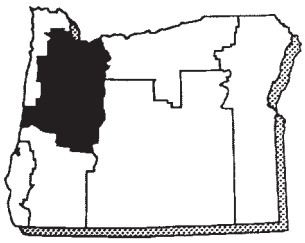
Enterprise Budget

Hop Establishment, Willamette Valley Region



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EM 8433, May 1990

This enterprise budget estimates the typical cost of establishing hops in the Willamette Valley Region of Oregon. It should be used as a guide to estimate your own cost, and is not representative of any particular farm. The major assumptions used in constructing this budget are discussed below. Assistance provided by producers in the area is greatly appreciated.

Hop establishment requires one year, and we assumed no harvest occurs during this establishment year. The costs and returns for producing years may be found in *EM 8434, Hop Production, Willamette Valley Region*.

Land

This budget is based on establishing 275 acres of hops on a 325 acre parcel of land. The land is valued at $3,500 per acre, and this value includes a well and sufficient buried mainline to irrigate the hops. Land costs include interest and property taxes. Interest is calculated as 10% of $3,500, multiplied by (325 ÷ 275) to account for the cost of 50 nonproducing acres that must be allocated over the 275 producing acres. The nonproducing acres include land devoted to buildings, equipment storage, yard space, headlands, and roads.

Labor

Several different types of labor are required to establish hops. General field labor is used for hand operations; experienced operator labor is needed for machinery and equipment operation; and supervisory labor is needed to manage labor crews. In this study, we assumed that general field and operator labor costs $6.00 per hour, including all benefits and payroll expenses. This labor cost is used for all field crew operations, trellis construction, and irrigation.

Machinery operators and supervisors are paid $8.00 per hour, including all benefits and payroll expenses. This labor is used for all machinery and equipment operation.

Capital

Opportunity costs of capital are charged at a rate of 12% for current and intermediate capital provided by the owner. Interest on land is calculated at a 10% rate. These interest costs reflect the fact that capital invested in hops could be invested in alternative activities which would return the 12% rate of interest. Alternatively, the interest cost could represent the cost of borrowing capital.

Irrigation System

Irrigation water is applied using overhead hard-hose reels. Total irrigation system cost is $300 per acre (excluding the well and buried mainline). Depreciation is calculated on a straight-line basis assuming a 10% salvage value and a 20-year life. Interest is charged on the average investment at a rate of 12%.

Machinery, Equipment, and Buildings

Table 1 on page 4 shows the machinery, equipment, and buildings required for hop establishment and production. This machinery complement is sufficient to establish and produce 275 acres of hops. November, 1989 purchase prices are shown, and all costs are calculated assuming the machinery and equipment are halfway through their useful lives.

Miscellaneous

General overhead of $150 per acre is included to pay for office supplies and equipment, general farm labor, utilities not accounted for elsewhere, and hand tools and equipment used on the farm. The ATV's are used throughout the growing season. The service truck is equipped for field repairs of machinery and equipment, and the farm truck is used for hauling chemicals, fertilizer, and other supplies.

Establishment Cost

The total establishment cost of $4,196.86 per acre is amortized over a 20-year life at 12% interest. This assumes that the hop yard, including the plants, has a 20-year useful life. Recent trends indicate that new hop varieties may not have a market for this entire time period, so growers should carefully evaluate the applicability of this assumption to their own operations.

OREGON STATE UNIVERSITY EXTENSION SERVICE

ECONOMIC COSTS and RETURNS
WILLAMETTE VALLEY REGION
Hop Establishment (275 Acres, $/Acre)

VARIABLE COST Description		Labor	Machinery	Materials	Total	Your Cost
LAND PREPARATION						
Subsoil		3.23	6.15	0.00	9.38	
Plow		3.23	6.95	0.00	10.18	
Lime		0.00	0.00	34.00	34.00	
Disc		1.21	2.27	0.00	3.48	
Cultipack		0.97	1.80	0.00	2.77	
Insect control		1.21	1.28	10.00	12.49	
Insecticide	1 acre x 10.00 = 10.00					
Total LAND PREPARATION					72.30	
TRELLIS CONSTRUCTION						
Mark yard		30.00	0.00	15.00	45.00	
Pegs	1 acre x 15.00 = 15.00					
Install poles		50.52	10.87	950.00	1011.39	
Anchor poles	10 pole x 18.00 = 180.00					
Center poles	55 pole x 14.00 = 770.00					
Set anchors		14.40	0.00	124.50	138.90	
Anchors	1 acre x 124.50 = 124.50					
Attach hardware		30.00	0.00	167.00	197.00	
Hardware	1 acre x 167.00 = 167.00					
Pull cable		3.60	0.00	160.00	163.60	
Cable	1 acre x 160.00 = 160.00					
Pull wire		14.40	0.00	180.00	194.40	
Wire	1 acre x 180.00 = 180.00					
Raise & staple		30.00	34.66	2.00	66.66	
Staples	1 acre x 2.00 = 2.00					
Total TRELLIS CONSTRUCTION					1816.95	
CULTURAL						
Plant roots		54.00	0.00	440.00	494.00	
Roots	2200 root x 0.20 = 440.00					
Attach string		34.80	0.00	56.00	90.80	
String & clips	1 acre x 56.00 = 56.00					
Hand fertilize		7.80	0.00	35.00	42.80	
16-16-16	350 lb. x 0.10 = 35.00					
Cultivate (8 times)		25.81	16.51	0.00	42.32	
Hand hoe (2 times)		192.00	0.00	0.00	192.00	
Irrigate		18.00	0.00	20.00	38.00	
Electricity	1 acre x 20.00 = 20.00					
Spray		4.84	7.61	20.00	32.45	
Fungicide	1 acre x 20.00 = 20.00					
Spray (aphids)		1.21	1.28	2.50	4.99	
Insecticide	1 acre x 2.50 = 2.50					
Cultivate (8 times)		25.81	11.30	0.00	37.11	
Spray (aphids & mites)		2.43	2.57	23.00	28.00	
Insecticide	1 acre x 23.00 = 23.00					
Cut strings		2.40	0.00	0.00	2.40	
Plant cover crop		3.23	4.78	10.00	18.01	
Barley seed	100 lb. x 0.10 = 10.00					
Total CULTURAL					1022.88	

