----	1	June	----	----	----	----	----	----	56.54	56.54
Bees	----	4	June	----	----	----	----	----	----	164.00	164.00
Insect Control	----	----	July	----	----	----	----	----	----	38.24	38.24
Insect Control	----	----	Aug	----	----	----	----	----	----	48.59	48.59
Roll Male Carrots	0.16	1	Aug	2.49	3.38	0.16	1.69	0.19	2.64	----	10.36
Hand Weed	----	1	Aug	----	----	----	----	2.00	15.36	----	15.36
Harvest	----	----	----	----	----	----	----	----	----	----	----
Swath	0.3	1	Sept	----	----	5.01	14.52	0.36	4.95	----	24.48
Combine w/ Pickup	0.5	1	Sept	----	----	17.88	63.38	0.61	8.25	----	89.51
Two 2-ton Trucks w/ Labor	----	----	----	----	----	0.06	0.65	----	----	----	0.71
Flame Carrot Residue	0.16	1	Sept	2.49	3.38	1.00	3.04	0.19	2.64	6.00	18.55
Total											1,388.95
Interest on Operating Capital											60.44
Total Specified Cost											\$1,449.39

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Table 3. Self-propelled machines, tractors, and implements: Estimated performance rating, useful life, annual use, purchase price, repair cost, fuel consumption rating, and direct and fixed cost per hour and acre.

Item Name	Size	Perf.	Useful	Annual	Purchase	Repair	Fuel	Direct Cost		Fixed Cost	
		Rate	Life	Use	Price	Cost	Cons. Rate	(\$/hour)	(\$/acre)	(\$/hour)	(\$/acre)
		(Hr/acre)	(Years)	(Hours)	(\$)	(Percent purchase price)	(Gallons/hour)				
Combine w/ pickup	14 ft	0.50	20	100	120,000.00	40	7.59	35.76	17.88	126.76	63.38
Swather	12 ft	0.30	20	120	55,000.00	50	4.04	16.71	5.01	48.41	14.52
Combine w/ pickup	14 ft	1.00	20	100	120,000.00	40	7.50	33.75	33.75	122.07	122.07
Swather	12 ft	0.08	20	120	55,000.00	50	4.04	16.71	1.33	48.41	3.87
ATV	20 hp	0.03	10	200	5,600.00	100	1.38	4.93	0.16	3.99	0.13
2wd cab tractor	130 hp	----	20	400	87,000.00	100	6.57	19.41	----	22.97	----
2wd cab tractor	180 hp	----	20	500	125,000.00	80	9.10	21.83	----	26.40	----
2wd tractor	50 hp	----	20	200	21,500.00	80	2.70	7.81	----	11.14	----
2wd tractor	80 hp	----	20	300	60,000.00	100	4.30	15.59	----	21.12	----
Tractor w/loader	80 hp	----	25	100	60,000.00	50	1.00	13.30	----	59.66	----
Bedder bar	12 ft	0.20	10	100	2,000.00	20	----	0.40	0.08	2.85	0.57
Carrot roller	4 row	0.16	20	20	2,000.00	20	----	1.00	0.16	10.56	1.69
Chisel	10 ft	0.20	20	100	12,500.00	50	----	3.12	0.62	13.20	2.64
Cultimulcher	12 ft	0.10	20	100	12,000.00	40	----	2.40	0.24	12.67	1.26
Disk	15 ft	0.10	20	50	17,000.00	60	----	10.20	1.02	35.91	3.59
Electric thinner	4 row	1.00	10	20	900.00	10	----	0.45	0.45	6.41	6.41
Flail mower	15 ft	0.10	20	100	13,500.00	50	----	3.37	0.33	14.26	1.42
Flamer	30 ft	0.16	20	50	9,000.00	70	----	6.30	1.00	19.01	3.04
Flex harrow	20 ft	0.08	25	100	10,000.00	50	----	2.00	0.16	9.94	0.79
Land leveler	12 ft	0.16	20	25	10,000.00	50	----	10.00	1.60	42.25	6.76
Mint planter	16 ft	0.50	25	20	7,500.00	20	----	3.00	1.50	36.71	18.35
Mint rake	12 ft	0.01	20	20	5,000.00	25	----	3.12	0.03	26.40	0.26
Paper roller	10 ft	0.50	20	20	2,000.00	20	----	1.00	0.50	10.56	5.28
Pasture harrow	12 ft	0.08	20	100	1,000.00	50	----	0.25	0.02	1.05	0.08
Precision planter	12.5 ft	0.20	20	75	5,000.00	50	----	1.66	0.33	7.04	1.40
Roller	12 ft	0.10	10	200	5,000.00	25	----	0.62	0.06	3.56	0.35
Rolling cultivator	12 ft	0.25	20	50	2,000.00	20	----	0.40	0.10	4.22	1.05
Rototiller	10 ft	1.00	20	50	4,200.00	80	----	3.36	3.36	8.87	8.87
Row sprayer	12.5 ft	0.20	20	75	13,000.00	70	----	6.06	1.21	18.31	3.66
Tool bar w/shovels	12.5 ft	0.20	25	25	3,000.00	75	----	1.80	0.36	5.96	1.19