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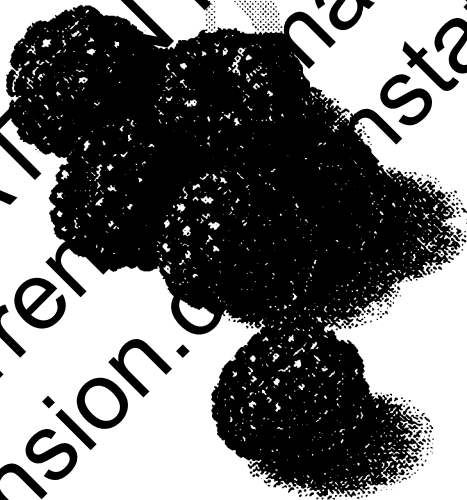
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# Red Raspberry Economics

The Costs of Establishing and Producing  
Red Raspberries in the Willamette Valley

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Tim Cross, Brenda Turner,  
Bernadine Strik, and Diane Kaffman  
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Red raspberry economics

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# Red Raspberry Economics: The Costs of Establishing and Producing Red Raspberries in the Willamette Valley

Tim Cross, Brenda Turner, Bernadine Strik, and Diane Kaufman<sup>1</sup>

## INTRODUCTION

A steady increase of red raspberry acreage in Oregon during the 1980s was accompanied by fluctuating prices and yields per acre. (See Figures 1 and 2 on the following page.) Supply and demand factors influenced price. Yields per acre were affected by adverse weather conditions and fruit rot, especially in 1985, 1986, and 1991. In 1991, the estimated acreage of red raspberries in Oregon was 4,000 acres. Meeker is the predominant commercial cultivar due to its excellent processing qualities. An estimated 98 percent of the raspberries harvested in Oregon were sold for processing and the remaining 2 percent were sold as fresh market berries. The total estimated value of red raspberry sales was \$6.9 million.

Harvested acreage of red raspberries has doubled in the last 10 years, as shown in Figure 1. Strong demand for berries used for processing and cost-effective mechanical harvesting technologies contributed to this growth. During this same period, total production of red raspberries ranged from 11 million pounds in 1980 to 25 million pounds in 1989. Large fluctuations in production resulted in equally large changes in price.

Figure 2 charts red raspberry production and prices since 1980, and shows that prices ranged from a low of about \$0.29 per lb in 1980 to a high price of \$0.77 per lb in 1986.

Red raspberries are an expensive crop to produce. Profit and loss depend greatly on yield and price per pound. A typical field matures 2 years after planting, and averages 15 years in full production. An average mature field is harvested 15 times each year and yields a total of 3 tons per acre.

This study estimates the costs of establishing and producing red raspberries in the Willamette Valley of Oregon. Enterprise budgets are constructed for each year in the establishment process, and a typical production year budget is also presented.

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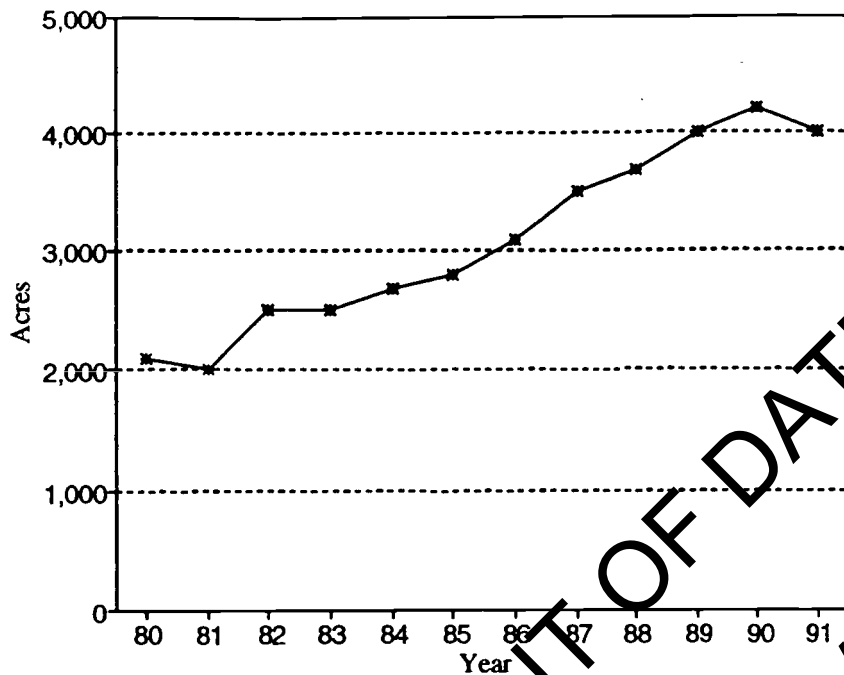


