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BLUEBERRY ECONOMICS: THE COSTS OF ESTABLISHING AND PRODUCING ORGANIC MARKET, HAND-AND MACHINE HARVESTED BLUEBERRIES IN THE WILLAMETTE VALLEY

Clark Seavert, Scott Lukas, and Patrick Jones





Blueberry Economics: The Costs of Establishing and Producing Organic Hand- and Machine-Harvested Blueberries in the Willamette Valley

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Introduction

The production of certified organic blueberries in Oregon increased over 600% in 10 years, from 392 acres harvested in 2011 to 2.987 acres harvested in 2021. The organic production volume and the related prices per pound over that same period are shown in Figure 1. Production volume increased 370% over a 10-year period while price per pound fluctuated between \$1.15 and \$3.10, depending on the year and market (fresh or processed). The highest prices were seen in 2014, while in more recent years price per pound for organic blueberries dropped below \$2.00 per pound. In Oregon, organic production volume and sales data were not differentiated by market until 2016. In 2021, the most recent year with data reported at the time of this publication, organic blueberries were 63% processed. It is essential to understand that returns for blueberries are variable from year to year and to plan for this when developing your own budget for a farm.

This study estimates the typical returns and costs to establish to a well-managed 20-acre

blueberry planting in the Willamette Valley using two harvesting methods: hand and machine harvest. Blueberries are an expensive crop to produce. Profit and loss depend greatly on yield, price received by the grower, and labor costs. Of total cash costs, labor is 59 percent to hand harvest blueberries and 29 percent to machine harvest. The yield for a mature blueberry field will vary depending on the cultivar or variety grown, soil type, and management practices. The number of years to reach full production may also vary by farm, with poorer performing fields taking longer than the 7 years in this analysis. This cost of establishment and production study provides growers a tool for financial management and decision-making. This study is a product of cooperative input from selected growers, field representatives, researchers, and farm suppliers. Careful budget planning is key to managing these fluctuations and ensuring the financial stability of your business. Therefore, growers are encouraged to substitute their costs to get an accurate accounting of their farm.

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Figure 1. Volume and pricing of organic blueberry harvested in Oregon, 2008-2021.

Source: USDA NASS agricultural census.

Note: Until 2016, organic blueberry production and value data were not differentiated by market. Data are not collected every year for organic blueberry production, and the volumes are likely underestimating organic production in Oregon. 2021 was the most recent year with data reported at the time of this 2025 publication.

Assumptions

Many individuals were involved in this study, including growers, university researchers, and Extension faculty. Based on the insights and suggestions from these industry stakeholders, the following assumptions were made, which provided a basis for this analysis.

- 1) A typical producer of blueberries in the Willamette Valley raises 20 acres of blueberries on a 100-acre farm.
- 2) The plant spacing is 3ft x 10ft (1,452 plants per acre). Plants cost \$5.25 each and are planted in October of year 0.
- 3) The field has a 25-year life, including all establishment years.
- The soil is uniform throughout the 20acre field and is well suited to blueberry production.
- 5) Pre-planting land preparation (plowing, disking, etc.) is contracted with custom farming providers.
- 6) Sawdust is incorporated before forming raised beds and planting blueberries.
- Sawdust mulch is used and replenished every three years during planting life. Note that using weed mats is not included in this study but would change materials and weed management costs.
- Commercial production begins in year 2 with 1,500 pounds per acre yields, and full production starts in year 7 with 18,000 pounds per acre.
- Various techniques reduce bird depredation, including cannons and AV alarm systems.
- 10) *Hand-harvested fruit*: Berries are harvested using pickers through year 6 of establishment, and at full production, 90 percent are hand-harvested and 10 percent by machine.
- 11) *Machine-harvested fruit*: Berries are harvested using pickers in years two and three of establishment and

machine-harvested in subsequent years, with 50 percent of the fruit sold to the fresh market and the remaining fruit as processed.

- 12) Pruning labor hours is 100 hours per acre at year 6 and subsequent years.
- 13) The fresh market price for organic blueberries is \$2.15 per lb., and the processed market price is \$1.20 per lb.
- 14) The operator owns all buildings and farm equipment debt-free.
- 15) The machinery and equipment used in the budget reflect the typical machinery complement of a Willamette Valley blueberry grower. A detailed breakdown of machinery values is shown in Table 1, page 5. Table 2 provides estimated machinery costs from the American Society of Agricultural Engineers. Table 3 lists the estimated cost of each operation.
- 16) Gasoline and diesel are \$3.25 per gallon.
- 17) General labor is valued at \$22.00 per hour, and equipment operator labor is valued at \$30.00 per hour, including worker's compensation, unemployment insurance, and other overhead expenses.
- 18) During field preparation, the field is watered with hand lines. After planting, the permanent irrigation system is installed in early spring of year 1 for \$900 per acre for the pump, filter, injector, and manifold and \$2,500 per acre for irrigation lines and emitters. The pumping cost is \$275 per acre. Repairs and maintenance for the irrigation system cost one percent of the purchase price per year.
- 19) The trellis is installed in year 2 at a cost of \$1,700 per acre. This trellis system consists of T-posts, metal end posts, and cross arms.

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This dollar figure also accounts for the cost of marking out the field using a GPS system. This budget assumes contract workers drive the posts at a rate of \$200 per acre. Repairs and maintenance for the system cost one percent of the purchase price per year.

- 20) The interest rate on operating funds is8.0 percent and treated as a cashexpense. One-half of the cash expensesare borrowed for six months.
- 21) The operator owns the machinery and land and assessed 8.0 and 4.0 percent interest rates, respectively, as a return on the owner's investment. The land is valued at \$15,000 per acre. The 4.0 percent return on land is equivalent to the current rate landowners could charge for rent to other growers.
- 22) *Machine Harvest Costs*. The cost to machine-harvest blueberries is \$0.16 per pound, whether the grower custom hires someone to harvest or purchases the machine themselves. The calculations are based on the following.
- a. *Replacement costs* are calculated using the straight-line depreciation method: (((purchase price - salvage value) ÷ years of machine life) ÷ total acres). The purchase price is \$364,000, with a salvage value of \$3,640 at the end of 10years. This cost is \$1,802 per acre.
- b. *Interest costs* are calculated using the average value of the machine multiplied by an interest rate: (((purchase price + salvage value) ÷ 2) x interest rate) ÷ total acres). The interest rate is 8.0%. This cost is \$735 per acre.
- c. *Repairs and maintenance* costs are calculated using a percentage of the machine's purchase price: ((purchase price x one percent) ÷ total acres). This cost is \$182 per acre.
- d. *Fuel and lube* costs are based on fuel consumption of four gallons per hour and lube 15% above the fuel costs. The

machine harvests four acres per day in 10 hours: ((4 gallons/hour x 10 hours) x (3.25 per gallon x 1.15)) ÷ total acres per day. This cost is 37 per acre.

- e. Operator labor is estimated at \$30 per hour: ((10 hours per day x \$30 per hour) ÷ total acres per day). This cost is \$75 per acre.
- f. The total variable and fixed cash costs to harvest blueberries with the above assumptions is ((a+b+c+d+e) ÷ pounds harvested per acre): ((\$1,802 + \$735 + \$182 + \$37 + \$75) ÷ 18,000 pounds). This cost is \$0.16 per pound.
- 23) The operator funds the previous year's establishment costs at a charge of 6.0 percent interest as a return on the owner's investment.
- 24) Unrecovered establishment costs are amortized over the remaining 18 years of assumed field life and included in the full production budget as a fixed cost.
- 25) Additional assumptions for hand-harvest variable and fixed cash costs are in Table 4HH, machine-harvest costs in Table 4MH, and fixed costs in Table 5, all on page 6.
- 26) \$1,990 per year was budgeted under "Compliance" in year 1, \$2,090 in year
 2, and \$3,480 in year 3 and subsequent years. Compliance includes recordkeeping, inspection fees, auditing, certification, documentation, training, and lab testing (e.g., water quality). For specific items and costs, refer to the previous establishment study from 2020, Table 4. Follow this link: https://appliedecon.oregonstate.edu/sites/ags

cid7/files/applied-economics/aeb0062.pdf

- 27) No adjustments were made to account for year-to-year fluctuations in yields and prices.
- 28) Price inflation for this study was ignored.
- 29) Owner management, family living, and State and Federal income tax consequences are also ignored.

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Table 1. Machinery Cost A				Hours or				
				miles of	Expected	S	alvage	
Machine	Size or Description	Ma	rket value	annual use	life (years)	1	Value	
Tractor	4 wheel dr 35hp, new	\$	32,000	250	15	\$	6,230	
Air-blast Sprayer	200 gallon unit, PTO, new		13,000	100	15		1,248	
Mower	Flail, 5' unit		6,000	65	15		576	
Weed Sprayer	3 point, 200 gallon unit		5,600	25	15		538	
Cultivator	'6' unit, disk/ripper		3,500	31	15		336	
Planter	6' unit		5,600	8	15		538	
Fertilizer Spreader	Broadcast bander		4,000	15	15		384	
Pickup*	1/2 ton 4x4, gas, new		45,000	12,000	10		17,017	
ATV*	4 wheeler, new		14,000	3,000	5		8,391	
Mainline & pump, per acre	* Pump, filter, injector & manifold		900	N/A	N/A		(
Irrigation System, per acre	Irrigation lines & emitters		2,500	N/A	25		(
Trellis System, per acre	Two wire, wooden end post, metal in-row post		1,700	N/A	23		(
Shop and Machine Shed*	40ft x 80ft Pole barn with partial slab floor		50,000	N/A	30		(

* Truck, ATV, Irrigation System, Shop, and Machine Shed budget allocation will be 20% of total farm usage to reflect berry portion of farm.

		Varial	ble costs	Fixed c	osts	
		Fuel &	Repairs &			
Machine	Size or Description	Lube	Maint.	Depreciation	Interest	Total
			(Costs per hour		
Tractor	4 wheel dr 35hp, new	\$10.56	\$0.50	\$5.44	\$0.27	\$16.77
Air-blast Sprayer	200 gallon unit, PTO, new	0.00	6.00	7.91	0.38	14.30
Mower	Flail, 5' unit	0.00	2.56	5.59	0.27	8.42
Weed Sprayer	3 point, 200 gallon unit	0.00	1.64	15.51	0.75	17.91
Fertilizer Spreader	Broadcast bander	0.00	1.02	17.53	0.85	19.41
			(Costs per mile		
Pickup*	1/2 ton 4x4, gas, new	\$0.22	\$0.05	\$0.23	\$0.21	\$0.71
ATV*	4 wheeler, new	0.65	0.03	0.37	0.30	1.35
				Costs per acre		
Mainline & pump, per acre*	Pump, filter, injector & manifold	\$0.00	\$9.00	\$36.00	\$13.50	\$58.50
Irrigation System, per acre	Irrigation lines & emitters	0.00	25.00	100.00	37.50	162.50
Trellis System, per acre	Two wire, wooden end post, metal in-row post	0.00	17.00	73.91	25.50	116.41
Shop and Machine Shed*	40ft x 80ft Pole barn with partial slab floor	0.00	13.25	16.67	7.50	37.42

* Truck, ATV, Irrigation System, Shop, and Machine Shed budget allocation will be 20% of total farm usage to reflect berry portion of farm.

			_	Machin	e costs	
				Variable		
	Miles per	Acres per	Labor cost	cost per	Fixed cost	Total cost
Operation	hour	hour	per acre	acre	per acre	per acre
Air-blast Sprayer	3.00	2.18	\$13.75	\$7.82	\$6.42	\$37.89
Mower	3.00	3.09	9.70	4.41	3.74	20.39
Weed Sprayer	3.00	2.73	11.00	4.66	8.06	26.29
Fertilizer Spreader	3.00	6.18	4.85	1.96	3.90	25.44

Prices per lb, fresh market Prices per lb, processed market Lbs per acre, fresh market Lbs per acre, processed market Cost of general farm labor, per hour Cost of tractor driver, per hour	Year 0 \$0.00 \$0.00 0 \$22.00	Year 1 \$0.00 \$0.00 0	Year 2 \$2.15 \$0.00	Year 3 \$2.15	Year 4 \$2.15	Year 5	Year 6	Full Prod
Prices per lb, processed market Lbs per acre, fresh market Lbs per acre, processed market Cost of general farm labor, per hour	\$0.00 0 0	\$0.00 0	\$0.00		\$2.15	60.16		
Lbs per acre, fresh market Lbs per acre, processed market Cost of general farm labor, per hour	0	0	4			\$2.15	\$2.15	\$2.15
Lbs per acre, processed market Cost of general farm labor, per hour	0	-		\$0.00	\$0.00	\$0.00	\$0.00	\$1.20
Cost of general farm labor, per hour			1,500	3,600	7,200	10,800	14,400	16,200
	\$22.00	0	0	0	0	0	0	1,800
Cost of tractor driver, per hour		\$22.00	\$22.00	\$22.00	\$22.00	\$22.00	\$22.00	\$22.00
e eer er manner anver, per mean	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00
Cost of hand-harvest labor, per lb	\$0.00	\$0.00	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85	\$0.85
Cost of machine-harvest, per lb	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.16
Cost to load & haul berries, per lb	\$0.00	\$0.00	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03
Berry commission fee, \$ per lb	\$0.00	\$0.00	\$0.04	\$0.04	\$0.04	\$0.04	\$0.04	\$0.04
Cost of fertilizer	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$1,050.00	\$1,050.00
Cost of insecticide	\$0.00	\$75.00	\$175.00	\$175.00	\$175.00	\$175.00	\$365.00	\$365.00
Cost of fungicides	\$0.00	\$0.00	\$300.00	\$300.00	\$300.00	\$300.00	\$450.00	\$450.00
Cost of tissue analysis, per acre	\$0.00	\$0.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00
Cost of soil analysis, per acre	\$8.00	\$0.00	\$3.50	\$3.50	\$3.50	\$3.50	\$3.50	\$3.50
Cost of bird control	\$0.00	\$0.00	\$150.00	\$150.00	\$150.00	\$150.00	\$150.00	\$150.00
Cost of bee hives	\$0.00	\$0.00	\$136.00	\$136.00	\$136.00	\$136.00	\$136.00	\$136.00
Cost of plants	\$5.25	\$5.25	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Cost of irrigation water and power	\$275.00	\$275.00	\$275.00	\$275.00	\$275.00	\$275.00	\$275.00	\$275.00
Cost of cover crop seed	\$25.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Cost of sawdust, per unit	\$85.00	\$85.00	\$0.00	\$0.00	\$85.00	\$0.00	\$0.00	\$85.00
Cost of loader rental	\$62.50	\$62.50	\$0.00	\$0.00	\$62.50	\$0.00	\$0.00	\$20.83
Cost of portable toilets	\$0.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00
Units of sawdust	19.00	11.00	0.00	0.00	11.00	0.00	0.00	3.67
Hours of labor, pruning	0.00	0.00	25.00	40.00	60.00	85.00	100.00	100.00
Hours of labor, hand weeding	0.00	18.00	13.00	13.00	10.00	10.00	10.00	10.00
Hours of irrigating labor	32.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Hours of fertigation labor	0.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Hours of labor to plant	50.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Hours of trellis labor	0.00	0.00	30.00	1.00	1.00	1.00	1.00	1.00
Hours of IPM scouting	0.00	0.00	5.00	5.00	5.00	5.00	5.00	5.00
Hours of bird control	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Bee hives per acre	0.00	0.00	4.00	4.00	4.00	4.00	4.00	4.00
Portable toilets per acre	0.00	0.50	0.50	0.75	0.75	0.75	0.75	0.75
Times to fertilize (dry)	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Times to apply fungicides & insecticide	2.00	2.00	11.00	11.00	11.00	11.00	12.00	12.00
Times to mow	0.00	3.00	6.00	6.00	6.00	6.00	6.00	6.00
Cost of compliance \$1	,140.00	\$1,990.00	\$3,480.00	\$3,480.00	\$3,480.00	\$3,480.00	\$3,480.00	\$3,480.00
Planted bushes	1,452	35	0	0	0	0	0	0