ECONOMIC COSTS and RETURNS

WILLAMETTE VALLEY REGION
Hop Establishment (275 Acres, $/Acre) (Continued)

VARIABLE COST Description	Labor	Machinery	Materials	Total	Your Cost
MISCELLANEOUS					
ATV	8.47	3.47	0.00	11.94	
Farm truck	8.31	4.13	0.00	12.44	
General overhead	0.00	0.00	150.00	150.00	
Operating capital interest	0.00	0.00	239.15	239.15	
Pickup, 4wd	22.16	7.05	0.00	29.21	
Pickup, utility	12.47	8.26	0.00	20.73	
Service truck	9.69	2.07	0.00	11.76	
Shed, tanks, etc.	2.54	0.00	14.52	17.06	
Total MISCELLANEOUS				492.29	
Total VARIABLE COST				3404.42	

FIXED COST Description	Unit	Total	Your Cost
CASH Cost			
Insurance	acre	19.33	
Property taxes	acre	70.80	
Total CASH Cost		90.13	
NON-CASH Cost			
Irrigation system - depreciation & interest	acre	33.30	
Machinery & equipment - depreciation & interest	acre	256.01	
Land interest charge	acre	413.00	
Total NON-CASH Cost		702.31	
Total FIXED Cost		792.44	
Total of ALL Cost		4196.86	

Table 1. Machinery, equipment, building, and land investment for a 275 acre hop yard

	Purchase Price	Salvage Value	Number Owned	Total Investment
TRACTORS AND SELF-PROPELLED				
Tractor, 130 hp	50,000	15,000	2	100,000
Tractor, 80 hp w/cab	38,000	11,400	2	76,000
Tractor, 55 hp	24,000	7,200	2	48,000
Tractor, 30 hp	10,000	3,000	2	20,000
Picking machine/dryer	900,000	900,000	1	900,000
Skid-steer loader	20,000	6,000	1	20,000
Top Cutter	20,000	6,000	1	20,000
IMPLEMENTS				
Air-blast sprayer	11,000	1,100	2	22,000
Crow's nest, loader	6,000	600	1	6,000
Crowner	3,000	300	2	6,000
Crowner, post-row	2,000	200	1	2,000
Cultipacker, 12 ft	3,500	350	1	3,500
Cultivator, single row	1,000	100	4	4,000
Deep-digger, 2-row	2,000	200	1	2,000
Double disc, 2-row	1,800	180	1	1,800
Drill, 6 ft	6,000	600	1	6,000
Fertilizer spreader	2,000	200	1	2,000
Field disc, 12 ft	4,000	400	1	4,000
Finish cultivator, 2-row	2,000	200	1	2,000
Hop trailer	3,000	300	8	24,000
Pak-tank, 200 gal	2,000	200	2	4,000
Plow, 3-bottom	5,000	500	1	5,000
Stringing cart	1,800	180	2	3,600
Sub-soiler, 5-shank	3,500	350	1	3,500
Trailer, 16 ft	3,000	300	1	3,000
Vine Spreader	12,000	1,200	1	12,000
VEHICLES				
ATV	4,000	800	2	8,000
Farm truck, 2-ton	30,000	9,000	1	30,000
Pickup, 4wd	18,000	5,400	2	36,000
Pickup, utility	9,000	900	4	36,000
Service truck	22,000	6,600	1	22,000
BUILDINGS AND LAND				
Sheds, tanks, etc.	40,000	4,000	1	40,000
Land (including well & mainline)	3,500		325	1,137,500
TOTAL INVESTMENT				2,609,900

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