Figure 1. Harvested acreage of Red Raspberries in Oregon, 1980-1991.

Source: Miles, Stanley D. 1991 Oregon County and State Agricultural Estimates. SR790, Revised January 1992 (and earlier years).

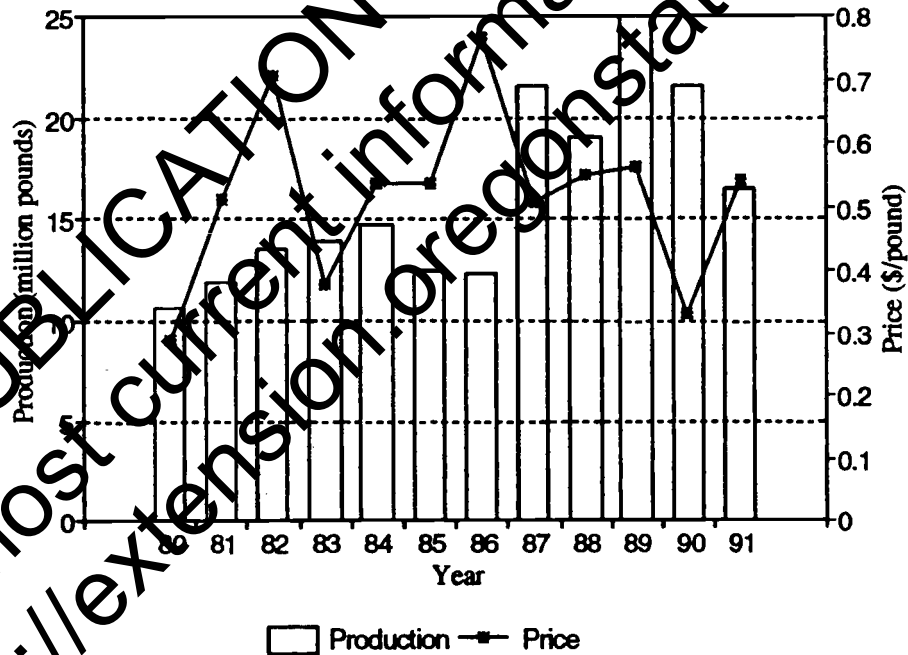


Figure 2. Production and Average Farmgate Price for Red Raspberries in Oregon, 1980-1991.

Source: Miles, Stanley D. 1991 Oregon County and State Agricultural Estimates. SR790, Revised January 1992 (and earlier years).

## ASSUMPTIONS

Many individuals were involved in this study, including growers, university researchers, and Extension staff. Throughout the study, a number of broad assumptions were made to provide a common basis for analysis.