Table 4MH. Partial List of Input A	ssumptions to	Establish a	Organic Mar	ket, Machi	ne-Harvested	Blueberry	Planting, p	er acre.
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Full Prod
Prices per lb, fresh market	\$0.00	\$0.00	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15
Prices per lb, processed market	\$0.00	\$0.00	\$1.20	\$1.20	\$1.20	\$1.20	\$1.20	\$1.20
Lbs per acre, fresh market	0	0	1,500	3,600	3,600	5,300	7,200	9,000
Lbs per acre, processed market	0	0	0	0	3,600	5,300	7,200	9,000
Cost of hand-harvest labor, per lb	\$0.00	\$0.00	\$0.85	\$0.85	\$0.00	\$0.00	\$0.00	\$0.00
Cost of machine-harvest labor, per	lb \$0.00	\$0.00	\$0.00	\$0.00	\$0.16	\$0.16	\$0.16	\$0.16
Cost of fertilizer	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$1,050.00	\$1,050.00
Cost of insecticide	\$0.00	\$75.00	\$175.00	\$175.00	\$175.00	\$175.00	\$365.00	\$365.00
Cost of fungicides	\$0.00	\$0.00	\$300.00	\$300.00	\$300.00	\$300.00	\$450.00	\$450.00

Table 5. Fixed Cost Input	Assumptions t	o Establish Blueberry Plantings, per acre.	
Property insurance	\$25	Operating interest rate	8.00%
Property taxes, including buildings	\$30	Machinery interest rate	8.00%
Land values	\$15,000	Building interest rate	3.00%
Miscellaneous & overhead	\$200	Land interest rate	4.00%
Gasoline price, per gallon	\$3.25	Percent of operating capital borrowed	50.0%
Diesel fuel price, per gallon	\$3.25	Months to borrow operating capital	6.0

Results of establishing and producing organic market, hand-harvested blueberries in the Willamette Valley, Oregon

Cash flow analysis

A cash flow analysis for establishing an organic market, hand-harvested blueberry planting is presented in Table 6HH, page 9. It shows the cash costs required to develop this type of planting. Cash costs include blueberry bushes, irrigation and trellis systems, fertilizer, chemicals, sawdust, labor, beehives, bird control, machinery repairs, fuel, lube, and oil, irrigation water assessments, operating (short-term) interest, compliance costs, machinery and whole-farm insurance, and property taxes. The income, variable, and cash fixed costs are shown for the seven establishment years plus the first full production year.

Total variable costs are \$13,481 in year 0, with an additional \$1,195 of cash fixed costs for a total cash cost of \$14,676 per acre. A positive cash flow begins at year four with gross income exceeding total cash costs by \$73 per acre. However, the planting does not return a sufficient net returns to pay all previous years' cash costs; \$9,731 per acre remains over and above prior expenses.

The major cost components to total cash costs are shown in Table 8HH, page 11. Harvest labor represents 44 percent of the cash needed to establish this planting. Besides harvest labor, labor, not including harvest, costs are the second largest item, making up 15 percent of the total cash costs. The total labor cost is 59 percent of all cash costs; the remainder is in the other cost categories: fertilizer and chemicals, the category of other, and blueberry plants, which are 10, 10, and 8 percent, respectively. The remaining six items comprise about 13 percent of the total cash costs.

Total costs and returns

The total costs and returns for establishing an organic market, hand-harvested blueberry planting is on Table 7HH, page 10. Total costs include all cash out-ofpocket and ownership costs, which consist of a combination of principal and interest payments and a return on investment, or both, to the grower for machinery, land, and funds to pay previous years' establishment costs. The gross income and variable cash costs remain the same as in Table 6HH, except the irrigation and trellis systems are amortized over their productive life and included in fixed costs.

Net projected returns (gross income minus total costs) become positive in year 6 with \$3,187 per acre, At the end of the establishment period, \$33,723 per acre remains to repay all previous costs. This cost is amortized over 18 years as an annual payment of \$4,309 per acre, including principal and interest, to recover the capital investment of establishing the orchard.

Table 8HH, page 11, shows the major cost components as a percent of total total cost. When all expenses are included, the top item is harvesting labor, at 30 percent of total costs. Next, the category of other, and interest charges on loans, establishment, and land are 24 and 16 percent, respectively, followed by labor, other than harvest, at 10 percent. The remaining five items comprise about 19 percent of the total costs.

Summary of establishing organic market, hand-harvest blueberries

Figure 2, page 11, shows the cumulative cash and total costs of establishing an organic market of hand-harvested blueberries. The light and darker blue lines denote these results. Cumulative net returns after subtracting cash costs become positive in year 9 with \$1,838 and the cumulative net returns after subtracting total costs are positive year 15 with \$5,071 per acre.

Appendix A, Tables 11HH-18HH, pages 19-26, contains the annual cost and return budgets for establishing this blueberry planting.

Sensitivity Analysis

Table 9HH, page 11, shows the estimated per-acre returns over cash and total costs at

varying yields and prices when the blueberry planting is in full production. The return over cash cost is \$15,104 per acre at our assumed yield and price of 18,000 pounds and average price of \$2.06 per pound. Prices increase or decrease by \$0.10 per pound and yields by 1,000 pounds per acre. In this sensitivity analysis, returns per acre are positive at all yields and prices.

Table 10HH shows the estimated per-acre returns over total costs at varying yields and prices when the orchard is in full production. The return on total cost is \$5,542 per acre at our assumed yield and price of 18,000 pounds and \$2.06 per pound. In this sensitivity analysis, returns per acre are positive at yields above 16,000 pounds and a price of \$1.96.

Table 6HH. Cash Costs and R	Table 6HH. Cash Costs and Returns of Establishing and Producing an Organic Market, Hand-Harvested Blueberry Planting.												
Income:	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Full Prod					
Yield (lbs/acre) fresh	0	0	1,500	3,600	7,200	10,800	14,400	16,200					
Processed	0	0	0	0	0	0	0	1,800					
Price (dollars/lb) Fresh	\$0.00	\$0.00	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15					
Price (dollars/lb) Processed	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20					
Gross Income (dollars/acre)	\$0.00	\$0.00	\$3,225.00	\$7,740.00	\$15,480.00	\$23,220.00	\$30,960.00	\$36,990.00					
Variable Costs (per acre):													
Custom work/Rental equip.	\$637.50	\$62.50	\$0.00	\$0.00	\$62.50	\$0.00	\$0.00	\$308.83					
Blueberry bushes	7,623.00	183.75	0.00	0.00	0.00	0.00	0.00	0.00					
Fertilizer	850.00	850.00	850.00	850.00	850.00	850.00	1,050.00	1,050.00					
Soil test	8.00	0.00	0.00	0.00	3.50	0.00	0.00	3.50					
Chemicals	0.00	0.00	475.00	475.00	475.00	475.00	815.00	815.00					
Sawdust	1,615.00	85.00	0.00	0.00	85.00	0.00	0.00	28.33					
Cover crop seed	35.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Harvest labor	0.00	0.00	1,275.00	3,060.00	6,120.00	9,180.00	12,240.00	13,770.00					
Pruning labor	0.00	0.00	550.00	880.00	1,320.00	1,870.00	2,200.00	2,200.00					
General labor	1,864.85	671.97	1,429,16	505.16	505.16	505.16	2	518.91					
Other harvest costs	0.00	0.00	115.00	262.00	514.00	766.00	1,018.00	1,270.00					
Machine costs	94.66	108.88	201.10	201.10	201.10	201.10	208.92	208.92					
Irrigation water and power	275.00	275.00	275.00	275.00	275.00	275.00	275.00	275.00					
Irrigation system	0.00	2,500.00	9.00	9.00	9.00	9.00	9.00	9.00					
Trellis system	0.00	0.00	1,700.00	17.00	17.00	17.00	17.00	17.00					
Bee hives	0.00	0.00	544.00	544.00	544.00	544.00	544.00	544.00					
Bird control	0.00	0.00	150.00	150.00	150.00	150.00	150.00	150.00					
Portable toilets	0.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00					
Shop and machine shed	13.25	13.25	13.25	13.25	13.25	13.25	13.25	13.25					
Miscellaneous & overhead	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00					
Interest: operating capital	264.33	50.51	123.23	150.33	228.39	302.61	386.68	429.14					
Total variable costs	\$13,480.58	\$5,075.85	\$7,984.74	\$7,666.84	\$11,647.90	\$15,433.12	\$19,720.77	\$21,885.89					
Gross Income - Variable Cost	-\$13,480.58	-\$5,075.85	-\$4,759.74	\$73.16	\$3,832.10	\$7,786.88	\$11,239.23	\$15,104.11					
Fixed cash costs (per acre):													
Compliance	\$1,140.00	\$1,990.00	\$3,480.00	\$3,480.00	\$3,480.00	\$3,480.00	\$3,480.00	\$3,480.00					
Property insurance	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00					
Property taxes	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00					
Total fixed cash cost	\$1,195.00	\$2,045.00	\$3,535.00	\$3,535.00	\$3,535.00	\$3,535.00	\$3,535.00	\$3,535.00					
Total cash cost	\$14,675.58	\$7,120.85	\$11,519.74	\$11,201.84	\$15,182.90	\$18,968.12	\$23,255.77	\$25,420.89					
Net projected returns	-\$14,675.58	-\$7,120.85	-\$8,294.74	-\$3,461.84	\$297.10	\$4,251.88	\$7,704.23	\$11,569.11					
Cumulative returns	-\$14,675.58	-\$21,796.44	-\$30,091.18	-\$33,553.03	-\$33,255.93	-\$29,004.05	-\$21,299.82	-\$9,730.71					

Table 7HH. Total Costs and Returns of Establishing and Producing an Organic Market, Hand-Harvested Blueberry Planting.									
Income:	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Full Prod	
Yield (lbs/acre) fresh	0	0	1,500	3,600	7,200	10,800	14,400	16,200	
Processed	0	0	0	0	0	0	0	1,800	
Price (dollars/lb) Fresh	\$0.00	\$0.00	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	
Price (dollars/lb) Processed	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	
Gross Income (dollars/acre)	\$0.00	\$0.00	\$3,225.00	\$7,740.00	\$15,480.00	\$23,220.00	\$30,960.00	\$36,990.00	
Variable Costs (per acre):									
Custom work/Rental equip.	\$637.50	\$62.50	\$0.00	\$0.00	\$62.50	\$0.00	\$0.00	\$308.83	
Blueberry bushes	7,623.00	183.75	0.00	0.00	0.00	0.00	0.00	0.00	
Fertilizer	850.00	850.00	850.00	850.00	850.00	850.00	1,050.00	1,050.00	
Soil test	8.00	0.00	0.00	0.00	3.50	0.00	0.00	3.50	
Chemicals	0.00	0.00	475.00	475.00	475.00	475.00	815.00	815.00	
Sawdust	1,615.00	85.00	0.00	0.00	85.00	0.00	0.00	28.33	
Cover crop seed	35.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Harvest labor	0.00	0.00	1,275.00	3,060.00	6,120.00	9,180.00	12,240.00	13,770.00	
Pruning labor	0.00	0.00	550.00	880.00	1,320.00	1,870.00	2,200.00	2,200.00	
General labor	1,864.85	671.97	1,429.16	505.16	505.16	505.16	518.91	518.91	
Other harvest costs	0.00	0.00	115.00	262.00	514.00	766.00	1,018.00	1,270.00	
Machine costs	94.66	108.88	201.10	201.10	201.10	201.10	208.92	208.92	
Irrigation water and power	275.00	275.00	275.00	275.00	275.00	275.00	275.00	275.00	
Irrigation system	0.00	0.00	9.00	9.00	9.00	9.00	9.00	9.00	
Trellis system	0.00	0.00	0.00	17.00	17.00	17.00	17.00	17.00	
Bee hives	0.00	0.00	544.00	544.00	544.00	544.00	544.00	544.00	
Bird control	0.00	0.00	150.00	150.00	150.00	150.00	150.00	150.00	
Portable toilets	0.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	
Shop and machine shed	13.25	13.25	13.25	13.25	13.25	13.25	13.25	13.25	
Miscellaneous & overhead	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	
Interest: operating capital	264.33	50.51	123.23	150.33	228.39	302.61	386.68	429.14	
Total variable costs	\$13,480.58	\$2,575.85	\$6,284.74	\$7,666.84	\$11,647.90	\$15,433.12	\$19,720.77	\$21,885.89	
Gross revenue - Variable costs	-\$13,480.58	-\$2,575.85	-\$3,059.74	\$73.16	\$3,832.10	\$7,786.88	\$11,239.23	\$15,104.11	
Fixed costs									
Compliance	\$1,140.00	\$1,990.00	\$3,480.00	\$3,480.00	\$3,480.00	\$3,480.00	\$3,480.00	\$3,480.00	
Property insurance	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	
Property taxes	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	
Depreciation and Interest									
Machinery and Equipment	28.44	302.40	320.01	217.25	690.81	690.81	735.12	735.12	
Pickup and ATV	72.96	72.96	72.96	72.96	72.96	72.96	72.96	72.96	
Irrigation and Trellis Systems	0.00	187.00	286.41	286.41	286.41	286.41	286.41	286.41	
Shop and Machine Shed	24.17	24.17	24.17	24.17	24.17	24.17	24.17	24.17	
Land Interest Charge	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	
Interest on Establishment Costs	0.00	924.07	1,477.96	2,142.53	2,550.84	2,786.53	2,799.07	4,308.54	
Total fixed costs	\$1,920.57	\$4,155.60	\$6,316.51	\$6,878.32	\$7,760.20	\$7,995.88	\$8,052.73	\$9,562.20	
Total costs	\$15,401.15	\$6,731.46	\$12,601.26	\$14,545.17	\$19,408.10	\$23,429.01	\$27,773.49	\$31,448.08	
Net projected returns	-\$15,401.15	-\$6,731.46	-\$9,376.26	-\$6,805.17	-\$3,928.10	-\$209.01	\$3,186.51	\$5,541.92	
Cumulative Returns ¹				-\$38,314.03					

¹Unrecovered establishment costs at the end of year 6 are amortized over the remaining years of assumed life of the berry planting. This amorized cost is shown in the Interest on establishment costs line at full production.

		Percent of		Percent of
Cost Item	Cash Costs1	Total	Total Costs1	Total
Plants	\$7,807	7.59%	\$7,807	5.16%
Sawdust	1,813	1.76%	1,813	1.20%
Irrigation system	\$2,554	2.48%	N/A	0.00%
Trellis system	1,700	1.65%	N/A	0.00%
Fertilizer and chemicals	10,730	10.43%	10,730	7.09%
Harvest labor	45,645	44.36%	45,645	30.17%
Labor, not including harvest	15,539	15.10%	15,539	10.27%
Other harvest costs: hauling, commissions, etc.	3,945	3.83%	3,945	2.61%
Machine costs	1,426	1.39%	5,729	3.79%
Interest: Loans, establishment & land charges	1,935	1.88%	23,725	15.68%
Other	9,801	9.53%	36,350	24.03%
Totals	\$102,896		\$151,284	

Table 8HH. Cash and Total Costs to Establish an Organic Market, Hand-Harvested Blueberry Planting for the First Six Years, \$/acre

¹The irrigation system and trellis are long-term assets that are cash expenditures in the year installed but, as an economic cost, are depreciated over the planting's life.



9HH. Hand-Harvest Organic Blueberries:	Estimated Per Acre Returns	Over Cash Costs at Varying Yields & Prices.

