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CENTRAL WASHINGTON
HOP COSTS
1964



HOP PRODUCTION COSTS FOR CENTRAL WASHINGTON, 1964

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In cooperation with The Department of Agricultural Economics, W.S.U.

Objectives of the Enterprise Analysis

This hop cost study is one of a series of enterprise cost studies being developed for Washington State farm commodities. Each study gives costs for a one enterprise farm. The studies are designed to establish benchmarks and guidelines to help farmers consider alternatives and improve their efficiency of production.

The figures in this enterprise analysis were developed for a hypothetical 100 acre owner operated hop yard. The operator also used his picking machine and kiln to custom harvest an additional 100 acres of hops for others.

Unit costs developed are for this specific size of operation which used the amounts of resource inputs shown in this study.

A hop producer farming more or less land than 100 acres, or one using a different combination of resources, might develop higher or lower unit costs.

Details of physical amounts and prices are given in the various tables. Other details are given as footnotes following each table; therefore, very little narrative will be used to explain the hop study.

Tables

Table I - This table uses the subheadings developed in Table II to give a brief summary of the costs of producing hops.

Tables II, III and IV develop the data in detail which is summarized in Table I.

Data in Table IV shows the costs of establishing a 100 acre hop yard.

Method of Collecting Cost and Return Information

This series of enterprise studies shows the results of combining economic proportions of land, labor and capital with good management. Figures shown represent the best judgment of a group of leading producers and specialists for the enterprise being studied. Standards given in the enterprise study are guides for farm operators to use in decision making.

Fill in your own figures under each budget figure. How
do your costs and returns compare with these results?

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TABLE I

HOP PRODUCTION COSTS FOR CENTRAL WASHINGTON IN 1964. BASED ON PRODUCING ONE HUNDRED ACRES OF HOPS AND CUSTOM MACHINE PICKING, DRYING, AND BALING AN ADDITIONAL ONE HUNDRED ACRES. YIELD 1,600 POUNDS PER ACRE.

	Costs		
	Total for 100 Acre Enterprise	Per Acre	Per Pound (160,000)
<u>PRODUCTION COSTS</u>			
Cultural Labor Costs	\$ 11,767.00	\$ 117.67	\$.073544
Harvest Costs	14,700.00	147.00	.091875
Material Costs	32,389.00	323.89	.202432
Miscellaneous Costs	<u>44,734.00</u>	<u>447.34</u>	<u>.279589</u>
Total Costs (including custom harvesting)	<u>\$103,590.00</u>	<u>\$1,035.90</u>	<u>\$.647439</u>
My Farm (total cost including custom harvesting)	<u>\$</u>	<u>\$</u>	<u>\$</u>
Less Custom Harvest Income	\$ 24,000.00	\$ 240.00	\$.150000
Costs of Producing Hops	\$ 79,590.00	\$ 795.90	\$.497439
My Farm Costs	<u>\$</u>	<u>\$</u>	<u>\$</u>

TABLE II

HOP PRODUCTION COSTS FOR CENTRAL WASHINGTON IN 1964. BASED ON PRODUCING ONE HUNDRED ACRES OF HOPS AND CUSTOM MACHINE PICKING, DRYING AND BALING AN ADDITIONAL ONE HUNDRED ACRES. YIELD 1,600 POUNDS PER ACRE

Item	Hours Per Acre	Rate	Costs		
			Total for 100 Acre Enterprise	Per Acre	Per Pound (160,000)
<u>CULTURAL LABOR COSTS</u>					
Sub soil	1	\$1.35/hr.	\$ 135	\$ 1.35	\$.000844
Spread manure	3	\$1.35/hr.	405	4.05	.002531
Disc in manure	1	\$1.35/hr.	135	1.35	.000844