- 1) A typical red raspberry producer in the North Willamette Valley raises 20 acres of raspberries on a 300-acre farm. The previous crop was strawberries. A land lease charge is included to reflect the costs of owning or leasing land.
- 2) A machine shed and all farm machinery and equipment are owned by the operator, with the exception of a machine harvester. An over-the-row harvester is leased for \$14,000 per year.
- 3) Machinery and equipment depreciation and repair costs are based on agricultural engineering estimates.
- 4) The soil is uniform throughout the 20-acre field.
- 5) Owner labor is valued at \$10 per hour and is used for cultivation, chemical applications, irrigation, planting, training canes, rodent control, and hauling during harvest.
- 6) Hired labor is valued at \$7 per hour, which includes all costs associated with withholding taxes, record keeping, and payroll. All hired labor is paid on an hourly basis with the exception of labor used for pruning and tying canes. These two operations are paid at a piece rate.
- 7) The irrigation system consists of a \$10,000 moveable big reel gun. It has a zero salvage value and is depreciated using the straight-line method over 17 years. This study assumes the water is pumped from a well, and electricity for pumping costs \$2 per acre-inch. Irrigation is not always required, however, and irrigation needs will vary from place to place and year to year. Ownership costs for the pump and mainline are included in the land lease charges.
- 8) The trellis has a total value of \$73,600, a zero salvage value and is depreciated using the straight line method over a 17-year life.
- 9) Fungicides, fertilizers, herbicides, and insecticides are broadcast banded. The chemical costs and rates of application are based on the typical chemicals recommended for use by the growers providing data for this analysis. Price and application rates vary depending on need and individual preference. Follow the directions and precautions on the label of the specific products.
- 10) The interest rate is 10 percent for operating and long-term capital provided by the owner.
- 11) Inflation and income taxes are not taken into account in these budgets.

## ENTERPRISE BUDGETS

The following enterprise budgets estimate the gross revenue, variable costs, and fixed costs incurred in the establishment and production of red raspberries in the Northern Willamette Valley. Operations listed provide a guideline for new and potential producers and a comparison or budgeting tool for established growers. Each budget represents one calendar year. Land preparation

constitutes all operations in year 0. Year 1 is the establishment or planting year. In year 2, an immature crop is harvested followed by full production of a mature crop in years 3 through 17. The budgets are shown in the appendix, and each is discussed briefly below. All costs and returns are estimated on a per-acre basis.

### FIELD PREPARATION: YEAR 0

In year 0, a soil test for nematodes and base metals determines the quantity of lime and nutrients to be applied. A custom lime application, several tilling operations, and custom tarp fumigation for insects, disease and weed seeds adequately prepare the soil for planting in year 1. Costs for year 0 are shown in Appendix Table 1.

The total variable cost in year 0 is \$1,406. This includes repair and maintenance of machinery and equipment, custom operations, and labor. Fixed costs include land rent of \$150 per acre, depreciation, insurance, and interest on capital. Total fixed cost is \$258 with resulting total cost \$1,664.

### ESTABLISHMENT: YEAR 1

The enterprise budget for Year 1 is shown in Appendix Table 2. In the spring of year 1 rototilling prepares the soil for planting. Meeker is planted due to its excellent processing characteristics. The raspberry plants are spaced 2.5 ft by 10 ft for a total of 1,750 hills per acre. The total plant cost is \$440 per acre (\$0.25 each x 1,750) and the labor cost for a five-person planting crew is \$38 per acre. Fertilizer is applied twice and an herbicide for weed control is applied once. All spray and fertilizer applications are broadcast banded.

with clips complete the trellis. The cost of constructing the trellis is included as an operational cost, and the materials are depreciated over a 17-year life.

The moveable big gun reel is used to apply six sets of irrigation at 1 inch per set during the dry months. Also in the spring, a fungicide for root rot is applied. Labor is hired twice to train the canes onto the wires as the plants grow. In the fall, labor is hired to tie the canes at a piece rate of \$.09 per hill. Although a fall/winter fungicide application for disease control is not listed in this budget, some growers apply it.

The trellis consists of 150 steel posts and 16 wooden end posts with anchors. A single 12-gauge top wire and 2 14-gauge side wires



The total variable cost in year 1 is \$1,584 per acre and the total fixed cost is \$559. In addition to the fixed costs mentioned in year 0 fixed costs include interest on year 0 establishment cost at 10 percent and interest

and depreciation on the irrigation system. The total cost in year 1 is \$2,143, and the cumulative total establishment costs are \$3,837.