				Po	ands per Ac	re			
Fresh Price/Lb	14,000	15,000	16,000	17,000	18,000	19,000	20,000	21,000	22,000
\$1.76	\$6,090	\$6,994	\$7,897	\$8,801	\$9,704	\$10,608	\$11,511	\$12,414	\$13,318
1.86	7,490	8,494	9,497	10,501	11,504	12,508	13,511	14,514	15,518
1.96	8,890	9,994	11,097	12,201	13,304	14,408	15,511	16,614	17,718
2.06	10,290	11,494	12,697	13,901	15,104	16,308	17,511	18,714	19,918
2.16	11,690	12,994	14,297	15,601	16,904	18,208	19,511	20,814	22,118
2.26	13,090	14,494	15,897	17,301	18,704	20,108	21,511	22,914	24,318
2.36	14,490	15,994	17,497	19,001	20,504	22,008	23,511	25,014	26,518
HH. Hand-Harvest C	Organic Blue	berries: Esti	mated Per A	cre Returns	Over Total	l Costs at V	arying Yield	ls & Prices.	
				Po	ands per Ac	re			
Fresh Price/Lb	14,000	15,000	16,000	17,000	18,000	19,000	20,000	21,000	22,000
\$1.76	-\$3,472	-\$2,568	-\$1,665	-\$762	\$142	\$1,045	\$1,949	\$2,852	\$3,756
1.86	-2,072	-1,068	-65	938	1,942	2,945	3,949	4,952	5,956
1.00						4 0 4 5	5 0.40	7.053	8,156
1.96	-672	432	1,535	2,638	3,742	4,845	5,949	7,052	0,150
	-672 728	432	1,535 3,135	2,638 4,338	3,742 5,542	4,845 6,745	7,949	9,152	
1.96						1		,	10,356
1.96 2.06	728	1,932	3,135	4,338	5,542	6,745	7,949	9,152	10,356

Results of establishing and producing organic market, machine-harvested blueberries in the Willamette Valley, Oregon

Cash flow analysis

A cash flow analysis for establishing an organic market, machine-harvested blueberry planting is presented in Table 6MH, page 14. It shows the cash costs required to develop this type of planting. Cash costs include blueberry bushes, irrigation and trellis systems, fertilizer, chemicals, sawdust, labor, beehives, bird control, machinery repairs, fuel, lube, and oil, irrigation water assessments, operating (short-term) interest, compliance costs, machinery and whole-farm insurance, and property taxes. The income, variable, and cash fixed costs are shown for the seven establishment years plus the first full production year.

Total variable costs are \$13,481 in year 0, with an additional \$2,045 of cash fixed costs for a total cash cost of \$15,526 per acre. A positive cash flow begins at year four with gross income exceeding total cash costs by \$2,018 per acre. The planting does return a sufficient net returns to pay all previous years' cash costs with \$1,518 per acre over and above prior expenses.

Table 8MH, page 16, shows the major cost components of total cash costs. Labor, other than harvest, represents 23 percent of the cash needed to establish this planting. Harvest costs (which include hauling, commissions, etc.) are the second largest item, making up 17 percent of the total cash costs.

The remainder is in the other cost categories: fertilizer and chemicals, the category of other, and blueberry plants, which are 16, 14, and 11 percent, respectively. The remaining six items comprise about 19 percent of total cash costs.

Total costs and returns

The total costs and returns for establishing an organic market, machine-harvested blueberry planting is in Table 7MH, page 15. Total costs include all cash out-ofpocket and ownership costs, which consist of a combination of principal and interest payments and a return on investment, or both, to the grower for machinery, land, and funds to pay previous years' establishment costs. The gross income and variable cash costs remain the same as in Table 6MH, except the irrigation and trellis systems are amortized over their productive life and included in fixed costs.

Net projected returns (gross income minus total costs) become positive at year 5, with total costs exceeding gross income by \$2,123 per acre. At the end of the establishment period, \$22,057 per acre remains to repay all previous costs. This cost is amortized over 18 years as an annual payment of \$4,030 per acre, including principal and interest, to recover the capital investment of establishing the orchard.

The major cost components as a percent of total cost are shown in Table 8MH, page 16. When all expenses are included, the top item is the category of other with 31 percent of total costs, followed by interest charges on loans, establishment, and land, and labor, not including harvest, which are 20, and 13 percent, respectively. Next, harvest costs (which include hauling, commissions, etc.) are 10 percent. The remaining five items comprise about 26 percent of the total costs.

Summary of establishing organic market, machine-harvest blueberries

Figure 3, page 16, shows the cumulative cash and total costs of establishing an organic market of machine-harvested blueberries. The light and darker blue lines denote these results. The cumulative net returns after subtracting cash costs turns positive by \$1,518 per acre in year 8, and the cumulative net returns after subtracting total costs become positive in 11 years with \$9,640.

Appendix B, Tables 13MH-20MH, pages 27-34, contains the annual cost and return budgets for establishing this blueberry planting.

Sensitivity Analysis

Table 9MH, page 17, shows the estimated per-acre returns over cash costs at varying yields and prices when the blueberry planting is in full production. The return over cash cost is \$19,849 per acre at our assumed yield and price of 18,000 pounds and average price of \$1.68 per pound. Prices increase or decrease by \$0.10 per pound and yields by 1,000 pounds per acre. In this sensitivity analysis, returns per acre are positive at all yields and prices.

Table 10MH shows the estimated per-acre returns over total costs at varying yields and prices when the orchard is in full production. The return on total cost is \$10,566 per acre at our assumed yield and price of 18,000 pounds and \$1.68 per pound. In this sensitivity analysis, returns per acre are positive at all yields and prices.

Table 6MH. Cash Costs and Return	Table 6MH. Cash Costs and Returns of Establishing and Producing an Organic Market, Machine-Harvested Blueberry Planting.										
Income:	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Full Prod			
Yield (lbs/acre) fresh	0	0	1,500	3,600	3,600	5,300	7,200	9,000			
Processed	0	0	0	0	3,600	5,300	7,200	9,000			
Price (dollars/lb) Fresh	\$0.00	\$0.00	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15			
Price (dollars/lb) Processed	0.00	0.00	1.20	1.20	1.20	1.20	1.20	1.20			
Gross Income (dollars/acre)	\$0.00	\$0.00	\$3,225.00	\$7,740.00	\$12,060.00	\$17,755.00	\$24,120.00	\$30,150.00			
Variable Costs (per acre):											
Custom work/Rental equipt.	\$637.50	\$62.50	\$0.00	\$0.00	\$62.50	\$0.00	\$0.00	\$20.83			
Blueberry bushes	7,623.00	183.75	0.00	0.00	0.00	0.00	0.00	0.00			
Fertilizer	850.00	850.00	850.00	850.00	850.00	850.00	1,050.00	1,050.00			
Soil test	8.00	0.00	0.00	0.00	3.50	0.00	0.00	3.50			
Chemicals	0.00	0.00	475.00	475.00	475.00	475.00	815.00	815.00			
Sawdust	1,615.00	85.00	0.00	0.00	85.00	0.00	0.00	28.33			
Cover crop seed	35.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Harvest labor	0.00	0.00	1,275.00	3,060.00	0.00	0.00	0.00	0.00			
Pruning labor	0.00	0.00	550.00	880.00	1,320.00	1,870.00	2,200.00	2,200.00			
General labor	1,864.85	671.97	1,429.16	505.16	505.16	505.16	518.91	518.91			
Harvest costs	0.00	0.00	115.00	262.00	1,666.00	2,448.00	3,322.00	4,150.00			
Machine costs	94.66	108.88	201.10	201.10	201.10	201.10	208.92	208.92			
Irrigation water and power	275.00	275.00	275.00	275.00	275.00	275.00	275.00	275.00			
Irrigation sytem	0.00	2,500.00	9.00	9.00	9.00	9.00	9.00	9.00			
Trellis system	0.00	0.00	1,700.00	17.00	17.00	17.00	17.00	17.00			
Bee hives	0.00	0.00	544.00	544.00	544.00	544.00	544.00	544.00			
Bird control	0.00	0.00	150.00	150.00	150.00	150.00	150.00	150.00			
Portable toilets	0.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00			
Shop and machine shed	13.25	13.25	13.25	13.25	13.25	13.25	13.25	13.25			
Miscellaneous & overhead	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00			
Interest: operating capital	264.33	50.51	123.23	150.33	129.03	152.65	187.96	205.58			
Total variable costs	\$13,480.58	\$5,075.85	\$7,984.74	\$7,666.84	\$6,580.54	\$7,785.16	\$9,586.05	\$10,484.33			
Gross Income - Variable Cost	-\$13,480.58	-\$5,075.85	-\$4,759.74	\$73.16	\$5,479.46	\$9,969.84	\$14,533.95	\$19,665.67			
Fixed cash costs (per acre):											
Compliance	\$1,990.00	\$2,090.00	\$3,480.00	\$3,480.00	\$3,480.00	\$3,480.00	\$3,480.00	\$3,480.00			
Property insurance	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00			
Property taxes	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00			
Total fixed cash cost	\$2,045.00	\$2,145.00	\$3,535.00	\$3,535.00	\$3,535.00	\$3,535.00	\$3,535.00	\$3,535.00			
Total cash cost	\$15,525.58	\$7,220.85	\$11,519.74	\$11,201.84	\$10,115.54	\$11,320.16	\$13,121.05	\$14,019.33			
Net projected returns	-\$15,525.58	-\$7,220.85	-\$8,294.74	-\$3,461.84	\$1,944.46	\$6,434.84		\$16,130.67			
Cumulative returns	-\$15,525.58	-\$22,746.44	-\$31,041.18	-\$34,503.03	-\$32,558.57	-\$26,123.73	-\$15,124.78	\$1,005.89			

Table 7MH. Total Costs and Returns of	of Establishing an	d Producing a			ine-Harvested	Blueberry Pl	lanting.	
Income:	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Full Prod
Yield (lbs/acre) fresh	0	0	1,500	3,600	3,600	5,300	7,200	9,000
Processed	0	0	0	0	3,600	5,300	7,200	9,000
Price (dollars/lb) Fresh	\$0.00	\$0.00	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15	\$2.15
Price (dollars/lb) Processed	0.00	0.00	1.20	1.20	1.20	1.20	1.20	1.20
Gross Income (dollars/acre)	\$0.00	\$0.00	\$3,225.00	\$7,740.00	\$12,060.00	\$17,755.00	\$24,120.00	\$30,150.00
Variable Costs (per acre):								
Custom work/Rental equipt.	\$637.50	\$62.50	\$0.00	\$0.00	\$62.50	\$0.00	\$0.00	\$20.83
Blueberry bushes	7,623.00	183.75	0.00	0.00	0.00	0.00	0.00	0.00
Fertilizer	850.00	850.00	850.00	850.00	850.00	850.00	1,050.00	1,050.00
Soil test	8.00	0.00	0.00	0.00	3.50	0.00	0.00	3.50
Chemicals	0.00	0.00	475.00	475.00	475.00	475.00	815.00	815.00
Sawdust	1,615.00	85.00	0.00	0.00	85.00	0.00	0.00	28.33
Cover crop seed	35.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Harvest labor	0.00	0.00	1,275.00	3,060.00	0.00	0.00	0.00	0.00
Pruning labor	0.00	0.00	550.00	880.00	1,320.00	1,870.00	2,200.00	2,200.00
General labor	1,864.85	671.97	1,429.16	505.16	505.16	505.16	518.91	518.91
Harvest costs	0.00	0.00	115.00	262.00	1,666.00	2,448.00	3,322.00	4,150.00
Machine costs	94.66	108.88	201.10	201.10	201.10	201.10	208.92	208.92
Irrigation water and power	275.00	275.00	275.00	275.00	275.00	275.00	275.00	275.00
5	2/3.00	2/3.00	275.00	275.00	275.00	2/3.00	2/3.00	275.00
Irrigation sytem								
Trellis system	0.00	0.00	0.00	17.00	17.00	17.00	17.00	17.00
Bee hives	0.00	0.00	544.00	544.00	544.00	544.00	544.00	544.00
Bird control	0.00	0.00	150.00	150.00	150.00	150.00	150.00	150.00
Portable toilets	0.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
Shop and machine shed	13.25	13.25	13.25	13.25	13.25	13.25	13.25	13.25
Miscellaneous & overhead	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00
Interest: operating capital	264.33	50.51	123.23	150.33	129.03	152.65	187.96	205.58
Total variable costs	\$13,480.58	\$2,575.85	\$6,284.74	\$7,666.84	\$6,580.54	\$7,785.16	\$9,586.05	\$10,484.33
Gross revenue - Variable costs	-\$13,480.58	-\$2,575.85	-\$3,059.74	\$73.16	\$5,479.46	\$9,969.84	\$14,533.95	\$19,665.67
Fixed costs								
Compliance	\$1,990.00	\$2,090.00	\$3,480.00	\$3,480.00	\$3,480.00	\$3,480.00	\$3,480.00	\$3,480.00
Property insurance	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Property taxes	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Depreciation and Interest								
Machinery and Equipment	28.44	302.40	320.01	217.25	690.81	690.81	735.12	735.12
Pickup and ATV	72.96	72.96	72.96	72.96	72.96	72.96	72.96	72.96
Irrigation and Trellis Systems	0.00	187.00	286.41	137.50	286.41	286.41	286.41	286.41
Shop and Machine Shed	24.17	24.17	24.17	24.17	24.17	24.17	24.17	24.17
Land Interest Charge	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00
Interest on Establishment Costs	0.00	975.07	1,538.02	2,206.20	2,609.39	2,749.75	2,629.10	4,046.92
Total fixed costs	\$2,770.57	\$4,306.60	\$6,376.57	\$6,793.07	\$7,818.74	\$7,959.10	\$7,882.76	\$9,300.58
Total costs	\$16,251.15	\$6,882.46	\$12,661.32	\$14,459.92	\$14,399.29	\$15,744.27	\$17,468.81	\$19,784.90
Net projected returns	-\$16,251.15	-\$6,882.46	-\$9,436.32	-\$6,719.92	-\$2,339.29	\$2,010.73	\$6,651.19	\$10,365.10
Cumulative Returns	-\$16,251.15	-\$23,133.61	-\$32,569.92	-\$39,289.84	-\$41,629.13	-\$39,618.39	-\$32,967.20	-\$22,602.10

¹Unrecovered establishment costs at the end of year 6 are amortized over the remaining years of assumed life of the berry planting. This amorized cost is shown in the Interest on establishment costs line at full production.

¥		Percent of	Economic	Percent of
Cost Item	Cash Costs1	Total	Costs ¹	Total
Plants	\$7,807	11.37%	\$7,807	6.64%
Sawdust	1,813	2.64%	1,813	1.54%
Irrigation system	\$2,554	3.72%	N/A	0.00%
Trellis system	1,700	2.48%	N/A	0.00%
Fertilizer and chemicals	10,730	15.63%	10,730	9.12%
Harvest labor	4,335	6.32%	4,335	3.69%
Labor, not including harvest	15,539	22.64%	15,539	13.21%
Harvest costs: hauling, commissions, etc.	11,963	17.43%	11,963	10.17%
Machine costs	1,426	2.08%	5,729	4.87%
Interest: Loans, establishment & land charges	1,264	1.84%	22,818	19.40%
Other	9,513	13.86%	36,863	31.35%
Totals	\$68,644		\$117,598	

Table 8MH. Cash and Total Costs to Establish an Organic Market, Machine-Harvested Blueberry Planting for the First Sevven Years, \$/acre

'The irrigation system and trellis are long-term assets that are cash expenditures in the year installed but, as an economic cost, are depreciated over the planting's life.



