

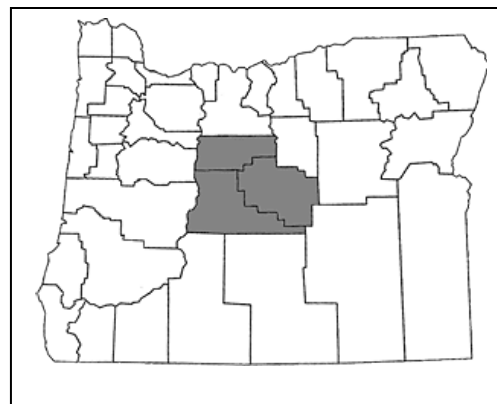
Enterprise Budget

Hybrid Carrot Seed Production under Sprinkler Irrigation Central Oregon Region

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This enterprise budget estimates the typical costs and returns to management of producing hybrid carrot seed under hand line sprinkler irrigation in the Madras and Culver areas of central Oregon. While efforts were made to reflect common practices, this budget is not representative of any particular farm and should only be used as a guide to estimate actual costs. The major assumptions used in constructing the budget are discussed below.

Assistance provided by area growers is greatly appreciated.

Cropping Pattern

This budget is based on a typical 600-acre farm with 40 acres in production of hybrid carrot seed under sprinkle irrigation following wheat. This budget estimates per-acre costs and returns on a typical production year. 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 \$120 dollars 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 hand line. A water charge of \$2.26 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. The fixed costs to operate a sprinkler system are \$220 per acre for interest and depreciation.

Labor

Hand labor, irrigation labor, and rogue labor cost \$11.50 per hour, and operator labor costs \$15.00 per hour. All include 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.

Capital

Opportunity costs of capital are charged at a rate of 8 percent for current, intermediate, and long-term capital provided by the owner.

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. The machinery costs are estimated. Fixed costs for machinery and equipment include the cost of interest and depreciation.

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 application, tillage, and bedding up. Hybrid seed is planted in August followed by four irrigation sets, several pesticide applications, cultivation of small carrots, and covering the male carrots with fabric, which requires 2 hours of hand labor per acre. The field is periodically monitored for pests during the winter months.

In the spring, the row covering is removed, the field is thinned, replanted, rogued (weeding, picking rock, etc), and any necessary nick adjustment made. Removing the row covering and roguing require 4 hours of hand labor and 10 hours of rogue labor, respectively. Pesticides are applied as necessary throughout the spring and summer. An additional 22.5 inches of water is applied over nine sets of sprinkler irrigation. During the summer, roguing requires another 10 hours of rogue labor per acre. Prior to harvest, the male pollinator rows are rolled down. Soon thereafter, harvest commences, and the carrot seed stalks are swathed and combined.

Other

A charge of \$30 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 \$2088.64, and the break-even price over variable costs is \$6.05 per lb. The total of all costs for the production year is \$2901.32, with a break-even price over total costs of \$8.41 per lb.

Table 2. Carrot seed production under hand line sprinkler irrigation: Summary of estimated costs per acre.

Item	Unit	Price \$	Quantity	Amount \$	Your Farm
INCOME					
Carrot Seed	Pound	11.00	345.00	3795.00	
TOTAL INCOME				3795.00	
VARIABLE COSTS					
Insecticides	Acre	170.86	1.00	170.86	
Herbicides	Acre	222.53	1.00	222.53	
Fungicides	Acre	155.77	1.00	155.77	
Fertilizer	Acre	109.90	1.00	109.90	
Other	Acre	104.48	1.00	104.48	
Custom Applications	Acre	142.00	1.00	142.00	
Rentals	Acre	249.60	1.00	249.60	
Seed	Acre	25.00	1.00	25.00	
Water	Acre	79.04	1.00	79.04	
Hand Labor	Hour	11.50	6.73	77.39	
Irrigation Labor	Hour	11.50	7.00	80.50	
Operator Labor	Hour	15.00	10.55	158.28	
Roguing Labor	Hour	11.50	20.00	230.00	
Diesel Fuel	Gal	2.85	24.19	68.93	
Gasoline	Gal	3.00	4.66	14.00	
Repair & Maintenance	Acre	120.12	1.00	120.12	
Interest on Operating Capital	Acre	80.24	1.00	80.24	
TOTAL VARIABLE COSTS				2088.64	
INCOME ABOVE VARIABLE COSTS				1634.32	
FIXED COSTS					
Implements	Acre	79.26	1.00	79.26	
Tractors	Acre	148.07	1.00	148.07	
Self-propelled Equipment	Acre	169.18	1.00	169.18	
Trucks	Acre	13.17	1.00	13.17	
Pickup & Miscellaneous Exp.	Acre	63.00	1.00	63.00	
Land Costs	Acre	120.00	1.00	120.00	
Irrigation Systems	Acre	220.00	1.00	220.00	
TOTAL FIXED COSTS				812.68	
TOTAL OF ALL COSTS				2901.32	
NET INCOME				893.68	