### ESTABLISHMENT: YEAR 2

The pre-harvest operations in year 2 begins with two fungicide applications for disease control, a weed and a root rot spray, and two fertilizer applications (see Appendix Table 3). An application for primocane suppression is necessary. Rodent control begins in year 2 and requires 1 hour of owner labor per acre. Two bee hives per acre are rented at \$10 each in mid to late spring and the crop is irrigated three times prior to harvest. Pheromone traps are placed throughout the field to monitor the insect population.

Before and during harvest insecticides and fruit rot sprays are applied. The order and time of each application depends on bloom time and weather conditions. The chemicals used are rotated to reduce risk of build-up to resistance and increase the spectrum of coverage. An immature crop is picked 10 times in year 2. Machine harvest is preferred over hand picking due to lower costs. The harvest costs of \$376 per acre include the labor costs of a five-person crew, and machinery and equipment maintenance. Hauling for \$6.50 per acre represents labor and truck costs. A total of 4,000 lbs are harvested and the price is \$.50 per lb. Thus the total gross revenue in year 2 is \$2,000 per acre.

Following harvest, labor prunes and ties the canes at \$0.23 per hill. Pruned canes are left on the ground between rows and flailed. Irrigation continues after harvest, and a final application for root rot is applied in late summer or fall. Also, an annual cover crop is seeded in late summer, at a rate of 80 lbs per acre, and a cost of \$0.20 per lb. Such miscellaneous items as gloves and small hand tools total \$75 per acre.

Total cost in year 2 is \$3,085. Variable costs are \$1,752 and fixed costs are \$1,333. The net return after accounting for the small crop harvested is -\$1,085. Cumulative establishment cost at the end of year 2 is \$4,912. This establishment cost must be allocated over the 15-year productive life of the red raspberry planting. An annual payment of \$647.11 will just repay this amount plus interest in 15 years. This amortized establishment is included as a noncash fixed cost in the production year budget.

## PRODUCTION YEAR

The final budget shown in Appendix Table 4 represents the full production years. In 2 out of every 3 production years, an insecticide for crown borer control is applied in the spring. Every other full production year, a single tissue analysis is performed to check nutrient levels. The analysis costs \$32.50. These operations are included in this budget on an annualized basis. Weed, pest, and disease controls are the same as year 2.

The crop is harvested 15 times and produces a total yield of 6,000 lbs per acre. The price remains constant at \$0.50 per lb for a total gross income of \$3,000 per acre. The total variable harvest cost is \$576, including the hauling cost of \$13. Total variable cost is \$2,032. Fixed cost, including the amortized establishment cost, is \$1,785. The return over variable cost is \$968 per acre, while the return over total cost is estimated to be -\$817 per acre.

Sensitivity analysis was used to examine the effects of varying price and yield on net projected returns over total cost. The results of this analysis are shown in Appendix Table

5. This table shows that net projected returns are negative for yields of 2,000 to 4,000 lbs per acre if prices are \$.80 per lb or less. Yields of 6,000 to 8,000 lbs per acre generally result in positive returns at prices above \$0.50 per lb. Estimated returns are positive for prices above \$0.40 per lb at yields of 10,000 lbs per acre.

Note in Figure 2 that prices and production usually move in opposite directions. In years of high production, prices are low. Low production years result in higher prices. Over the last 12 years, nominal average prices have exceeded \$0.70 per lb twice, and fallen below \$0.40 per lb three times. During the other seven years of this time period, prices ranged between \$0.40 and \$0.70 per lb. Based on Table 5 and assuming that production costs have remained constant, we conclude that producers realizing yields of greater than 6,000 lbs per acre have produced at long term breakeven or profitable levels. Yields of less than 6,000 lbs per acre have likely resulted in economic losses.

## SUMMARY AND CONCLUSIONS

Red raspberry acreage in Oregon has doubled over the last 12 years. Yields have fluctuated due to weather and growing conditions. Prices have likewise fluctuated due to yield and market variations. Almost all red raspberry production is used in processed products.