			1 ound	is per Acre -				
14,000	15,000	16,000	17,000	18,000	19,000	20,000	21,000	22,000
\$16,481	\$18,111	\$19,740	\$21,370	\$22,999	\$24,629	\$26,258	\$27,888	\$29,517
17,881	19,611	21,340	23,070	24,799	26,529	28,258	29,988	31,717
19,281	21,111	22,940	24,770	26,599	28,429	30,258	32,088	33,917
20,681	22,611	24,540	26,470	28,399	30,329	32,258	34,188	36,117
22,081	24,111	26,140	28,170	30,199	32,229	34,258	36,288	38,317
23,481	25,611	27,740	29,870	31,999	34,129	36,258	38,388	40,517
24,881	27,111	29,340	31,570	33,799	36,029	38,258	40,488	42,717
	16,481 17,881 19,281 20,681 22,081 23,481	\$16,481 \$18,111 17,881 19,611 19,281 21,111 20,681 22,611 22,081 24,111 23,481 25,611	\$16,481 \$18,111 \$19,740 17,881 19,611 21,340 19,281 21,111 22,940 20,681 22,611 24,540 22,081 24,111 26,140 23,481 25,611 27,740	\$16,481 \$18,111 \$19,740 \$21,370 17,881 19,611 21,340 23,070 19,281 21,111 22,940 24,770 20,681 22,611 24,540 26,470 22,081 24,111 26,140 28,170 23,481 25,611 27,740 29,870	\$16,481 \$18,111 \$19,740 \$21,370 \$22,999 17,881 19,611 21,340 23,070 24,799 19,281 21,111 22,940 24,770 26,599 20,681 22,611 24,540 26,470 28,399 22,081 24,111 26,140 28,170 30,199 23,481 25,611 27,740 29,870 31,999	\$16,481 \$18,111 \$19,740 \$21,370 \$22,999 \$24,629 17,881 19,611 21,340 23,070 24,799 26,529 19,281 21,111 22,940 24,770 26,599 28,429 20,681 22,611 24,540 26,470 28,399 30,329 22,081 24,111 26,140 28,170 30,199 32,229 23,481 25,611 27,740 29,870 31,999 34,129	\$16,481 \$18,111 \$19,740 \$21,370 \$22,999 \$24,629 \$26,258 17,881 19,611 21,340 23,070 24,799 26,529 28,258 19,281 21,111 22,940 24,770 26,599 28,429 30,258 20,681 22,611 24,540 26,470 28,399 30,329 32,258 22,081 24,111 26,140 28,170 30,199 32,229 34,258 23,481 25,611 27,740 29,870 31,999 34,129 36,258	\$16,481\$18,111\$19,740\$21,370\$22,999\$24,629\$26,258\$27,88817,88119,61121,34023,07024,79926,52928,25829,98819,28121,11122,94024,77026,59928,42930,25832,08820,68122,61124,54026,47028,39930,32932,25834,18822,08124,11126,14028,17030,19932,22934,25836,28823,48125,61127,74029,87031,99934,12936,25838,388

Table 9MH. Organic Market, Machine-Harvested Blueberries: Estimated Per Acre Returns Over Cash Costs at Varying Yields & Prices at Full Production.

Table 10MH. Organic Market, Machine-Harvested Blueberries: Estimated Per Acre Returns Over Total Costs at Varying Yields & Prices at Full Production.

				Poun	ds per Acre				
Fresh Price/Lb	14,000	15,000	16,000	17,000	18,000	19,000	20,000	21,000	22,000
\$1.85	\$7,998	\$9,627	\$11,257	\$12,886	\$14,516	\$16,145	\$17,775	\$19,404	\$21,033
1.95	9,398	11,127	12,857	14,586	16,316	18,045	19,775	21,504	23,233
2.05	10,798	12,627	14,457	16,286	18,116	19,945	21,775	23,604	25,433
2.15	12,198	14,127	16,057	17,986	19,916	21,845	23,775	25,704	27,633
2.25	13,598	15,627	17,657	19,686	21,716	23,745	25,775	27,804	29,833
2.35	14,998	17,127	19,257	21,386	23,516	25,645	27,775	29,904	32,033
2.45	16,398	18,627	20,857	23,086	25,316	27,545	29,775	32,004	34,233

Table 11MH. Organic Market, Machine-Harvested Blueberries: Estimated Per Acre Returns Over Cash Costs at Varying Harvest Costs and Percentage of Fresh Market Fruit at Full Production.

	Percent Fresh Market Fruit											
Harvest Cost/Lb	30%	40%	50%	60%	70%	80%	90%	100%				
0.14	\$16,613	\$18,323	\$20,033	\$21,743	\$23,453	\$25,163	\$26,873	\$28,583				
0.15	16,429	18,139	19,849	21,559	23,269	24,979	26,689	28,399				
0.16	16,246	17,956	19,666	21,376	23,086	24,796	26,506	28,216				
0.17	16,062	17,772	19,482	21,192	22,902	24,612	26,322	28,032				
0.18	15,878	17,588	19,298	21,008	22,718	24,428	26,138	27,848				
0.19	15,695	17,405	19,115	20,825	22,535	24,245	25,955	27,665				
0.20	15,511	17,221	18,931	20,641	22,351	24,061	25,771	27,481				

Table 12MH. Organic Market, Machine-Harvested Blueberries: Estimated Per Acre Returns Over Total Costs at Varying Harvest Costs and Percentage of Fresh Market Fruit at Full Production.

				Percent	Fresh Harve	st		
Harvest Cost/Lb	30%	40%	50%	60%	70%	80%	90%	100%
0.14	\$7,027	\$8,897	\$10,767	\$12,637	\$14,507	\$16,377	\$18,247	\$20,116
0.15	6,826	8,696	10,566	12,436	14,306	16,176	18,046	19,916
0.16	6,625	8,495	10,365	12,235	14,105	15,975	17,845	19,715
0.17	6,424	8,294	10,164	12,034	13,904	14,593	17,644	19,514
0.18	6,224	8,094	9,964	11,834	13,703	15,774	17,443	19,313
0.19	6,023	7,893	9,763	11,633	13,503	15,373	17,243	19,113
0.20	5,822	7,692	9,562	11,432	13,302	15,172	17,042	18,912

Conclusions

This study's results show an increase in production inputs in recent years compared to previous cost-of-production studies found https://appliedecon.oregonstate.edu/oaeb.

Harvest labor is by far the highest-cost input for growers using hand-harvesting methods. However, these costs can be reduced by implementing machine-harvesting methods. Tables 11MH and 12MH, page 17, show the results of net returns when varying the percent of fresh fruit marketed at varying harvest costs. At 50 percent of the fruit sold in the fresh market and harvesting expenses at \$0.16 per pound, due to rounding errors within calculations, the net returns are close to the same as in Tables 9MH and 10MH. Interestingly, per acre, net returns increase by \$1,710 and \$1,870 per acre when including cash and total costs, respectively. However, the per-acre net returns decrease by \$184 and \$201, respectively, with a decrease of \$0.10 in harvesting costs.

These two tables illustrate the importance of focusing on research for blueberry plants and varieties that can be mechanically harvested. From the grower's perspective, having sufficient liquidity, solvency, and repayment capacity to finance a machine harvester through cash flows or loans could be challenging. Thus, smaller growers may be required to custom-hiring the harvest operations. This cost of establishment study will provide helpful information to fresh and processed market blueberry producers and investors considering planting berries. However, like any other enterprise budget, putting your current costs in the budget will make it more meaningful. Many tools are available for university farm management specialists and computer software programs such as $AgProfit^{TM}$. This program is available as a download for free at (www.agtools.org). Contact your local Extension Agent to find the latest tools and budget information.

Growers must remember the impact that a particular enterprise, such as a blueberry planting, can have on the overall financial stability of the farm business. Financial managers can recommend planting one crop over another to improve profitability. Still, the financial requirements to complete the planting could jeopardize cash flows, increase the debt-to-asset ratio, and diminish the solvency of the farm. There are many economic and financial considerations before such decisions are made. Seeking advice from university Extension and research faculty, industry representatives, or consultants can help in those decisions and keep your farm profitable.

APPENDIX A

Enterprise Budgets: Organic Market, Hand-harvested Blueberries in the Willamette Valley, Oregon

Table 11HH. Year 0, Blueberries, Organi-	c Marke	t, Hand Harv	est, \$/acre, econ	omic costs an	d returns.	
VARIABLE CASH COSTS		cription	Labor	Machinery	Materials	Total
Soil sample (every 4th yr)					\$8.00	\$8.00
Land Preparation, Custom Operations						50.00
Rip, Plow, Drag, and Roll	2.00	times			50.00	20100
						1 (77 50
Sawdust Application (every 3rd yr)	10.00				1 616 00	1,677.50
Sawdust	19.00	units			1,615.00	
Loader Rental					62.50	
Fertilization						856.81
Fertilizer Spreader	1.00	times	4.85	1.96		
Fertilizer					850.00	
Incorporate Fertilizer						15.00
Rototiller, Rental					15.00	
Pre-plant						544.00
Mark Field	2.00	hours	\$44.00			211100
Shape Beds, Custom	2.00	nears	011100		500.00	
						0.000.00
Planting Bushes	50.00	h	1 100 00			8,723.00
Labor		hours	1,100.00		a (22 00	
Blueberry Bushes	1,452	plants			7,623.00	
Post-plant						55.00
Drag Field			12.00	8.00		
Seed Cover Crop					35.00	
Irrigation						989.00
Labor	32.00	hours	704.00			
Handline Rental					10.00	
Water and Power					275.00	
Pickup				53.98		53.98
ATV				30.72		30.72
Shop and Machine Shed					13.25	13.25
Miscellaneous and Overhead					200.00	200.00
Interest: Operating Capital		6 months			264.33	264.33
Fotal variable costs			\$1,864.85	\$94.66	\$11,521.08	\$13,480.58
				4.5 110 0	,	,
FIXED CASH COSTS					Unit	Total
Compliance					acre	\$1,140.00
Property Insurance					acre	25.00
Property Taxes Fotal fixed cash costs					acre	30.00 \$1,195.00
rotar fixed cash costs						31,195.00
FIXED NON-CASH COSTS					Unit	Total
Depreciation and Interest						
Machinery and Equipment					acre	\$28.44
Pickup and ATV					acre	72.96
Shop and Machine Shed Land Interest Charge					acre	24.17 600.00
Fotal fixed non-cash costs					acre	\$725.57
Fotal fixed costs						\$1,920.57
Fotal of all costs per acre						\$15,401.15

Table 12HH. Year 1, Blueberries, Organ	ic Marke	t, Hand Harve	est, \$/acre, econ	omic costs an	d returns.	
VARIABLE CASH COSTS	Des	cription	Labor	Machinery	Materials	Total
Weed control						396.00
Hand Weeding	18.00	hours	396.00			
Sawdust Application (every 3rd yr)						147.50
Sawdust	11.00	units			85.00	
Loader Rental					62.50	
Fertilization						922.81
Fertilizer Spreader	1.00	times	4.85	1.96		
Fertigation labor	3.00	hours	66.00			
Fertilizer					850.00	
Irrigation						350.00
Labor	3.00	hours	66.00			
Repairs & Maintenance				9.00		
Water and Power					275.00	
Irrigation System					2,500.00	
Planting Bushes						293.75
Labor	5.00	hours	110.00			
Blueberry Bushes	35	plants			183.75	
Mower	3.00	times	29.11	13.23		42.34
Portable Toilet					75.00	75.00
Pickup				53.98		53.98
ATV				30.72		30.72
Shop and Machine Shed					13.25	13.25
Miscellaneous and Overhead					200.00	200.00
Interest: Operating Capital		6 months			50.51	50.51
Total variable costs			\$671.97	\$108.88	\$4,295.01	\$5,075.85
FIXED CASH COSTS				-	Unit	Total
Compliance					acre	\$1,990.00
Property Insurance					acre	25.00
Property Taxes					acre	30.00
Total fixed cash costs						\$2,045.00
FIXED NON-CASH COSTS					Unit	Total
Depreciation and Interest				-	our	1014
Machinery and Equipment					acre	\$302.40
Pickup and ATV					acre	72.96
Irrigation System					acre	187.00
Shop and Machine Shed					acre	24.17
Land Interest Charge					acre	600.00
Amortized Establishment Costs					acre	924.07
Total fixed non-cash costs						\$2,110.60
Total fixed costs						\$4,155.60
Total of all costs per acre						\$9,231.46