TABLE II continued

Item	Hours Per Acre	Rate	Costs		
			Total for 100 Acre Enterprise	Per Acre	Per Pound (160,000)
Repair trellis	5	\$1.25/hr.	\$ 625	\$ 6.25	\$.003906
Plow out and Disc back	1.5	\$1.35/hr.	202	2.02	.001262
Replant	2	\$1.25/hr.	250	2.50	.001562
Mechanically prune	1	\$1.35/hr.	135	1.35	.000844
Clean up after pruning	6	\$1.25/hr.	750	7.50	.004688
Replace pegs	Contract-500	Pegs/\$4.00/A.	400	4.00	.002500
Cutting twine and preparing for stringing	Contract	\$4.25/hr.	425	4.25	.002655
Soaking twine	2	\$1.35/hr.	270	2.70	.001688
Stringing field	9.6	\$1.25/hr.	1200	12.00	.007500
Cultivating	2	\$1.35/hr.	270	2.70	.001688
Training vines (1st)	12	\$1.25/hr.	1500	15.00	.009375
Training vines (2nd)	12	\$1.25/hr.	1500	15.00	.009375
Arching	Contract		350	3.50	.002188
Training vines (3rd)	8	\$1.25/hr.	1000	10.00	.006250
Ditch and Side Dress	1	\$1.35/hr. 3 x over, starting approx. May 1.	135	1.35	.000844
Spray - Insecticides	.7	\$1.35/hr. 2 x over, starting approx. May 1.	95	.95	.000594
Irrigate	4	\$1.35/hr. 4 x over, starting approx. May 1.	540	5.40	.003375

Table II continued

Item	Hours Per Acre	Rate	Costs		
			Total for 100 Acre Enterprise	Per Acre	Per Pound (160,000)
Spray - Zinc		Fly on \$3.00/A. 2 x over	\$ 600	\$ 6.00	\$.003750
Spray - Mildew	.7	1/2 acreage 4 out of 10 year. (2 x over on years sprayed)	95	.95	.000594
Put up heads	4		500	5.00	.003125
Replace twine and pick up down vines	2	\$1.25/hr.	250	2.50	.001562
			<u>\$11,767</u>	<u>\$117.67</u>	<u>\$.073544</u>
My Farm			<u>\$</u>	<u>\$</u>	<u>\$</u>

HARVEST COSTS

Field Labor

12 men - 10 hrs./day @\$1.35 =
\$13.50 x 12 men x 20 days

\$ 3,240 \$ 32.40 \$.020250

Picking Machine Labor

Machine operator \$40/day x 40 days -
Include custom picking and processing
an additional 100 acres

1,600 16.00 .010000

Maintenance man \$30/day x 40 days -

Include custom picking and processing
an additional 100 acres

1,200 12.00 .007500

Supervisor (Field and Machine picking labor)

\$20/day x 40 days

800 8.00 .005000

Picking Machine Labor

6 men 10/hrs./day x \$1.35=\$13.50/man x
6 men x 40 days

3,240 32.40 .020250

Dry Kiln

5 men - @\$13.50/day x 5 men x 40 days

2,700 27.00 .016875

Bale - @\$1.00/bale x 8 bales/A x 200 A

1,600 16.00 .010000

Hauling 800 bales x \$.40

320 3.20 .002000

\$14,700 \$147.00 \$.091875

Table II continued

Item	Costs		
	Total for 100 Acre Enterprise	Per Acre	Per Pound (160,000)
My Farm	<u>\$</u>	<u>\$</u>	<u>\$</u>
<u>MATERIAL COSTS</u>			
Water	\$ 900	\$ 9.00	\$.005625
Fertilizer			
20T manure/A @\$1.00/T = \$20, 500 lb.			
16-20 A @\$25T = \$21.25/A	4,125	41.25	.025781
Twine			
240 lbs./A @\$18.40/cwt. = \$44.16 - twine baling @\$.15/bale x 8 bales \$1.20*			
Replacement twine 20 hills @\$.05 = \$1.00	4,636	46.36	.028975
Replacements			
2 poles/A @\$2.50 + wire \$1.00 = \$6.00			
90 hills @\$.10/hill = \$9.00	1,500	15.00	.009375
Burlap			
(5½ yards/bale) 8 bales* @\$1.60/bale=	1,280	12.80	.008000
Fuel - Gas, oil, grease	2,725	27.25	.017031
Fuel for Kiln - \$1.50/bale x 8 bales/A x 200 A	2,400	24.00	.015000
Repairs			
Buildings See Table III	7,650	76.50	.047813
Equipment See Table III	3,295	32.95	.020594
Electricity	300	3.00	.001875
Sprays			
Insect 3 qts. Kelthane @\$1.86 qt. = \$5.58			
1 qt. Tedion @\$6.44 qt.			
2 lbs. Diazinon @\$2.13/lb. = \$4.26			
\$16.28/A x 2 applications	3,256	32.56	.020350
Mildew			
Zineb 3 lb./A @\$.83/lb. = \$2.50/A x 2 times over = \$5.00 applied on ½ of area, Practice Needed 4 years out of 10 years	100	1.00	.000625
Zinc 3 gal./A @\$.37/gals. 2 x over	<u>222</u>	<u>2.22</u>	<u>.001388</u>