The establishment costs of red raspberries are as follows:

<u>Year</u>	<u>Total Cost</u>	<u>Cumulative Cost</u>
0	1,694	1,694
1	2,143	3,837
2	1,085	4,922

After making a number of assumptions, this study estimated the total economic establishment cost of red raspberries to be \$4,922 per acre. This is calculated by the sum of the total cost of establishment years 0, 1, and 2. Amortizing this cost over a 15-year productive life results in an annual charge of \$647 per acre for repayment of establishment costs. Once the raspberries reach full production, returns over total cost (including the amortized establishment cost) were estimated to be \$-817 per acre for the base analysis.

Returns increase at higher prices and yields. Over the long run, this study estimates that at yields of 6,000 lbs per acre, prices of \$0.64 per lb or greater are required to

breakeven or earn profits. Prices or yields below these levels suggest periods of economics losses, during which owner-provided labor and capital will likely not receive the rates budgeted in the study (\$10 per hour and 10 percent interest, respectively).

Producers who wish to evaluate their own costs and returns should use this study as a guide. Any individual farm's red raspberry production costs and returns will differ from the results estimated and discussed in this report. Use these budgets as a starting point and modify them according to experience and future outlook.

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Appendix A

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Table 1. Red Raspberry Establishment Year 0 Economic Costs, \$/acre.

<u>VARIABLE COST</u>	<u>Description</u>	<u>Labor</u>	<u>Machinery</u>	<u>Materials</u>	<u>Total</u>
<b>LAND PREPARATION</b>					
	Soil Test	0.00	0.00	1.95	1.95
	Subsoil	24.20	16.10	0.00	40.30
	Plow	12.10	9.92	0.00	22.02
	Lime (Custom)	0.00	0.00	100.00	100.00
	Disc & Harrow	24.20	16.71	0.00	40.91
	Rototill (2x)	48.40	33.37	0.00	81.77
	Tarp Fumigate (Custom)	0.00	0.00	1000.00	1000.00
	Remove Tarp	10.00	0.00	0.00	10.00
	Rototill	24.20	6.69	0.00	40.89
Total LAND PREPARATION					1637.84
	Operating Capital Interest	0.00	0.00	68.62	68.62
Total VARIABLE COST					1406.46
<b>FIXED COST</b>					
<u>Description</u>			<u>Unit</u>		<u>Total</u>
<b>CASH Cost</b>					
	Machinery & Equipment Insurance		acre		8.87
	Land Lease		acre		150.00
Total CASH COST					158.87
<b>NONCASH Cost</b>					
	Machinery & Equipment Depreciation & Interest		acre		129.10
Total NONCASH COST					129.10
Total FIXED COST					287.97
Total of ALL Cost					1694.43

Table 2. Red Raspberry Establishment Year 1 Economic Costs, \$/acre.