OTAL GROSS INCOME Judernis, fish markt Quantity Intervention Judernis, fish markt Quantity Intervention Judernis, fish States Total States Freierbi- States VARIABLE CASH COSTS Description Labor Machinery Materials Total Freierbi- States States Sta	Table 13HH. Year 2, Blueberries, Organ	nic Marke	t, Hand Harv	est, \$/acre, econ	omic costs an	d returns.		
Total gross income 1,500 33,225 \$2,150 VARLABLE CASH COSTS Description Labor Machinery Materials Total Cost/bit Pruning and Brush Mgmt 25.00 hours \$550.00 \$550.00 \$550.00 \$50.367 Weed control 13.00 hours 286.00 0.191 12.27 0.475 Disease and Insect Control 151.23 86.04 712.27 0.475 Fertilization 9.70 3.91 66.00 172.00 0.115 Fertilization 1.00 hours 22.00 172.00 0.115 Equipment 1.00 hours 22.00 1,390.00 0.927 Iabor 1.00 hours 66.00 100.00 112.00 0.115 Hand-Harvest 0.35 per pound 1,275.00 1.390.00 0.233 1.300.00 0.233 Insigation 3.00 hours 66.00 275.00 1.573 1.573 Installizon Labor 3.00 hours 66.00 1.700.00 1.573 1.573 <t< td=""><td>FOTAL GROSS INCOME</td><td></td><td></td><td>Quantity</td><td>Unit</td><td>\$/Unit</td><td>Total</td><td>Price/lb</td></t<>	FOTAL GROSS INCOME			Quantity	Unit	\$/Unit	Total	Price/lb
V.ARABLE CASH COSTS Description Labor Machinery Materials Total Contr/h Pruning and Brush Mgmt 25.00 hours \$550.00 \$50.00 \$550.00 \$550.00 \$550.00 \$550.00 \$550.00 \$550.00 \$550.00 \$550.00 \$525.00 \$544.00 \$54.00 \$54.00 \$54.00 \$54.00 \$54.00 \$54.00 \$54.00 \$53.23 \$50.00 \$53.98 \$53.98 \$33.98 \$33.60 \$30.253 \$50.25	Blueberries, fresh market			1,500	lbs	\$2.15	3,225	\$2.150
Pruning and Brush Mgmt 25.00 hours \$550.00 \$550.00 \$0.367 Weed control 13.00 hours 286.00 712.27 0.475 Jinebats Sprayer 11.00 times 151.23 86.04 712.27 0.475 Fertilizer Sprayer 11.00 times 9.70 3.91 929.61 0.620 Fertilizer Sprayer 200 times 9.70 3.91 929.61 0.620 Fertilizer Sprayer 1.00 hours 22.00 172.00 0.115 Labor 1.00 hours 22.00 172.00 0.115 Labor 1.00 hours 22.00 1,390.00 0.927 Contract Hand Harvest 0.85 per pound 45.00 50.00 1.390.00 0.233 Labor 30.00 hours 66.00 275.00 2.360.00 1.573 Irigation 30.00 hours 66.00 544.00 354.00 0.033 Irigation 30.00 hours 53.88 2.364.55 83.88 0.356 Packirys Strem 110.00 544.00	Fotal gross income			1,500			\$3,225	\$2.150
Weed control 13.00 hours 286.00 0.191 Hand Weeding 13.00 hours 286.00 712.27 0.475 Air-blat Sprayer 11.00 times 151.23 86.04 712.27 0.475 Fungicides 175.00 750.00 712.27 0.475 0.475 Fertilization 9.70 3.91 850.00 850.00 0.00 0.00 0.00 0.00 0.00 0.115 1.00 0.115 1.00 0.115 1.00 0.00 0.227 0.475 0.115 1.00 0.00 0.227 0.115 1.00 0.00 0.223 1.390.00 0.223 1.390.00 0.223 1.275.00 1.200.00 1.230.00 0.233 1.000 10.00 1.000 1.000 1.000 1.000 0.233 1.000 1.230.00 0.233 1.000 1.230.00 0.233 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 </td <td>VARIABLE CASH COSTS</td> <td>Des</td> <td>cription</td> <td>Labor</td> <td>Machinery</td> <td>Materials</td> <td>Total</td> <td>Cost/lb</td>	VARIABLE CASH COSTS	Des	cription	Labor	Machinery	Materials	Total	Cost/lb
Hand Weeding 13.00 hours 286.00 712.27 0.475 Disease and Insect Control 300.00 175.00 712.27 0.475 Air-blast Sprayer 2.00 times 9.70 3.91 929.61 0.620 Fertilization 9.70 3.91 929.61 0.620 Fertilization 9.70 3.91 172.00 0.115 Labor 1.00 hours 22.00 172.00 0.115 Labor 1.00 hours 22.00 172.00 0.927 Contract Hand Harvest 0.85 per pound 1,275.00 1.390.00 0.927 Contract Hand Harvest 0.85 per pound 45.00 10.00 115.123 Irigation 1.275.00 1.390.00 0.233 1.300.00 0.233 Labor 3.00 hours 66.00 75.00 1.573 1.573 Installation Labor 30.00 hours 66.00 75.00 1.573 Installation Labor 30.00 hours 58.23 26.45 84.68 0.056	Pruning and Brush Mgmt	25.00	hours	\$550.00			\$550.00	\$0.367
Disease and Insect Control 712.27 0.475 Air-bhat Sprayer 11.00 times 151.23 86.04 712.27 0.475 Fungicides 150.00 175.00 175.00 175.00 175.00 Fertilization 9.70 3.91 929.61 0.620 Fertilization 850.00 172.00 0.115 Equipment 150.00 172.00 0.115 Labor 1.00 hours 22.00 172.00 0.115 Equipment 1.275.00 1.390.00 0.927 Contrast Hand Harvest 0.85 per pound 1.275.00 1.390.00 0.233 Installation Labor 3.00 hours 66.00 2.360.00 1.573 Installation Labor 3.00 hours 660.00 10.00 1.573 Installation Labor 3.00 hours 660.00 110.00 1.573 Installation Labor 3.00 hours 660.00 110.00 1.573 Installation Labor 3.00 hours 54.400 54.400 0.636		13.00	hours	286.00			286.00	0.191
Air-blast Sprayer 11.00 times 151.23 86.04 300.00 Fungicides 175.00 175.00 175.00 Fertilizarion 9.70 3.91 929.61 0.620 Fertilizarion 850.00 172.00 0.115 Labor 1.00 hours 66.00 172.00 0.115 Labor 1.00 hours 22.00 172.00 0.115 Labor 1.00 hours 22.00 1.390.00 0.927 Contract Hand Harvest 0.85 per pound 45.00 60.00 1300.00 0.233 Labor 3.00 hours 66.00 9.00 Water and Power 2,360.00 1.573 Installation Labor 3.00 hours 66.00 2,360.00 1.573 Installation Labor 3.0.00 hours 66.00 10.00 173.00 Trellis System 30.00 hours 58.23 26.45 84.68 0.056 Portabe Tollet 75.00 75.00 75.00 75.00 75.00 75.00 75.00 75.00	ç	10.00		200.00			712.27	0 475
Fungicida 300.00 Insecticide 175.00 Fertilization 929.61 0.620 Fertilizer Spreader 2.00 times 9.70 3.91 Fertilizer Spreader 2.00 times 9.70 3.91 Fertilizer Spreader 3.00 hours 66.00 172.00 0.115 Equipment 1.00 hours 22.00 172.00 0.927 Control Labor 0.03 per pound 45.00 970.00 0.927 Contract Hand Harvest 0.85 per pound 45.00 970.00 0.233 Bery Commission Fee 0.04 per pound 60.00 750.00 0.233 Insignion 3.00 hours 66.00 275.00 1.573 Installation Labor 3.00 hours 66.00 1.700.00 10.00 0.73 Intelis System 75.00 75.00 1.573 1.573 1.573 1.573 Installation Labor 3.00 hours 66.00 11.000 0.03 1.000 1.573 Installation Labor 3.00 hours		11.00	times	151.23	86.04		/12.2/	0.475
Inserticides 175.00 Fertilizarion 929.61 0.620 Fertilizarion 3.00 hours 66.00 850.00 Bird Control 172.00 0.115 Labor 1.00 hours 22.00 172.00 0.115 Labor 1.00 hours 22.00 172.00 0.115 Labor 1.00 hours 22.00 1,290.00 0.927 Contract Hand Harvest 0.03 per pound 1,275.00 1,390.00 0.927 Contract Hand Harvest 0.03 per pound 66.00 350.00 0.233 Labor 3.00 hours 66.00 350.00 0.233 Labor 3.00 hours 660.00 10.00 1.573 Installation Labor 30.00 hours 110.00 110.00 0.073 Trellis System 1,700.00 53.98 0.35.98 0.35.98 Portable Toilet 53.98 0.35.98 0.35.98 0.35.98 Probard Machine Shed 30.72 3.72 0.020 Stotal variable costs <td></td> <td>11.00</td> <td>unico</td> <td>101.20</td> <td>00.04</td> <td>300.00</td> <td></td> <td></td>		11.00	unico	101.20	00.04	300.00		
Fertilizer Spreader 2.00 times 9.70 3.91 Fertilizer 3.00 hours 66.00 850.00 Bid Control 1.00 hours 22.00 172.00 0.115 Labor 1.00 hours 22.00 1,390.00 0.927 Contract Hand Harvest 0.85 per pound 45.00 1,390.00 0.927 Contract Hand Harvest 0.04 per pound 66.00 45.00 0.0115 Lada & Haul Barries 0.04 per pound 66.00 50.00 0.233 Labor 3.00 hours 66.00 2,360.00 1.573 Instatiation Labor 30.00 hours 660.00 1700.00 0.363 Trellis 3.00 hours 660.00 1700.00 0.073 Mower 6.00 times 58.23 26.45 53.98 0.036 PM Socuting 5.00 bours 110.00 13.25 13.25 0.020 Pickup 53.98 0.372 53.98 0.036 ATV 30.72 30.72 30.72 30.72 <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	2							
Fertilizer Spreader 2.00 times 9.70 3.91 Fertilizer 3.00 hours 66.00 850.00 Bid Control 1.00 hours 22.00 172.00 0.115 Labor 1.00 hours 22.00 1,390.00 0.927 Contract Hand Harvest 0.85 per pound 45.00 1,390.00 0.927 Contract Hand Harvest 0.04 per pound 66.00 45.00 0.0115 Lada & Haul Barries 0.04 per pound 66.00 50.00 0.233 Labor 3.00 hours 66.00 2,360.00 1.573 Instatiation Labor 30.00 hours 660.00 1700.00 0.363 Trellis 3.00 hours 660.00 1700.00 0.073 Mower 6.00 times 58.23 26.45 53.98 0.036 PM Socuting 5.00 bours 110.00 13.25 13.25 0.020 Pickup 53.98 0.372 53.98 0.036 ATV 30.72 30.72 30.72 30.72 <td>Fertilization</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>929.61</td> <td>0.620</td>	Fertilization						929.61	0.620
Fertigizion labor Fertilizer 3.00 hours 66.00 Fertilizer 850.00 Bird Control Equipment 1.00 hours 22.00 Hand-Harvest 0.85 per pound 1.50.00 Labor 1.390.00 0.927 Contract Hand Harvest 0.85 per pound 45.00 Bery Commission Fee 0.04 per pound 66.00 Registion 3.00 hours 66.00 Repairs & Maintenance 9.00 Water and Power 275.00 Trellis 2,360.00 Itsus Analysis 110.00 Ber Hives 4.00 hives 5.00 hours 110.00 Mower 6.00 times 75.00 75.00 Trellis System 110.00 Be Hives 4.00 hives 5.00 hours 518.23 26.45 84.60 Portable Toilet 53.98 Portable Toilet 53.98 Discellamocus and Overhead 10.20.00 Interest: Operating Capital 6 montha Total variable		2.00	times	9,70	3.91		220101	01020
Fertilizer 850.00 Bid Control 1.00 hours 22.00 172.00 0.115 Equipment 1.00 hours 22.00 150.00 1,390.00 0.927 Hand-Harvest 0.85 per pound 1,275.00 1,390.00 0.927 Contract Hand Harvest 0.03 per pound 45.00 0 10.00 10.00 10.00 10.00 10.00 0.233 10.00 0.01 10.00 0.01 0.0233 10.00 0.233 10.00 0.233 10.00 0.01 10.00 0.233 10.00 0.233 10.00 0.01 10.00 0.233 10.00 0.01 10.00 0.01 10.00 0.01 10.00 0.01 10.00 0.01 10.00 0.01 10.00 0.01 10.00 0.01 10.00 0.01 10.00 0.01 10.00 0.01 10.00 0.01 10.00 0.01 10.00 10.00 0.01 10.00 10.01 10.00 0.01 10.01 10.00 0.01<		3.00	hours					
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Equipment 150.00 Hand-Harvest 0.85 per pound 1,275.00 1,390.00 0.927 Contract Hand Harvest 0.85 per pound 60.00 45.00 60.00 Berry Commission Fee 0.04 per pound 66.00 350.00 0.233 Labor 3.00 hours 66.00 9.00 275.00 1.700.00 Repairs & Maintenance 9.00 275.00 1.700.00 10.00 1.700.00 Bee Hives 4.00 hives 544.00 544.00 544.00 0.050 Trellis System 5.00 hours 58.23 26.45 84.68 0.056 Pickup 53.98 53.98 53.98 0.358 0.036 Pickup 53.98 53.98 53.98 0.036 10.00 0.073 Shop and Machine Shed 13.25 13.25 0.009 13.25 0.009 13.25 0.009 Shop and Machine Shed 12.323 123.23 0.082 23.535.00 \$2.353 FixED CASH COSTS Vinit	Bird Control						172.00	0.115
Hand-Harvest Contract Hand Harvest Load & Haul Berris 0.85 per pound 0.35 per pound 1,275.00 1,390.00 0.927 Load & Haul Berris 0.03 per pound 45.00 60.00 10.00	Labor	1.00	hours	22.00				
Contract Hand Harvest 0.85 per pound 1,275.00 1,000 1,000 Bery Commission Fee 0.04 per pound 45.00 60.00 Tissue Analysis 0.04 per pound 66.00 350.00 0.233 Labor 3.00 hours 66.00 275.00 1.573 Installation Labor 30.00 hours 660.00 1,700.00 1.573 Installation Labor 30.00 hours 660.00 1,700.00 864.00 0.468 Ber Hives 4.00 hives 544.00 544.00 0.063 10.00 0.075 Mower 6.00 times 58.23 26.45 78.46.88 0.056 Portable Toilet 75.00 75.00 0.000 0.020 Pickup 33.72 0.020 0.020.00 123.25 0.020 Miseellancous and Overhead 123.23 123.23 0.082 Fotal variable costs \$3,254.16 \$210.10 \$4,520.48 \$7,984.74 \$5.323 FIED OASH COSTS Vinit Total Cost/lb acree \$3.0.00	Equipment					150.00		
Load & Haul Berries 0.03 per pound 45.00 Berry Commission Fee 0.04 per pound 60.00 Trissue Analysis	Hand-Harvest						1,390.00	0.927
Berry Commission Fee Tissue Analysis 0.04 per pound 60.00 Irigation 350.00 0.233 Labor 3.00 hours 66.00 Repairs & Maintenance 9.00 275.00 Water and Power 275.00 2,360.00 1.573 Installation Labor 30.00 hours 660.00 1.573 Trellis System 1,700.00 10.00 0.0363 Bee Hives 4.00 hives 544.00 544.00 0.363 PM Scouting 5.00 hours 110.00 0.073 Mower 6.00 times 58.23 26.45 84.68 0.056 Portable Toilet 75.00 75.00 0.050 113.25 0.036 ATV 30.72 30.72 30.72 0.020 0.000 133 Interest: Operating Capital 6 months 5123.25 0.082 53.233 0.822 Fotal variable costs \$3,254.16 \$210.10 \$4,520.48 \$7,984.74 \$5.323 FixDe DASH COSTS	Contract Hand Harvest	0.85	per pound	1,275.00				
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Labor 3.00 hours 66.00 Repairs & Maintenance 9.00 Water and Power 275.00 Trellis 2,360.00 1.573 Installation Labor 30.00 hours 660.00 Trellis System 1,700.00 100.00 0.0363 Bee Hives 4.00 hives 58.23 26.45 84.68 0.056 Portable Toilet 75.00 75.00 0.050 100.00 0.073 Mower 6.00 times 58.23 26.45 84.68 0.056 Portable Toilet 75.00 75.00 0.050 112.00 0.020 Shop and Machine Shed 13.25 13.25 0.032 0.020 0.000 0.033 Interest: Operating Capital 6 months 53,254.16 \$210.10 \$4,520.48 \$7,984.74 \$5.323 FixED CASH COSTS Unit Total Cost/lb acre 33.00 0.0213 Compliance \$3,535.00 \$2.357 35.500 \$2.357 \$3,535.00 \$2.357	Tissue Analysis					10.00		
Repairs & Maintenance 9.00 Water and Power 275.00 Trellis 2,360.00 1.573 Installation Labor 30.00 hours 660.00 1,700.00 Bee Hives 4.00 hives 544.00 544.00 0.363 IPM Scouting 5.00 hours 110.00 110.00 0.073 Mower 6.00 times 58.23 26.45 84.68 0.056 Portable Toilet 75.00 75.00 0.000 200.00 200.00 1.036 ATV 53.98 53.98 53.98 0.036 ATV 30.72 0.020 Shop and Machine Shed 13.25 13.25 0.323 0.082 0.001 200.00 200.00 0.133 Interest: Operating Capital 6 months 53,254.16 \$210.10 \$4,520.48 \$7,984.74 \$5.323 FOED CASH COSTS Unit Total Cost/lb 33,535.00 \$2.350 Compliance \$3,053.00 \$2.351 \$3,535.00 \$2.351 \$3,535.00	Irrigation						350.00	0.233
Water and Power 275.00 Trellis 2,360.00 1.573 Installation Labor 30.00 hours 660.00 1.700.00 Bee Hives 4.00 hives 544.00 0.363 IPM Scouting 5.00 hours 110.00 110.00 0.073 Mower 6.00 times 58.23 26.45 84.68 0.050 Portable Toilet 75.00 75.00 0.050 110.00 200.00 200.00 200.00 200.00 200.00 200.00 200.00 200.00 13.25 0.082 Fotal variable costs \$3,254.16 \$210.10 \$4,520.48 \$7,984.74 \$5.323 FIXED CASH COSTS Unit Total Cost/lb acre 30.00 20.00		3.00	hours	66.00				
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Bee Hives 4.00 hives 544.00 544.00 0.363 IPM Scouting 5.00 hours 110.00 110.00 0.073 Mower 6.00 times 58.23 26.45 84.68 0.056 Portable Toilet 75.00 75.00 0.050 93.98 53.98 0.036 Pickup 53.98 53.98 0.036 72 0.020 0.009 Miscellaneous and Overhead 13.25 13.25 0.002 0.009 0.133 Interest: Operating Capital 6 months \$3,254.16 \$210.10 \$4,520.48 \$7,984.74 \$5.323 Fotal variable costs \$3,254.16 \$210.10 \$4,520.48 \$7,984.74 \$5.323 FixED CASH COSTS Unit Total Cost/lb acre \$3,480.00 \$2.320 Property Taxes unit Total Cost/lb acre \$3,535.00 \$2.357 FIXED NON-CASH COSTS Unit Total Cost/lb acre \$3,600 \$0.213		30.00	hours	660.00				
IPM Scouting 5.00 hours 110.00 110.00 0.073 Mower 6.00 times 58.23 26.45 84.68 0.056 Portable Toilet 75.00 75.00 0.050 Pickup 53.98 53.98 0.036 ATV 30.72 30.72 0.020 Shop and Machine Shed 13.25 13.25 0.009 Miscellaneous and Overhead 123.23 123.23 0.082 Fotal variable costs \$3,254.16 \$210.10 \$4,520.48 \$7,984.74 \$5.323 FIXED CASH COSTS Unit Total Cost/lb acre \$3,480.00 \$2.320 Compliance 25.00 0.010 \$2.357 \$3,535.00 \$2.357 FIXED NON-CASH COSTS Unit Total Cost/lb acre \$3,000 \$0.201 Property Isaxes unit Total Cost/lb acre \$3,000 \$2.357 FIXED NON-CASH COSTS Unit Total Cost/lb acre \$3,000 \$2.357 FIXED NON-CASH COSTS acre \$32.001 \$0.213 acre </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
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FIXED CASH COSTSUnitTotalCost/lbComplianceacre\$3,480.00\$2.320Property Insuranceacre25.000.017Property Taxesacre30.000.020Fotal fixed cash costs\$3,535.00\$2.357FIXED NON-CASH COSTSUnitTotalCost/lbDepreciation and Interestacre\$320.01\$0.213Machinery and Equipmentacre\$320.01\$0.213Pickup and ATVacre\$320.01\$0.213Shop and Machine Shedacre286.410.191Shop and Machine Shedacre24.170.016Land Interest Chargeacre600.000.400Interest on Prior Years' Establishment Costsacre1,477.960.985Fotal fixed non-cash costs\$2,781.51\$1.854Total of all costs per acre\$14,301.26\$9.534	Interest: Operating Capital		6 months			123.23	123.23	0.082
Compliance acre \$3,480.00 \$2.320 Property Insurance acre 25.00 0.017 Property Taxes acre 30.00 0.020 Fotal fixed cash costs \$3,535.00 \$2.357 FIXED NON-CASH COSTS Unit Total Cost/lb Depreciation and Interest acre \$320.01 \$0.213 Machinery and Equipment acre 72.96 0.049 Irrigation and Trellis Systems acre 286.41 0.191 Shop and Machine Shed acre 24.17 0.016 Land Interest Charge acre 600.00 0.400 Interest on Prior Years' Establishment Costs acre 1,477.96 0.985 Fotal fixed non-cash costs \$2,781.51 \$1.854 Fotal fixed costs \$6,316.51 \$4.211 Fotal of all costs per acre \$14,301.26 \$9.534	Fotal variable costs			\$3,254.16	\$210.10	\$4,520.48	\$7,984.74	\$5.323
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FIXED NON-CASH COSTSUnitTotalCost/lbDepreciation and InterestMachinery and EquipmentPickup and ATVPickup and ATVIrrigation and Trellis SystemsShop and Machine ShedLand Interest ChargeInterest ChargeInterest on Prior Years' Establishment CostsFotal fixed non-cash costsFotal of all costs per acreS14,301.26\$9.534	1 2					acre		
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Machinery and Equipment acre \$320.01 \$0.213 Pickup and ATV acre 72.96 0.049 Irrigation and Trellis Systems acre 286.41 0.191 Shop and Machine Shed acre 24.17 0.016 Land Interest Charge acre 600.00 0.400 Interest on Prior Years' Establishment Costs acre 1,477.96 0.985 Fotal fixed non-cash costs \$2,781.51 \$1.854 Fotal of all costs per acre \$14,301.26 \$9.534					-	Unit	Total	Cost/lb
Pickup and ATV acre 72.96 0.049 Irrigation and Trellis Systems acre 286.41 0.191 Shop and Machine Shed acre 24.17 0.016 Land Interest Charge acre 600.00 0.400 Interest on Prior Years' Establishment Costs acre 1,477.96 0.985 Fotal fixed non-cash costs \$2,781.51 \$1.854 Fotal of all costs per acre \$14,301.26 \$9.534	-					0.000	\$320.01	\$0.213
Irrigation and Trellis Systems acre 286.41 0.191 Shop and Machine Shed acre 24.17 0.016 Land Interest Charge acre 600.00 0.400 Interest on Prior Years' Establishment Costs acre 1,477.96 0.985 Fotal fixed non-cash costs \$2,781.51 \$1.854 Fotal of all costs per acre \$14,301.26 \$9.534								
Shop and Machine Shed acre 24.17 0.016 Land Interest Charge acre 600.00 0.400 Interest on Prior Years' Establishment Costs acre 1,477.96 0.985 Fotal fixed non-cash costs \$2,781.51 \$1.854 Fotal fixed costs \$6,316.51 \$4.211	-							
Interest on Prior Years' Establishment Costs acre 1,477.96 0.985 Fotal fixed non-cash costs \$2,781.51 \$1.854 Fotal fixed costs \$6,316.51 \$4.211 Fotal of all costs per acre \$14,301.26 \$9.534								
Fotal fixed non-cash costs \$2,781.51 \$1.854 Fotal fixed costs \$6,316.51 \$4.211 Fotal of all costs per acre \$14,301.26 \$9.534	-					acre		
Fotal fixed costs \$6,316.51 \$4.211 Fotal of all costs per acre \$14,301.26 \$9.534		t Costs				acre		
Fotal of all costs per acre \$14,301.26 \$9.534							-	
	Fotal fixed costs						\$6,316.51	\$4.211
Net projected returns -\$11,076.26 -\$7.384	Fotal of all costs per acre						\$14,301.26	\$9.534
	Net projected returns						-\$11,076.26	-\$7.384