Table 2. Carrot seed production under hand line sprinkler irrigation: Estimated resource costs for field operations.

Operation	Perf. Rate	Times Over	Month	Power Unit Cost		Equipment Cost		Labor		Operating Input	Total Cost
	Hours/acre			Variable	Fixed	Variable	Fixed	Hours	\$		
Open Field Burn	0.033	1	Aug	0.24	0.13	---	---	0.87	12.67	8.00	21.04
Disk Field	0.100	3	Aug	9.89	7.24	4.68	15.21	0.39	5.99	---	43.01
Fertilize Field	---	1	Aug	---	---	---	---	---	---	42.40	42.40
Cultimulch Field	0.100	1	Aug	3.63	2.65	0.24	1.17	0.14	2.20	---	9.89
Bed Up Field	0.200	1	Aug	5.45	5.85	0.14	0.95	0.24	3.63	---	16.02
Plant Carrot Seed	2.000	1	Aug	31.39	38.12	---	0.02	2.42	36.30	30.00	135.83
Planting Irrigation	---	5	Aug-Oct	1.18	0.67	---	---	2.69	31.05	44.21	77.11
Weed Control	---	1	Aug	---	---	---	---	---	---	40.41	40.41
Insect Control	---	1	Sept	---	---	---	---	---	---	63.57	63.57
Weed Control	---	1	Sept	---	---	---	---	---	---	79.47	79.47
Cultivate Field	0.250	1	Sept	6.81	7.31	0.33	3.17	0.30	4.54	---	22.16
Weed Control	---	1	Sept	---	---	---	---	---	---	43.84	43.84
Disease Control	---	1	Oct	---	---	---	---	---	---	30.20	30.20
Cover Male Carrots	0.500	1	Nov	13.63	14.62	0.75	7.31	2.60	32.07	---	68.38
Pest Management	---	8	Dec-Feb	---	---	---	---	0.20	3.00	---	3.00
Uncover Male Carrots	1.000	1	Mar	27.26	29.24	1.50	14.62	5.21	64.15	---	136.77
Fertilize Field	0.250	1	Mar	6.81	7.31	---	---	0.30	4.54	74.50	93.16
Cultivate Field	0.250	1	Apr	6.81	7.31	0.33	3.17	0.30	4.54	---	22.16
Replant Field	---	1	Apr	---	---	---	---	---	---	---	20.00
Thin Carrots	1.000	1	Apr	15.70	19.06	1.90	25.69	1.21	18.15	---	80.50
Pick Rock/Rogue	---	1	Apr	---	---	---	---	6.00	69.00	---	69.00
Weed Control	---	1	Apr	---	---	---	---	---	---	55.12	55.12
Nick Adjustment	---	1	May	---	---	---	---	---	---	---	23.00
	---	2	May-	---	---	---	---	7.00	80.50	---	80.50
Roguing			June								
Disease/Insect Control	---	1	May	---	---	---	---	---	---	72.84	72.84
Irrigation	---	9	May-Aug	2.12	1.20	---	---	4.85	55.88	79.56	138.76
Disease Control	---	1	May	---	---	---	---	---	---	30.20	30.20
Disease Control	---	1	June	---	---	---	---	---	---	94.17	94.17

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Table 2, continued. Carrot seed production under hand line sprinkler irrigation: Estimated resource costs for field operations.