<u>VARIABLE COST</u>	<u>Description</u>	<u>Labor</u>	<u>Machinery</u>	<u>Materials</u>	<u>Total</u>
<b>PRE-PLANT</b>					
Rototill		24.20	16.69	0.00	40.89
Plant		38.00	0.00	440.00	478.00
Rasp. Plants	1,750 plants x 0.25 = 440.00				
Fertilize (2x)		9.68	6.60	100.00	116.28
Fertilizer	0.4 tons x 250.00 = 100.00				
Weed Control		4.84	4.21	0.00	69.05
Herbicide	1.0 acre x 60.00 = 60.00				
<b>Total PRE-PLANT</b>					<b>704.22</b>
<b>POST-PLANT</b>					
Build Trellis		38.20	15.63	0.00	53.83
Wire Trellis		78.34	14.37	0.00	92.71
Anchor Trellis		68.00	0.00	0.00	68.00
Rototill (2x)		48.40	33.37	0.00	81.77
Irrigate (6x)		60.00	0.00	12.00	72.00
Electricity	6.0 inch x 2.00 = 12.00				
Spray		48	1.21	7.5	96.55
Fungicide	1.8 acre x 140.00 = 87.50				
Train Canes		136.00	0.00	0.00	136.00
Tie Canes		137.50	0.00	60.00	217.50
Twine	1.0 acre x 60.00 = 60.00				
<b>Total POST-PLANT</b>					<b>818.36</b>
Operating Capital Interest		0.00	0.00	61.87	61.87
<b>Total VARIABLE COST</b>					<b>1584.45</b>
<b>FIXED COST</b>					
<u>Description</u>			<u>Unit</u>		<u>Total</u>
<b>CASH Cost</b>					
Machinery & Equipment Insurance			acre		9.86
Land Lease			acre		150.00
<b>Total CASH Cost</b>					<b>159.86</b>
<b>NONCASH Cost</b>					
Interest on Investment			acre		169.44
Irrigation System-Depreciation & Interest			acre		29.41
Canes-Depreciation & Interest			acre		57.64
Machinery & Equipment-Depreciation & Interest			acre		142.26
<b>Total NONCASH Cost</b>					<b>398.75</b>
<b>Total FIXED Cost</b>					<b>558.61</b>
<b>Total of ALL Cost</b>					<b>2143.06</b>



Table 3. Red Raspberry Establishment Year 2 Economic Costs and Returns, \$/acre.

<u>GROSS INCOME</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	<u>Total</u>
Red Raspberries		4000	lbs	0.50	<u>2000.00</u>
Total GROSS Income					2000.00
<u>VARIABLE COST</u>	<u>Description</u>	<u>Labor</u>	<u>Machinery</u>	<u>Materials</u>	<u>Total</u>
PRE HARVEST					
Spray		4.84	4.21	2.00	30.05
Fungicide	1.0 acre x 21.00 = 21.00				
Spray		4.84	4.21	95.00	104.05
Herbicide	1.0 acre x 7.50 = 7.50				
Fungicide	1.0 acre x 140.00 = 87.50				
Fertilize (2x)		9.68	6.66	100.00	116.34
Fertilizer	0.40 ton x 250.00 = 100.00				
Spray		4.84	4.21	10.00	19.05
Fungicide	1.0 acre x 10.00 = 10.00				
Spray		4.84	4.21	6.38	15.42
Cane Suppression	1.0 acre x 64.00 = 5.37				
Spreader/Sticker	1.0 acre x 1.00 = 1.00				
Disc & Harrow		24.20	16.71	0.00	40.91
Rodent Control		10.00	0.00	0.00	10.00
Bee Rental		0.00	0.00	20.00	20.00
Bees	2.0 hives x 10.00 = 20.00				
Irrigate (3x)		30.00	0.00	6.00	36.00
Electricity	3.0 inch x 2.00 = 6.00				
Scouting		1.00	0.00	1.20	6.20
Pheromone Traps	1.0 acre x 1.20 = 1.20				
Spray		4.84	4.21	6.50	15.55
Insecticide	1.0 acre x 22.00 = 22.00				
Spray		4.84	4.21	22.00	31.05
Rot Control	1.0 acre x 22.00 = 22.00				
Spray		4.84	4.21	28.50	37.55
Insecticide	1.0 acre x 6.50 = 6.50				
Rot Control	1.0 acre x 22.00 = 22.00				
Spray		4.84	4.21	18.00	27.05
Rot Control	1.0 acre x 18.00 = 18.00				
Spray		4.84	4.21	37.00	46.05
Insecticide	1.0 acre x 15.00 = 15.00				
Rot Control	1.0 acre x 22.00 = 22.00				
Disc & Harrow		24.20	16.71	0.00	<u>40.91</u>
Total PRE HARVEST					596.10
HARVEST					
Picking		357.00	18.92	0.00	375.92
Hauling		4.40	3.98	0.00	<u>8.38</u>
Total HARVEST					384.30

Table 3. Red Raspberry Establishment Year 2 Economic Costs and Returns, \$/acre (cont'd).