Fable 14HH. Year 3, Blueberries, Orga	anie Marke	t, Hand Harv	est, \$/acre, econ	omic costs an	d returns.		
FOTAL GROSS INCOME			Quantity	Unit	\$/Unit	Total	Price/lb
Blueberries, fresh market			3,600	lbs	\$2.15	7,740	\$2.150
Fotal gross income			3,600		-	\$7,740	\$2.150
VARIABLE CASH COSTS	Des	cription	Labor	Machinery	Materials	Total	Cost/lb
Pruning and Brush Mgmt	40.00		\$880.00			\$880.00	\$0.244
Weed control Hand Weeding	13.00	hours	286.00			286.00	0.079
Disease and Insect Control						712.27	0.198
Air-blast Sprayer	11.00	times	151.23	86.04			
Fungicides Insecticides					300.00 175.00		
Fertilization					1/5.00	929.61	0.050
Fertilizer Spreader	2.00	times	9.70	3.91		929.61	0.258
Fertigation labor		hours	66.00				
Fertilizer					850.00		
Bird Control						172.00	0.048
Labor	1.00	hours	22.00				
Equipment					150.00		
Hand-Harvest Contract Hand Harvest	0.85	per pound	3,060.00			3,322.00	0.923
Load & Haul Berries		per pound per pound	5,000.00		108.00		
Berry Commission Fee		per pound			144.00		
Tissue Analysis					10.00		
Irrigation						350.00	0.097
Labor	3.00	hours	66.00				
Repairs & Maintenance Water and Power				9.00	275.00		
					2/5.00	20.00	0.011
Trellis Labor	1.00	hours	22.00			39.00	0.011
Repairs & Maintenance	1.00	nouis	22.00		17.00		
Bee Hives	4.00	hives			544.00	544.00	0.151
IPM Scouting		hours	110.00		211100	110.00	0.031
Mower	6.00	times	58.23	26.45		84.68	0.024
Portable Toilet					75.00	75.00	0.021
Pickup ATV				53.98 30.72		53.98 30.72	0.015
Shop and Machine Shed				30.72	13.25	13.25	0.009
Miscellaneous and Overhead					200.00	200.00	0.056
Interest: Operating Capital		6 months			150.33	150.33	0.042
Total variable costs			\$4,445.16	\$210.10	\$3,011.58	\$7,666.84	\$2.130
FIXED CASH COSTS				-	Unit	Total	Cost/lb
Compliance Property Insurance					acre	\$3,480.00 25.00	\$0.967 0.007
Property Taxes					acre	30.00	0.008
Total fixed cash costs						\$3,535.00	\$0.982
FIXED NON-CASH COSTS				-	Unit	Total	Cost/lb
Depreciation and Interest Machinery and Equipment					acre	\$217.25	\$0.060
Pickup and ATV					acre	72.96	0.020
Irrigation and Trellis Systems					acre	286.41	0.080
Shop and Machine Shed					acre	24.17	0.007
Land Interest Charge	et Conto				acre	600.00	0.167
Interest on Prior Years' Establishmer Fotal fixed non-cash costs	n Costs				acre	2,142.53 \$3,343.32	0.595 \$0.929
Fotal fixed costs						\$6,878.32	\$1.911
Fotal of all costs per acre Net projected returns						\$14,545.17 -\$6,805.17	\$4.040 -\$1.890

Table 15HH. Year 4, Blueberries, Organ	ic Marke	t, Hand Harv				T1	D.1
TOTAL GROSS INCOME			Quantity	Unit	\$/Unit	Total	Price/lb
Blueberries, fresh market			7,200	lbs	\$2.15	15,480	\$2.150
Total gross income			7,200			\$15,480	\$2.150
VARIABLE CASH COSTS	Des	cription	Labor	Machinery	Materials	Total	Cost/lb
Pruning and Brush Mgmt	60.00	hours	\$1,320.00			\$1,320.00	\$0.183
Soil sample (every 4th yr)					3.50	3.50	0.000
Sawdust Application (every 3rd yr)						147.50	0.020
Sawdust	11.00	units			85.00		
Loader Rental					62.50		
Weed control						286.00	0.040
Hand Weeding	13.00	hours	286.00				
Disease and Insect Control						712.27	0.099
Air-blast Sprayer	11.00	times	151.23	86.04			
Fungicides					300.00		
Insecticides					175.00		
Fertilization						929.61	0.129
Fertilizer Spreader		times	9.70	3.91			
Fertigation labor Fertilizer	3.00	hours	66.00		850.00		
1 4111124					850.00		
Bird Control						172.00	0.024
Labor	1.00	hours	22.00		150.00		
Equipment					150.00		_
Hand-Harvest	0.05		c 120 00			6,634.00	0.921
Contract Hand Harvest Load & Haul Berries		per pound	6,120.00		216.00		
Berry Commission Fee		per pound per pound			216.00		
Tissue Analysis	0.04	per pound			10.00		
Irrigation						350.00	0.049
Labor	3.00	hours	66.00			330.00	0.049
Repairs & Maintenance	5.00	nouis	00.00	9.00			
Water and Power				5100	275.00		
Trellis						39.00	0.005
Labor	1.00	hours	22.00			29.00	0.000
Repairs & Maintenance					17.00		
Bee Hives	4 00	hives			544.00	544.00	0.076
IPM Scouting		hours	110.00		244.00	110.00	0.015
Mower	6.00	times	58.23	26.45		84.68	0.012
Portable Toilet					75.00	75.00	0.010
Pickup				53.98		53.98	0.007
ATV				30.72		30.72	0.004
Shop and Machine Shed					13.25	13.25	0.002
Miscellaneous and Overhead		6 months			200.00 228.39	200.00	0.028
Interest: Operating Capital Total variable costs		6 months	\$7,945.16	\$210.10	\$3,492.64	228.39 \$11,647.90	0.032 \$1.618
Total valiable costs			\$7,945.10	\$210.10	\$3,492.04	311,047.50	\$1.010
FIXED CASH COSTS					Unit	Total	Cost/lb
Compliance				-	acre	\$3,480.00	\$0.483
Property Insurance					acre	25.00	0.003
Property Taxes					acre	30.00	0.004
Total fixed cash costs						\$3,535.00	\$0.491
FIXED NON-CASH COSTS					Unit	Total	Cost/lb
Depreciation and Interest				-	ont	Total	003010
Machinery and Equipment					acre	\$690.81	\$0.096
Pickup and ATV					acre	72.96	0.010
Irrigation and Trellis Systems					acre	286.41	0.040
Shop and Machine Shed					acre	24.17	0.003
Land Interest Charge					acre	600.00	0.083
Amortized Establishment Costs					acre	2,550.84	0.354
Total fixed non-cash costs						\$4,225.20	\$0.587
Total fixed costs						\$7,760.20	\$1.078
Total of all easts a strategy						\$10,408,10	\$3.000
Total of all costs per acre Net projected returns						\$19,408.10 -\$3,928.10	\$2.696 -\$0.546
and projected returns						-00,928.10	-30.340

Table 16HH. Year 5, Blueberries, Organ TOTAL GROSS INCOME			Quantity	Unit	\$/Unit	Total	Price/It
Blueberries, fresh market			10,800	lbs	\$2.15	23,220	\$2.150
Total gross income			10,800	105	-	\$23,220	\$2.150
VARIABLE CASH COSTS	Des	cription	Labor	Machinery	Materials	Total	Cost/ll
Pruning and Brush Mgmt	85.00	hours	\$1,870.00			\$1,870.00	\$0.173
Weed control						286.00	0.026
Hand Weeding	13.00	hours	286.00				
Disease and Insect Control						712.27	0.066
Air-blast Sprayer	11.00	times	151.23	86.04		/12.2/	0.000
Fungicides	11.00		101.20	00.04	300.00		
Insecticides					175.00		
Fertilization						929.61	0.08
Fertilizer Spreader	2.00	times	9,70	3.91		929.01	0.000
Fertigation labor		hours	66.00	5.51			
Fertilizer					850.00		
Bird Control						172.00	0.016
Labor	1.00	hours	22.00			1/2.00	0.010
Equipment	1.00	110413	22.00		150.00		
Hand-Harvest						0.046.00	0.921
Contract Hand Harvest	0.95	per pound	9,180.00			9,946.00	0.921
Load & Haul Berries		per pound per pound	9,180.00		324.00		
Berry Commission Fee		per pound			432.00		
Tissue Analysis	0.04	per pound			10.00		
Irrigation						350.00	0.032
Labor	3.00	hours	66.00			350.00	0.05
Repairs & Maintenance	3.00	nours	00.00	9.00			
Water and Power				5.00	275.00		
Trellis					270.00	20.00	0.00
Labor	1.00	hours	22.00			39.00	0.00
Repairs & Maintenance	1.00	nours	22.00		17.00		
Bee Hives		hives	110.00		544.00	544.00	0.050
IPM Scouting Mower		hours	110.00 58.23	26.45		110.00	0.010
Portable Toilet	6.00	times	38.23	26.45	75.00	84.68 75.00	0.00
Pickup				53.98	75.00	53.98	0.00
ATV				30.72		30.72	0.003
Shop and Machine Shed					13.25	13.25	0.001
Miscellaneous and Overhead					200.00	200.00	0.019
Interest: Operating Capital		6 months			302.61	302.61	0.028
Total variable costs			\$11,555.16	\$210.10	\$3,667.86	\$15,433.12	\$1.429
FIXED CASH COSTS				-	Unit	Total	Cost/Il
Compliance					acre	\$3,480.00	\$0.322
Property Insurance					acre	25.00	0.002
Property Taxes Total fixed cash costs					acre	30.00 \$3,535.00	0.003 \$0.323
Total lixed cash costs						25,555.00	30.52
FIXED NON-CASH COSTS					Unit	Total	Cost/ll
Depreciation and Interest				-			
Machinery and Equipment					acre	\$690.81	\$0.064
Pickup and ATV					acre	72.96	0.002
Irrigation and Trellis Systems					acre	286.41	0.023
Shop and Machine Shed					acre	24.17	0.002
Land Interest Charge	_				acre	600.00	0.056
Interest on Prior Years' Establishment	Costs				acre	2,786.53	0.25
Total fixed non-cash costs						\$4,460.88	\$0.413
Total fixed costs						\$7,995.88	\$0.74
Total of all costs per acre						\$23,429.01	\$2.169
i otali or all costs per acre						020,429.01	QZ, 10;