Table II continued

Item	Costs		
	Total for 100 Acre Enterprise	Per Acre	Per Pound (160,000)
Total Material Costs	<u>\$32,389</u>	<u>\$323.89</u>	<u>\$.202432</u>
My Farm	<u>\$</u>	<u>\$</u>	<u>\$</u>
<u>MISCELLANEOUS AND OVERHEAD</u>			
General Expense - office, phone, accounting, etc.	\$ 500	\$ 5.00	\$.003125
B and O Tax 160,000 bales x \$.15 = \$24,000 x 1%	240	2.40	.001500
Social Security \$32,000 x 3 5/8%	1,160	11.60	.007250
Property taxes - land, farm, buildings, and equipment	2,200	22.00	.013750
Insurance - fire, liability	3,500	35.00	.021875
Commission 8 bales/A x \$.20/bale	160	1.60	.001000
Licenses	250	2.50	.001562
Establishing Hop Yard 67,000 ÷ 20 years (See Table IV)	3,350	33.50	.020938
Depreciation (See Table IV)	15,891	158.91	.099319
Interest on Investment \$60,000 operating capital x 4% x 6 mo. = \$1,200 or \$12/A + \$129.23/A (See Table III)	12,923	129.23	.080769
Operator Management \$67,200 + \$24,000 = \$91,200 Gross x 5%	4,560	45.60	.028500
Total Misc. and overhead costs	<u>\$ 44,734</u>	<u>\$ 447.34</u>	<u>\$.279588</u>
My Farm	<u>\$</u>	<u>\$</u>	<u>\$</u>
Total costs (including custom harvest costs)	<u>\$103,590</u>	<u>\$1,035.90</u>	<u>\$.647439</u>
My Farm	<u>\$</u>	<u>\$</u>	<u>\$</u>
Less custom harvest income	<u>-24,000</u>	<u>240.00</u>	<u>.150000</u>
Costs of Producing Hops	<u>\$ 79,590</u>	<u>\$ 795.90</u>	<u>\$.497439</u>
My Farm	<u>\$</u>	<u>\$</u>	<u>\$</u>

TABLE III

INVESTMENT AND ANNUAL OVERHEAD COSTS FOR A ONE HUNDRED ACRE HOP ENTERPRISE FOR THE YAKIMA VALLEY IN 1964. BASED ON CUSTOM MACHINE PICKING, DRYING AND BALING AN ADDITIONAL ONE HUNDRED ACRES OF HOPS.

	Begin. Value	Ending Value	Average Value 1/	Years to Deprec.	Interest at 4%	Deprec.	Repairs
<u>LAND</u>							
100 Acre @\$900/A (In Yard)	\$90,000	\$90,000	\$90,000				
17 Acre @\$900/A (Utility areas)	<u>15,300</u>	<u>15,300</u>	<u>15,300</u>				
Total Land Values	<u>\$105,300</u>		<u>\$105,300</u>		<u>\$4,212</u>		
My Farm	<u>\$</u>		<u>\$</u>		<u>\$</u>		
<u>BUILDINGS AND IMPROVEMENTS</u>							
Hop picking, building and machinery to pick 200 acres	\$ 73,000	\$36,500 ^{2/}	54,750	20		\$3,650	\$5,000
Hop kiln and cooling room and machinery to pick 200 acres	80,000	40,000 ^{2/}	60,000.	20		4,000	1,000
Storage warehouse (for 100 acres)	5,000	2,500 ^{2/}	3,750	20		250	100
Farm Shop	4,000	2,000 ^{2/}	3,000	20		200	100
Domestic pump and water equipment (farm share)	2,000	1,500 ^{2/}	1,750	20		50	50
Tenant houses (16 rms.)	10,000	5,000 ^{2/}	7,500	15		500	600
Tenant residence	5,000	2,500 ^{2/}	3,750	20		250	200
Central wash and bath house	2,000	1,000 ^{2/}	1,500	20		100	300
Irrigation system	<u>12,500</u>	<u>8,500^{2/}</u>	<u>10,500</u>	<u>30</u>		<u>400</u>	<u>300</u>
Total	<u>\$193,500</u>		<u>\$146,500</u>		<u>\$5,860</u>	<u>\$9,400</u>	<u>\$7,650</u>
My Farm	<u>\$</u>		<u>\$</u>		<u>\$</u>	<u>\$</u>	<u>\$</u>