<u>VARIABLE COST</u>	<u>Description</u>	<u>Labor</u>	<u>Machinery</u>	<u>Materials</u>	<u>Total</u>
<b>POST HARVEST</b>					
Subsoil		12.10	8.05	0.00	20.15
Prune & Tie		402.50	0.00	40.00	442.50
Twine	1.0 acre x 40.00 = 40.00				
Flail Mow		12.10	10.21	0.00	22.31
Irrigate (4x)		40.00	0.00	8.00	48.00
Electricity	4.0 inch x 2.00 = 8.00				
Spray		4.84	4.21	87.50	96.55
Fungicide	1 acre x 140.00 = 87.50				
Plant Cover Crop		12.10	6.92	12.00	31.02
Seed	60.0 lb x 0.20 = 12.00				
Miscellaneous		0.00	0.00	75.00	75.00
<b>Total POST HARVEST</b>					<b>735.52</b>
Operating Capital Interest		0.00	0.00	36.08	36.08
<b>Total VARIABLE COST</b>					<b>1752.00</b>
<b>GROSS INCOME minus VARIABLE COST</b>					<b>248.00</b>
<b>FIXED COST Description</b>					
		<u>Unit</u>			<u>Total</u>
<b>CASH Cost</b>					
Machinery & Equipment Insurance			acre		11.78
Picker Lease			acre		700.00
Land Lease			acre		150.00
<b>Total CASH Cost</b>					<b>861.78</b>
<b>NONCASH Cost</b>					
Interest on Investment			acre		214.31
Irrigation System-Depreciation & Interest			acre		29.41
Trellis-Depreciation & Interest			acre		57.64
Machinery & Equipment-Depreciation & Interest			acre		169.72
<b>Total NONCASH Cost</b>					<b>471.08</b>
<b>Total FIXED Cost</b>					<b>1332.86</b>
<b>Total of ALL Cost</b>					<b>3084.86</b>
<b>NET PROJECTED RETURNS</b>					<b>-1084.86</b>

Table 4. Red Raspberry Production Year Economic Costs and Returns, \$/acre.

<u>GROSS INCOME</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	<u>Total</u>
Red Raspberries		6000	lbs	0.50	<u>3000.00</u>
Total GROSS Income					3000.00
<u>VARIABLE COST</u>	<u>Description</u>	<u>Labor</u>	<u>Machinery</u>	<u>Material</u>	<u>Total</u>
PRE HARVEST					
Spray		4.84	4.21	21.00	30.05
Fungicide	1.0 acre x 21.00 = 21.00				
Spray		4.84	4.21	95.00	104.05
Herbicide	1.0 acre x 7.50 = 7.50				
Rot Control	1.0 acre x 140.00 = 87.50				
Spray		4.84	4.21	10.00	19.05
Insecticide	2.0 lb x 5.00 = 10.00				
Fertilize (2x)		9.68	6.60	100.00	116.28
Fertilizer	0.4 tons x 250.00 = 100.00				
Spray		4.84	4.21	10.00	19.04
Fungicide	1.0 acre x 10.00 = 10.00				
Spray		4.84	4.21	6.98	15.42
Cane Suppression	1.0 acre x 64.00 = 5.37				
Spreader/Sticker	1.0 acre x 1.00 = 1.00				
Disc & Harrow		24.20	16.71	0.00	40.91
Rodent Control		10.00	0.00	0.00	10.00
Bee Rental		0.00	0.00	20.00	20.00
Bees	1.0 acre x 20.00 = 20.00				
Irrigate (3x)		30.00	10.00	6.00	36.00
Electricity	3.0 inch x 2.00 = 6.00				
IPM Scouting		6.00	0.00	1.20	6.20
Pheromone Traps	1.0 acre x 1.20 = 1.20				
Spray		4.84	4.21	6.50	15.55
Insecticide	1.0 acre x 6.50 = 6.50				
Spray		4.84	4.21	22.00	31.05
Rot Control	1.0 acre x 22.00 = 22.00				
Spray		4.84	4.21	28.50	37.55
Insecticide	1.0 acre x 18.00 = 18.00				
Rot Control	1.0 acre x 22.00 = 22.00				
Spray		4.84	4.21	18.00	27.05
Rot Control	1.0 acre x 18.00 = 18.00				
Spray		4.84	4.21	37.00	46.05
Insecticide	1.0 acre x 15.00 = 15.00				
Rot Control	1.0 acre x 22.00 = 22.00				
Disc & Harrow		24.20	16.71	0.00	<u>40.91</u>
Total PRE HARVEST					615.14
HARVEST					
Picking		535.50	28.39	0.00	563.89
Hauling		6.60	5.96	0.00	<u>12.56</u>
Total HARVEST					576.45