Table 17HH. Year 6, Blueberries, Orga	nic Marke	t, Hand Har	/est, \$/acre, econ	omic costs an	d returns.		
TOTAL GROSS INCOME			Quantity	Unit	\$/Unit	Total	Price/lb
Blueberries, fresh market			14,400	lbs	\$2.15	30,960	\$2.150
Total gross income			14,400			\$30,960	\$2.150
VARIABLE CASH COSTS	Des	cription	Labor	Machinery	Materials	Total	Cost/lb
Pruning and Brush Mgmt	100.00		\$2,200.00	machinery	materials	\$2,200.00	\$0.153
Weed control						286.00	0.020
Hand Weeding	13.00	hours	286.00				
Disease and Insect Control						1,073.84	0.075
Air-blast Sprayer	12.00	times	164.98	93.86			
Fungicides Insecticides					450.00		
					365.00		
Fertilization Fertilizer Spreader	2.00	times	9.70	3.91		1,129.61	0.078
Fertigation labor		hours	66.00	5.91			
Fertilizer	5.00	nours	00.00		1,050.00		
Bird Control						172.00	0.012
Labor	1.00	hours	22.00				
Equipment					150.00		
Hand-Harvest						13,258.00	0.921
Contract Hand Harvest		per pound	12,240.00				
Load & Haul Berries		per pound			432.00		
Berry Commission Fee	0.04	per pound			576.00		
Tissue Analysis					10.00		
Irrigation	2.00		<i>cc</i> 00			350.00	0.024
Labor Repairs & Maintenance	3.00	hours	66.00	9.00			
Water and Power				9.00	275.00		
Trellis						39.00	0.003
Labor	1.00	hours	22.00			59.00	0.005
Repairs & Maintenance					17.00		
Bee Hives	4.00	hives			544.00	544.00	0.038
IPM Scouting	5.00	hours	110.00			110.00	0.008
Mower	6.00	times	58.23	26.45		84.68	0.006
Portable Toilet					75.00	75.00	0.005
Pickup				53.98		53.98	0.004
ATV Shop and Machine Shed				30.72	13.25	30.72 13.25	0.002
Miscellaneous and Overhead					200.00	200.00	0.001
Interest: Operating Capital		6 months			386.68	386.68	0.027
Total variable costs			\$14,958.91	\$217.92	\$4,543.93	\$19,720.77	\$1.369
FIXED CASH COSTS					Unit	Total	Cost/lb
Compliance				-	acre	\$3,480.00	Cost/lb \$0.242
Property Insurance					acre	25.00	0.002
Property Taxes					acre	30.00	0.002
Total fixed cash costs						\$3,535.00	\$0.245
FIXED NON-CASH COSTS					Unit	Total	Cost/lb
Depreciation and Interest				-	Unit	1 (110)	000010
Machinery and Equipment					acre	\$735.12	\$0.051
Pickup and ATV					acre	72.96	0.005
Irrigation and Trellis Systems					acre	286.41	0.020
Shop and Machine Shed					acre	24.17	0.002
Land Interest Charge Interest on Prior Years' Establishmer	t Costs				acre	600.00 2,799.07	0.042 0.194
Total fixed non-cash costs	iii Costs				acre	\$4,517.73	\$0.314
Total fixed costs						\$8,052.73	\$0.559
Total of all costs per acre						\$27,773.49	\$1.929
Net projected returns						\$3,186.51	\$0.221

Table 18HH. Full production, Blueberr	ies, Organ	ic Market, H	Hand Harvest, \$/a	acre, economic	costs and re	tums.	
TOTAL GROSS INCOME			Quantity	Unit	\$/Unit	Total	Price/lb
Blueberries, fresh market			16,200	lbs	\$2.15	34,830	\$2.150
Blueberries, processed market Total gross income			1,800 18,000	lbs	1.20	2,160 \$36,990	<u>1.200</u> \$2.055
VARIABLE CASH COSTS	Des	cription	Labor	Machinery	Materials	Total	Cost/lb
Pruning and Brush Mgmt	100.00	hours	\$2,200.00		3,50	\$2,200.00 3.50	\$0.122 0.000
Soil sample (every 4th yr) Sawdust Application (every 3rd yr)					3.30	49.17	0.000
Sawdust Application (every 5rd yr)	3.67	units			28.33	49.17	0.005
Loader Rental					20.83		
Weed control Hand Weeding	13.00	hours	286.00			286.00	0.016
Disease and Insect Control						1,073.84	0.060
Air-blast Sprayer	12.00	times	164.98	93.86			
Fungicides Insecticides					450.00 365.00		
Fertilization					202.00	1,129.61	0.063
Fertilizer Spreader	2.00	times	9.70	3.91		-,	
Fertigation labor Fertilizer	3.00	hours	66.00		1.050.00		
Bird Control					1,050.00	172.00	0.010
Labor	1.00	hours	22.00			1/2.00	0.010
Equipment					150.00		
Hand-Harvest						15,328.00	0.852
Contract Hand Harvest Contract Machine Harvest		per pound	13,770.00		200 00		
Load & Haul Berries		per pound per pound			288.00 540.00		
Berry Commission Fee		per pound per pound			720.00		
Tissue Analysis	0.01	per pound			10.00		
Irrigation						350.00	0.019
Labor	3.00	hours	66.00				
Repairs & Maintenance Water and Power				9.00	275.00		
Trellis					270.00	39.00	0.002
Labor	1.00	hours	22.00			07100	0.002
Repairs & Maintenance					17.00		
Bee Hives		hives			544.00	544.00	0.030
IPM Scouting		hours	110.00			110.00	0.006
Mower Portable Toilet	6.00	times	58.23	26.45	76.00	84.68 75.00	0.005
Pickup				53.98	75.00	53.98	0.004
ATV				30.72		30.72	0.002
Shop and Machine Shed					13.25	13.25	0.001
Miscellaneous and Overhead					200.00	200.00	0.011
Interest: Operating Capital Total variable costs		6 months	¢16 400 01	6317.03	429.14	429.14	0.024
i otai variabie costs			\$16,488.91	\$217.92	\$5,179.05	\$21,885.89	\$1.216
FIXED CASH COSTS				-	Unit	Total	Cost/lb
Compliance Property Incorpore					acre	\$3,480.00	\$0.193
Property Insurance Property Taxes					acre	25.00 30.00	0.001 0.002
Total fixed cash costs						\$3,535.00	\$0.196
FIXED NON-CASH COSTS					Unit	Total	Cost/lb
Depreciation and Interest				-			
Machinery and Equipment					acre	\$735.12	\$0.041
Pickup and ATV Irrigation and Trellis Systems					acre	72.96 286.41	0.004 0.016
Shop and Machine Shed					acre	280.41	0.001
Land Interest Charge					acre	600.00	0.033
Amortized Establishment Costs					acre	4,308.54	0.239
Total fixed non-cash costs					-	\$6,027.20	\$0.335
Total fixed costs						\$9,562.20	\$0.531
Total of all costs per acre						\$31,448.08	\$1.747
Net projected returns						\$5,541.92	\$0.308

APPENDIX B

Enterprise Budgets: Organic Market, Machine-Harvested Blueberries in the Willamette Valley, Oregon

Table 13MH. Year 0, Blueberries, Organic Market, Machine Harvest, \$/acre, economic costs and returns. VARIABLE CASH COSTS Description Labor Machinery Materials Soil sample (every 4th yr) \$8.00 Land Preparation, Custom Operations \$2.00 times \$50.00	Total \$8.00
Soil sample (every 4th yr) \$8.00 Land Preparation, Custom Operations	\$8.00
Rip, Plow, Drag, and Roll 2.00 times 50.00	
Rip, Plow, Drag, and Roll 2.00 times 50.00	50.00
	50.00
Sawdust Application (every 3rd yr)	1,677.50
Sawdust 19.00 units 1,615.00	
Loader Rental 62.50	
Fertilization	856.81
Fertilizer Spreader 1.00 times 4.85 1.96	
Fertilizer 850.00	
Incorporate Fertilizer	15.00
Rototiller, Rental 15.00	
Pre-plant	544.00
Mark Field 2.00 hours \$44.00	544.00
Shape Beds, Custom 500.00	
Planting Bushes	8,723.00
Labor 50.00 hours 1,100.00	
Blueberry Bushes 1,452 plants 7,623.00	
Post-plant	55.00
Drag Field 12.00 8.00	
Seed Cover Crop 35.00	
Irrigation	989.00
Labor 32.00 hours 704.00	
Handline Rental 10.00	
Water and Power 275.00	
	53.98
	30.72
Shop and Machine Shed 13.25 Miscellaneous and Overhead 200.00	13.25
Miscellaneous and Overhead 200.00 Interest: Operating Capital 6 months 264.33	200.00
	264.33
Total variable costs \$1,864.85 \$94.66 \$11,521.08	\$13,480.58
FIXED CASH COSTS Unit	Total
Compliance acre	\$1,990.00
Property Insurance acre	25.00
Property Taxes acre_	30.00
Total fixed cash costs	\$2,045.00
FIXED NON-CASH COSTS Unit	Total
Depreciation and Interest	1010
Machinery and Equipment acre	\$28.44
Pickup and ATV acre	72.96
Shop and Machine Shed acre	24.17
Land Interest Charge acre_	600.00
Total fixed non-cash costs	\$725.57
Total fixed costs	\$2,770.57
Total of all costs per acre	\$16,251.15

Table 14MH. Year 1, Blueberries, Orga	nic Marke	rt, Machine H	arvest, \$/acre, (economic costs	s and returns.	
VARIABLE CASH COSTS		cription	Labor	Machinery	Materials	Total
Weed control						396.00
Hand Weeding	18.00	hours	396.00			
Sawdust Application (every 3rd yr)						147.50
Sawdust	11.00	units			85.00	
Loader Rental					62.50	
Fertilization						922.81
Fertilizer Spreader	1.00	times	4.85	1.96		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Fertigation labor	3.00	hours	66.00			
Fertilizer					850.00	
Irrigation						350.00
Labor	3.00	hours	66.00			
Repairs & Maintenance				9.00		
Water and Power					275.00	
Irrigation System					2,500.00	
Planting Bushes						293.75
Labor	5.00	hours	110.00			
Blueberry Bushes	35	plants			183.75	
Mower	3.00	times	29.11	13.23		42.34
Portable Toilet					75.00	75.00
Pickup				53.98		53.98
ATV				30.72		30.72
Shop and Machine Shed					13.25	13.25
Miscellaneous and Overhead					200.00	200.00
Interest: Operating Capital		6 months			50.51	50.51
Total variable costs			\$671.97	\$108.88	\$4,295.01	\$5,075.85
FIXED CASH COSTS				_	Unit	Total
Compliance					acre	\$2,090.00
Property Insurance					acre	25.00
Property Taxes					acre	30.00
Total fixed cash costs						\$2,145.00
FIXED NON-CASH COSTS					Unit	Total
Depreciation and Interest				-		
Machinery and Equipment					acre	\$302.40
Pickup and ATV					acre	72.96
Irrigation System					acre	187.00
Shop and Machine Shed					acre	24.17
Land Interest Charge					acre	600.00
Amortized Establishment Costs					acre	975.07
Total fixed non-cash costs						\$2,161.60
Total fixed costs						\$4,306.60
Total of all costs per acre						\$9,382.46

Table 15MH. Year 2, Blueberries, Organi TOTAL GROSS INCOME	c Mark	a, Machine H	Quantity	Unit	s and returns \$/Unit	Total	Price/lb
Blueberries, fresh market			Quantity 1,500	lbs	\$/Unit \$2.15	1 otal 3,225	\$2.150
Total gross income			1,500	105	32.15	\$3,225	\$2.150 \$2.150
roun gross income			1,500			00,220	92.150
VARIABLE CASH COSTS	Des	cription	Labor	Machinery	Materials	Total	Cost/lb
Pruning and Brush Mgmt	25.00	hours	\$550.00			\$550.00	\$0.367
Weed control						286.00	0.191
Hand Weeding	13.00	hours	286.00				
Disease and Insect Control						712.27	0.475
Air-blast Sprayer	11.00	times	151.23	86.04			
Fungicides					300.00		
Insecticides					175.00		
Fertilization						929.61	0.620
Fertilizer Spreader		times	9.70	3.91			
Fertigation labor	3.00	hours	66.00				
Fertilizer					850.00		
Bird Control						172.00	0.115
Labor	1.00	hours	22.00		150.00		
Equipment					150.00		
Machine-Harvest	0.95		1 225 00			1,390.00	0.927
Contract Hand Harvest Load & Haul Berries		per pound per pound	1,275.00		45.00		
Berry Commission Fee		per pound per pound			43.00		
Tissue Analysis	0.04	per pound			10.00		
Irrigation						350.00	0.233
Labor	3.00	hours	66.00			556.66	0.255
Repairs & Maintenance	0.00		00100	9.00			
Water and Power					275.00		
Trellis						2,360.00	1.573
Installation Labor	30.00	hours	660.00			_,	
Trellis System					1,700.00		
Bee Hives	4.00	hives			544.00	544.00	0.363
IPM Scouting	5.00	hours	110.00			110.00	0.073
Mower	6.00	times	58.23	26.45		84.68	0.056
Portable Toilet					75.00	75.00	0.050
Pickup				53.98		53.98	0.036
ATV Shee on the Alice Sheet				30.72	12.05	30.72	0.020
Shop and Machine Shed Miscellaneous and Overhead					13.25 200.00	13.25 200.00	0.009
Interest: Operating Capital		6 months			123.23	123.23	0.082
Total variable costs		0 1101110	\$3,254.16	\$210.10	\$4,520.48	\$7,984.74	\$5.323
FIXED CASH COSTS				-	Unit	Total	Cost/lb
Compliance					acre	\$3,480.00	\$2.320
Property Insurance					acre	25.00	0.017
Property Taxes Total fixed cash costs					acre	30.00	0.020
I otal fixed cash costs						\$3,535.00	\$2.357
FIXED NON-CASH COSTS					Unit	Total	Cost/lb
Depreciation and Interest				-	areas to	- 17144	
Machinery and Equipment					acre	\$320.01	\$0.213
Pickup and ATV					acre	72.96	0.049
Irrigation and Trellis Systems					acre	286.41	0.191
Shop and Machine Shed					acre	24.17	0.016
Land Interest Charge	t-				acre	600.00	0.400
Interest on Prior Years' Establishment C Total fixed non-cash costs	osts				acre	1,538.02 \$2,841.57	1.025 \$1.894
Total fixed costs						\$6,376.57	\$4.251
Total of all costs per acre						\$14,361.32	\$9.574
Net projected returns						-\$11,136.32	-\$7.424