TABLE III continued

EQUIPMENT	Begin. Value	Ending Value	Average Value 1/	Years	Interest at 4%	Deprec.	Repairs
				to Deprec.			
Tractors - 35 diesel	\$3,500	\$1,800	\$2,650	5		\$340	\$200
Tractors - 35 diesel	3,500	1,800	2,650	5		340	200
Tractors - Gas	1,800	450	1,125	5		270	200
Sprayer - Power take-off 300 gallons	3,800	200	2,000	10		360	100
Manure spreader - an old truck also used in harvest	1,200	---	600	10		120	200
Weed sprayer - power take-off	500	100	300	10		40	50
Weed burner - tank rented	70	---	35	7		10	---
Disc - 2-5 foot	900	200	550	5		140	50
Cultivators	250	100	175	10		15	50
Ditcher	200	100	150	10		10	50
Mechanical Pruner - power take-off	500	50	275	10		45	175
Subsoiler	100	10 ^{2/}	55	15		9	25
Pruning plows	175	15	95	10		16	25
Post Hole Digger	450	150	300	10		30	10
Manure Loader	1,500	300	900	10		120	100
Hydraulic Pusher	875	75	475	10		80	50
Twining Racks	280	50	165	10		23	---
Tractor Blade	180	100	140	10		8	---
V-Blade	350	100	225	10		25	---
Fertilizer Spreader - Dry	500	50	275	10		45	50
Shop Equipment	4,000	3,000	3,500	10		100	400
Field hand tools - knives, shovels, files, etc.	400	200	300	5		40	200

TABLE III continued .

	Begin. Value	Ending Value	Average Value 1/	Years to Deprec.	Interest at 4%	Deprec.	Repairs
Trucks - 5½ ton @\$500 each	\$2,500	\$1,000	\$1,750	3		\$500	\$1,000
Pickup	2,000	500	1,250	5		300	75
Pickup or jeep - for irrigator	750	250	500	5		100	75
Farm Wagon	350	50	200	10		30	10
Fuel Tanks	<u>400</u>	<u>200^{2/}</u>	<u>300</u>	20		<u>20</u>	
Total Equipment Values	<u>\$31,030</u>		<u>\$20,940</u>		<u>\$ 838</u>	<u>\$3,136</u>	<u>\$3,295</u>
My Farm	<u>\$</u>		<u>\$</u>		<u>\$</u>	<u>\$</u>	<u>\$</u>
<u>TRELLIS</u> (See Table IV)	<u>\$67,100</u>	\$33,550	<u>\$50,325</u>	20	<u>\$2,013</u>	<u>\$3,355</u>	<u>\$ 625</u>
My Farm	<u>\$</u>		<u>\$</u>		<u>\$</u>	<u>\$</u>	<u>\$</u>
Total Investments and Annual Costs of Land, Buildings, Equipment, Trellis	<u>\$396,930</u>		<u>\$323,065</u>		<u>\$12,923</u>	<u>\$15,891</u>	<u>\$11,570</u>
My Farm	<u>\$</u>		<u>\$</u>		<u>\$</u>	<u>\$</u>	<u>\$</u>

1/ Average value was calculated by using the following formula:

$$\frac{\text{Original Cost (\$)} + \text{Trade-in Value (\$)}}{2} = \text{Average Value}$$

2/ Value after ten years depreciation

TABLE IV
 COSTS OF ESTABLISHING A ONE HUNDRED ACRE HOP YARD

Item		Per Acre Cost
Poles	60 cedar poles @\$2.25/pole + \$.25/pole for treating = 60 x \$2.50	\$150.00
Wire	500 pounds No. 0 + 630 pounds No. 6 = 1130 lbs./A x 11.5¢/lb. =	130.00
Staples	3 lbs./A @\$.20/lb. =	.60
Pegs	1000/A @\$8.50/thousand =	8.50
Roots	5000/A @\$25.00/thousand =	125.00
Concrete Anchors	18/A @\$4.00/A =	72.00
Preparing Land	@\$10/A =	10.00
Labor of Setting Posts and Stringing Wire =	@\$140/A =	<u>175.00</u>
Total Establishment Costs		<u>\$671.10</u>
My Farm		<u>\$</u>



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