Operation	Perf. Rate	Times Over	Month	Power Unit Cost		Equipment Cost		Labor		Operating Input	Total Cost
	Hours/acre			Variable	Fixed	Variable	Fixed	Hours	\$		
Weed Control	---	1	June	---	---	---	---	---	---	53.69	53.69
Carrot Pollination	---	1	June	---	---	---	---	---	---	237.60	237.60
Insect Control	---	1	July	---	---	---	---	---	---	49.48	49.48
	---	2	July- Aug	---	---	---	---	7.00	80.50	---	80.50
Roguing											
Inspection and Sweeping	---	1	July	---	---	---	---	---	---	---	15.00
Insect Control	---	1	July	---	---	---	---	---	---	21.28	21.28
Insect Control	---	1	July	---	---	---	---	---	---	56.89	56.89
Roll Male Carrots	0.160	1	Aug	4.36	4.68	0.24	2.34	0.19	2.90	---	14.52
Swath Carrot Field	0.300	1	Sept	11.33	30.71	---	---	0.36	5.45	---	47.49
Combine Carrot Field	0.500	1	Sept	39.39	136.47	---	---	0.60	9.07	2.14	187.07
Flame Carrot Field	0.160	1	Sept	4.36	4.68	2.02	5.61	0.19	2.90	8.75	28.32

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	Purchase Price	Annual Use	Useful Life	Fuel Use	Perf. Rate	Variable Cost		Fixed Cost		Total Cost	
		\$	Hours	Years	Gallons/ hour	Hours/ acre	\$/hour	\$/acre	\$/hour	\$/acre	\$/hour	\$/acre
Combine w/ pickup	14 ft	280,000	100	20	7.59	0.500	---	48.46	---	136.47	---	184.93
Swather	12 ft	126,000	120	20	4.04	0.300	---	16.77	---	30.70	---	47.48
ATV	20 hp	6,000	200	10	1.38	0.033	---	0.69	---	0.13	---	0.82
2wd Cab tractor	130 hp	90,000	400	20	6.57	---	44.97	---	21.93	---	66.90	---
2wd tractor	50 hp	40,000	200	20	2.7	---	30.69	---	19.05	---	49.75	---
2wd tractor	80 hp	90,000	300	20	4.3	---	42.25	---	29.24	---	71.49	---
4wd Cab tractor	180 hp	165,000	500	20	9.1	---	54.13	---	32.16	---	86.30	---
Tractor w/ Loader	80 hp	89,000	100	25	1	---	35.65	---	80.93	---	116.58	---
Bedder bar	12 ft	3,500	100	10	---	0.2	---	8.59	---	6.78	---	15.38
Carrot roller	4 row	3,000	20	20	---	0.16	---	5.15	---	5.37	---	10.54
Chisel	10 ft	12,500	100	20	---	0.2	---	10.51	---	6.81	---	17.34
Cultimulcher	12 ft	12,000	100	20	---	0.1	---	5.68	---	3.35	---	9.04
Cultipacker	12 ft	3,000	100	20	---	0.15	---	8.25	---	3.72	---	11.98
Disk	15 ft	26,000	50	20	---	0.1	---	6.5	---	7.25	---	13.76
Drip Tape Installer	4 row	1	1	1	---	0.8	---	33.81	---	24.24	---	58.06
Electric thinner	4 row	3,800	20	10	---	1	---	32.59	---	44.74	---	77.34
Fertilizer sidedress	10 ft	1	100	1	---	0.25	---	10.56	---	7.31	---	17.87
Flail Mower	15 ft	18,000	100	20	---	0.1	---	3.51	---	3.65	---	7.18
Flamer	30 ft	18,000	50	20	---	0.16	---	6.92	---	8.65	---	15.59
Flex harrow	20 ft	10,000	100	25	---	0.08	---	2.87	---	2.24	---	5.12
Land leveler	20 ft	18,000	25	20	---	0.16	---	10.07	---	14.72	---	24.81
Mint planter	16 ft	12,000	20	25	---	0.5	---	37.14	---	41.36	---	78.51
Mint Rake	12 ft	5,000	20	20	---	0.01	---	0.33	---	0.43	---	0.77
Paper roller	10 ft	3,000	20	20	---	0.5	---	16.09	---	16.83	---	32.93
Pasture harrow	12 ft	1,600	100	20	---	0.08	---	3.41	---	2.45	---	5.87
Precision planter	20 ft	9,800	75	20	---	0.2	---	8.02	---	6.35	---	14.37
Roller	20 ft	9,000	200	10	---	0.1	---	4.33	---	3.52	---	7.87
Rolling cultivator	20 ft	6,500	50	20	---	0.25	---	10.88	---	10.47	---	21.36
Row sprayer	12.5 ft	13,000	75	20	---	0.2	---	9.66	---	9.21	---	18.89
Tool bar w/shovels	20 ft	6,500	50	25	---	0.2	---	6.91	---	6.17	---	13.09