Table 16MH. Year 3, Blueberries, Organic	Marke	rt, Machine H	Iarvest, \$/acre, (economic costs	and returns.		
TOTAL GROSS INCOME			Quantity	Unit	\$/Unit	Total	Price/lb
Blueberries, fresh market			3,600	lbs	\$2.15	\$7,740	\$2.150
Total gross income			3,600			\$7,740	\$2.150
VARIABLE CASH COSTS		cription	Labor	Machinery	Materials	Total	Cost/lb
Pruning and Brush Mgmt	40.00	hours	\$880.00			\$880.00	\$0.244
Weed control						286.00	0.079
Hand Weeding	13.00	hours	286.00				
Disease and Insect Control						712.27	0.198
Air-blast Sprayer	11.00	times	151.23	86.04			
Fungicides					300.00		
Insecticides					175.00		
Fertilization						929.61	0.258
Fertilizer Spreader	2.00	times	9.70	3.91			
Fertigation labor	3.00	hours	66.00				
Fertilizer					850.00		
Bird Control						172.00	0.048
Labor	1.00	hours	22.00				
Equipment					150.00		
Machine-Harvest						3,322.00	0.923
Contract Hand Harvest	0.85	per pound	3,060.00			- ,	
Load & Haul Berries		per pound			108.00		
Berry Commission Fee	0.04	per pound			144.00		
Tissue Analysis					10.00		
Irrigation						350.00	0.097
Labor	3.00	hours	66.00				
Repairs & Maintenance				9.00			
Water and Power					275.00		
Trellis						39.00	0.011
Labor	1.00	hours	22.00				
Repairs & Maintenance					17.00		
Bee Hives	4.00	hives			544.00	544.00	0.151
IPM Scouting		hours	110.00		211.00	110.00	0.031
Mower	6.00	times	58.23	26.45		84.68	0.024
Portable Toilet					75.00	75.00	0.021
Pickup				53.98		53.98	0.015
ATV				30.72		30.72	0.009
Shop and Machine Shed					13.25	13.25	0.004
Miscellaneous and Overhead					200.00	200.00	0.056
Interest: Operating Capital		6 months			150.33	150.33	0.042
Total variable costs			\$4,445.16	\$210.10	\$3,011.58	\$7,666.84	\$2.130
FIXED CASH COSTS					Unit	Total	Cost/lb
Compliance				-	acre	\$3,480.00	\$0.967
Property Insurance					acre	25.00	0.007
Property Taxes					acre	30.00	0.008
Total fixed cash costs						\$3,535.00	\$0.982
FIXED NON-CASH COSTS				_	Unit	Total	Cost/lb
Depreciation and Interest				-			
Machinery and Equipment					acre	\$217.25	\$0.060
Pickup and ATV					acre	72.96	0.020
Irrigation and Trellis Systems					acre	137.50	0.038
Shop and Machine Shed					acre	24.17	0.007
Land Interest Charge	0.00-				acre	600.00	0.167
Interest on Prior Years' Establishment C Total fixed non-cash costs	osts				acre	2,206.20	0.613
						\$3,258.07	\$0.905
Total fixed costs						\$6,793.07	\$1.887
Total of all costs per acre						\$14,459.92	\$4.017
Net projected returns						-\$6,719.92	-\$1.867

Table 17MH. Year 4, Blueberries, Orga	nic Marke	t, Machine I	Harvest, \$/acre, o	economic cost	s and returns.		
TOTAL GROSS INCOME			Quantity	Unit	\$/Unit	Total	Price/lb
Blueberries, fresh market			3,600	lbs	\$2.15	\$7,740	\$2.150
Blueberries, processed market			3,600	lbs	1.20	4,320	1.200
Total gross income			7,200			\$12,060	\$1.675
VARIABLE CASH COSTS		cription	Labor	Machinery	Materials	Total	Cost/lb
Pruning and Brush Mgmt	60.00	hours	\$1,320.00			\$1,320.00	\$0.183
Soil sample (every 4th yr)					3.50	3.50	0.000
Sawdust Application (every 3rd yr)						147.50	0.020
Sawdust	11.00	units			85.00 62.50		
Loader Rental					62.50		
Weed control	12.00	hours	286.00			286.00	0.040
Hand Weeding	13.00	nours	286.00				
Disease and Insect Control			161.00	00.04		712.27	0.099
Air-blast Sprayer Fungicides	11.00	times	151.23	86.04	300.00		
Insecticides					175.00		
Fertilization					175.00	929.61	0.129
Fertilizer Spreader	2.00	times	9.70	3.91		929.01	0.129
Fertigation labor		hours	66.00	2.71			
Fertilizer					850.00		
Bird Control						172.00	0.024
Labor	1.00	hours	22.00			1/2:00	0.021
Equipment					150.00		
Machine-Harvest						1,594.00	0.221
Contract Machine Harvest	0.15	per pound			1,080.00		
Load & Haul Berries	0.03	per pound			216.00		
Berry Commission Fee	0.04	per pound			288.00		
Tissue Analysis					10.00		
Irrigation						350.00	0.049
Labor	3.00	hours	66.00				
Repairs & Maintenance				9.00			
Water and Power					275.00		
Trellis						39.00	0.005
Labor	1.00	hours	22.00		17.00		
Repairs & Maintenance					17.00		
Bee Hives		hives	110.00		544.00	544.00	0.076
IPM Scouting Mower		hours times	110.00 58.23	26.45		110.00 84.68	0.015 0.012
Portable Toilet	0.00	umes	38.23	20.45	75.00	75.00	0.012
Pickup				53.98	15.00	53.98	0.007
ATV				30.72		30.72	0.004
Shop and Machine Shed					13.25	13.25	0.002
Miscellaneous and Overhead					200.00	200.00	0.028
Interest: Operating Capital		6 months			127.59	127.59	0.018
Total variable costs			\$1,825.16	\$210.10	\$4,471.84	\$6,507.10	\$0.904
FIXED CASH COSTS					Unit	Total	Cost/lb
Compliance				-	acre	\$3,480.00	\$0.483
Property Insurance					acre	25.00	0.003
Property Taxes					acre	30.00	0.004
Total fixed cash costs						\$3,535.00	\$0.491
FIXED NON-CASH COSTS					Unit	Total	Cost/lb
Depreciation and Interest				-	0.111	1010	000010
Machinery and Equipment					acre	\$690.81	\$0.096
Pickup and ATV					acre	72.96	0.010
Irrigation and Trellis Systems					acre	286.41	0.040
Shop and Machine Shed					acre	24.17	0.003
Land Interest Charge					acre	600.00	0.083
Amortized Establishment Costs Total fixed non-cash costs					acre	2,609.39 \$4,283.74	0.362 \$0.595
Total fixed costs						\$4,285.74 \$7,818.74	\$1.086
rotat fixed costs						27,010.74	31.080
Total of all costs per acre						\$14,325.85	\$1.990
Net projected returns						-\$2,265.85	-\$0.315

Table 18MH. Year 5, Blueberries, Orga	nic Marke	rt, Machine H	Harvest, \$/acre, o	economic costs	s and returns.		
TOTAL GROSS INCOME			Quantity	Unit	\$/Unit	Total	Price/lb
Blueberries, fresh market			5,300	lbs	\$2.15	\$11,395	\$2.150
Blueberries, processed market			5,300	lbs	1.20	6,360	1.200
Total gross income			10,600			\$17,755	\$1.675
VARIABLE CASH COSTS	Des	cription	Labor	Machinery	Materials	Total	Cost/lb
Pruning and Brush Mgmt	85.00	hours	\$1,870.00			\$1,870.00	\$0.176
Weed control Hand Weeding	13.00	hours	286.00			286.00	0.027
Disease and Insect Control						712.27	0.067
Air-blast Sprayer	11.00	times	151.23	86.04		,	
Fungicides				00101	300.00		
Insecticides					175.00		
Fertilization						929.61	0.088
Fertilizer Spreader	2.00	times	9.70	3.91		929.01	0.000
Fertigation labor		hours	66.00	5.91			
Fertilizer	5.00	nours	00.00		850.00		
					850.00		
Bird Control						172.00	0.016
Labor	1.00	hours	22.00		1.50.00		
Equipment					150.00		
Machine-Harvest						2,342.00	0.221
Contract Machine Harvest		per pound			1,590.00		
Load & Haul Berries		per pound			318.00		
Berry Commission Fee	0.04	per pound			424.00		
Tissue Analysis					10.00		
Irrigation						350.00	0.033
Labor	3.00	hours	66.00				
Repairs & Maintenance				9.00			
Water and Power					275.00		
Trellis						39.00	0.004
Labor	1.00	hours	22.00				
Repairs & Maintenance					17.00		
Bee Hives	4 00	hives			544.00	544.00	0.051
IPM Scouting		hours	110.00		244.00	110.00	0.010
Mower		times	58.23	26.45		84.68	0.008
Portable Toilet	0.00	unico	50.25	20.45	75.00	75.00	0.007
Pickup				53.98		53.98	0.005
ATV				30.72		30.72	0.003
Shop and Machine Shed					13.25	13.25	0.001
Miscellaneous and Overhead					200.00	200.00	0.019
Interest: Operating Capital		6 months			150.53	150.53	0.014
Total variable costs			\$2,375.16	\$210.10	\$5,091.78	\$7,677.04	\$0.724
FIXED CASH COSTS				-	Unit	Total	Cost/lb
Compliance					acre	\$3,480.00	\$0.328
Property Insurance					acre	25.00	0.002
Property Taxes					acre	30.00	0.003
Total fixed cash costs						\$3,535.00	\$0.333
FIXED NON-CASH COSTS Depreciation and Interest				-	Unit	Total	Cost/lb
Machinery and Equipment					acre	\$690.81	\$0.065
Pickup and ATV					acre	72.96	0.007
Irrigation and Trellis Systems					acre	286.41	0.007
Shop and Machine Shed					acre	280.41	0.0027
Land Interest Charge					acre	600.00	0.057
Interest on Prior Years' Establishment	Costs				acre	2,745.34	0.259
Total fixed non-cash costs					-	\$4,419.70	\$0.417
Total fixed costs						\$7,954.70	\$0.750
Total of all costs of an and						616 (D) DC	61 477
Total of all costs per acre Net projected returns						\$15,631.74 \$2,123.26	\$1.475 \$0.200

Table 19MH. Year 6, Blueberries, Org	anic Marke	rt, Machine H	Harvest, \$/acre, o	economic cost	s and returns.		
TOTAL GROSS INCOME			Quantity	Unit	\$/Unit	Total	Price/lb
Blueberries, fresh market			7,200	lbs	\$2.15	\$15,480	\$2.150
Blueberries, processed market			7,200	lbs	1.20	8,640	1.200
Total gross income			14,400			\$24,120	\$1.675
VARIABLE CASH COSTS	Des	cription	Labor	Machinery	Materials	Total	Cost/lb
Pruning and Brush Mgmt	100.00	hours	\$2,200.00			\$2,200.00	\$0.153
Weed control Hand Weeding	13.00	hours	286.00			286.00	0.020
Disease and Insect Control						1,073.84	0.075
Air-blast Sprayer	12.00	times	164.98	93.86		1,072104	0.070
Fungicides					450.00		
Insecticides					365.00		
Fertilization						1,129.61	0.078
Fertilizer Spreader	2.00	times	9,70	3.91		.,,	0.070
Fertigation labor		hours	66.00	2.71			
Fertilizer	2.00		00.00		1,050.00		
Bird Control						172.00	0.012
Labor	1.00	hours	22.00			1/2.00	0.012
Equipment	1.00	110413	22.00		150.00		
Machine-Harvest						3,178.00	0.221
Contract Machine Harvest	0.15	nor nound			2,160.00	3,178.00	0.221
Load & Haul Berries		per pound per pound			432.00		
Berry Commission Fee		per pound			576.00		
Tissue Analysis	0.04	per pound			10.00		
						250.00	0.024
Irrigation Labor	2.00	hours	66.00			350.00	0.024
Repairs & Maintenance	3.00	nours	66.00	9.00			
Water and Power				9.00	275.00		
					275.00		
Trellis	1.00		22.00			39.00	0.003
Labor	1.00	hours	22.00		17.00		
Repairs & Maintenance					17.00		
Bee Hives		hives			544.00	544.00	0.038
IPM Scouting		hours	110.00			110.00	0.008
Mower	6.00	times	58.23	26.45		84.68	0.006
Portable Toilet				53.00	75.00	75.00	0.005
Pickup ATV				53.98		53.98 30.72	0.004
Shop and Machine Shed				30.72	13.25	13.25	0.002
Miscellaneous and Overhead					200.00	200.00	0.001
Interest: Operating Capital		6 months			185.08	185.08	0.013
Total variable costs		o montila	\$2,718.91	\$217.92	\$6,502.33	\$9,439.17	\$0.655
			,				
FIXED CASH COSTS				-	Unit	Total	Cost/lb
Compliance					acre	\$3,480.00	\$0.242
Property Insurance					acre	25.00	0.002
Property Taxes					acre	30.00	0.002
Total fixed cash costs						\$3,535.00	\$0.245
FIXED NON-CASH COSTS Depreciation and Interest					Unit	Total	Cost/lb
Machinery and Equipment					0.000	\$735.12	\$0.051
Pickup and ATV					acre	\$735.12 72.96	0.005
Irrigation and Trellis Systems					acre	286.41	0.003
Shop and Machine Shed					acre	280.41	0.020
Land Interest Charge					acre	600.00	0.042
Interest on Prior Years' Establishme	nt Costs				acre	2,617.95	0.182
Total fixed non-cash costs						\$4,336.61	\$0.301
Total fixed costs						\$7,871.61	\$0.547
Total of all costs per ages						\$17.310.77	\$1.202
Total of all costs per acre Net projected returns						\$17,310.77 \$6,809.23	\$1.202 \$0.473
property retains						90,009.20	40.475

Table 20MH. Full production, Blueben	ries, Orga	nic Market.	Machine Harvest	, \$/acre. econo	mic costs an	d returns.	
TOTAL GROSS INCOME			Quantity	Unit	\$/Unit	Total	Price/lb
Blueberries, fresh market			9,000	lbs	\$2.15	\$19,350	\$2.150
Blueberries, processed market			9,000	lbs	1.20	10,800	1.200
Total gross income			18,000			\$30,150	\$1.675
VARIABLE CASH COSTS		cription	Labor	Machinery	Materials	Total	Cost/lb
Pruning and Brush Mgmt Soil sample (every 4th yr)	100.00	nours	\$2,200.00		3.50	\$2,200.00 3.50	\$0.122 0.000
Sawdust Application (every 3rd yr) Sawdust	2.67				28.22	49.17	0.003
Loader Rental	3.67	units			28.33 20.83		
					20.83		
Weed control Hand Weeding	13.00	hours	286.00			286.00	0.016
Disease and Insect Control						1,073.84	0.060
Air-blast Sprayer	12.00	times	164.98	93.86			
Fungicides					450.00		
Insecticides					365.00		
Fertilization						1,129.61	0.063
Fertilizer Spreader	2.00	times	9.70	3.91			
Fertigation labor	3.00	hours	66.00				
Fertilizer					1,050.00		
Bird Control						172.00	0.010
Labor	1.00	hours	22.00				
Equipment					150.00		
Machine-Harvest						3,970.00	0.221
Contract Machine Harvest	0.15	per pound			2,700.00		
Load & Haul Berries		per pound			540.00		
Berry Commission Fee	0.04	per pound			720.00		
Tissue Analysis					10.00		
Irrigation						350.00	0.019
Labor	3.00	hours	66.00				
Repairs & Maintenance				9.00			
Water and Power					275.00		
Trellis						39.00	0.002
Labor	1.00	hours	22.00				
Repairs & Maintenance					17.00		
Bee Hives		hives			544.00	544.00	0.030
IPM Scouting		hours	110.00	a.c. 1.6		110.00	0.006
Mower Portable Toilet	6.00	times	58.23	26.45	75.00	84.68 75.00	0.005
Pickup				53.98	75.00	53.98	0.004
ATV				30.72		30.72	0.002
Shop and Machine Shed					13.25	13.25	0.001
Miscellaneous and Overhead					200.00	200.00	0.011
Interest: Operating Capital		6 months			201.98	201.98	0.011
Total variable costs			\$2,718.91	\$217.92	\$7,363.89	\$10,300.73	\$0.572
FIXED CASH COSTS					Unit	Total	Cost/lb
Compliance				-	acre	\$3,480.00	\$0.193
Property Insurance					acre	25.00	0.001
Property Taxes					acre	30.00	0.002
Total fixed cash costs						\$3,535.00	\$0.196
FIXED NON-CASH COSTS					Unit	Total	Cost/lb
Depreciation and Interest				-			
Machinery and Equipment					acre	\$735.12	\$0.041
Pickup and ATV					acre	72.96	0.004
Irrigation and Trellis Systems					acre	286.41	0.016
Shop and Machine Shed					acre	24.17	0.001
Land Interest Charge					acre	600.00	0.033
Amortized Establishment Costs Total fixed non-cash costs					acre	4,029.74	0.224
Total fixed costs						\$5,748.40 \$9,283.40	\$0.319 \$0.516
							40.010
Total of all costs per acre						\$19,584.13	\$1.088
Net projected returns						\$10,565.87	\$0.587