Table 4. Red Raspberry Production Year Economic Costs and Returns, \$/acre (cont'd).

<u>VARIABLE COST</u>	<u>Description</u>	<u>Labor</u>	<u>Machinery</u>	<u>Materials</u>	<u>Total</u>
<b>POST HARVEST</b>					
Tissue Analysis		0.00	0.00	1.62	1.62
Subsoil		12.10	8.05	0.00	20.15
Prune & Tie		402.50	0.00	42.50	442.50
Twine	1.0 acre x 40.00 = 40.00				
Flail Mow		12.10	10.21	0.00	22.31
Irrigate (4x)		40.00	0.00	0.00	48.00
Electricity	4.0 inch x 2.00 = 8.00				
Spray		4.84	4.21	10.00	19.05
Fungicide	1.0 acre x 10.00 = 10.00				
Spray		4.84	4.21	87.50	96.55
Fungicide	1 acre x 140.00 = 87.50				
Plant Cover Crop		12.10	6.9	12.00	31.00
Seed	60.0 lb x 0.20 = 12.00				
Miscellaneous		0.00	0.0	75.00	75.00
<b>Total POST HARVEST</b>					<b>756.20</b>
Operating Capital Interest		0.00	0.00	81.11	81.11
<b>Total VARIABLE COST</b>					<b>2031.90</b>
<b>GROSS INCOME minus VARIABLE COST</b>					<b>968.10</b>
<b>FIXED COST Description</b>					<b>Total</b>
<b>CASH Cost</b>					
Machinery & Equipment Insurance			acre		13.12
Picker Lease			acre		700.00
Land Lease			acre		150.00
<b>Total CASH Cost</b>					<b>863.12</b>
<b>NONCASH Cost</b>					
Amortized Establishment Cost			acre		647.11
Irrigation System-Depreciation & Interest			acre		29.41
Trellis-Depreciation & Interest			acre		57.64
Machinery & Equipment-Depreciation & Interest			acre		188.13
<b>Total NON CASH Cost</b>					<b>922.29</b>
<b>Total FIXED Cost</b>					<b>1785.41</b>
<b>Total of ALL Cost</b>					<b>3817.31</b>
<b>NET PROJECTED RETURNS</b>					<b>-817.31</b>
Break-even Price, Total Variable Cost					\$ 0.34 per lb.
Break-even Price, Total Cost					\$ 0.64 per lb.

Table 5. Net Projected Returns for Alternative Prices and Yields for a Mature Red Raspberry Crop (\$/acre).

<u>Price (\$/lb.)</u>	<u>Yield (lbs.)</u>				
	<u>2,000</u>	<u>4,000</u>	<u>6,000</u>	<u>8,000</u>	<u>10,000</u>
0.30	-2,833	-2,425	-2,017	-1,609	-1,202
0.40	-2,633	-2,025	-1,417	-809	-202
0.50	-2,433	-1,625	-817	-9	798
0.60	-2,233	-1,225	-217	798	1,798
0.70	-2,033	-825	383	1,591	2,798
0.80	-1,833	-425	983	2,391	3,798

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