

Report #639 September 2010

# Michigan Production Costs for Tart Cherries by Production Region

By

Roy Black, James Nugent, Nikki Rothwell, Suzanne Thornsbury, and Nicole Olynk

Department of Agriculture, Food and Resource Economics MICHIGAN STATE UNIVERSITY East Lansing, MI 48824-1039

### Executive Summary

- The weighted average cost of producing tart cherries in Michigan on a representative farm in 2009 is \$0.36/lb. This cost was averaged across the three main production regions in Michigan and weighted by average per acre production for each region as published by the Michigan Agricultural Statistics Service.
- Costs vary across the main production regions and by farm size. Costs are about \$0.04/lb less for mid-sized farms in Northwest Michigan and \$0.08/lb and \$0.10/lb in West Central and Southwest Michigan, respectively.
- This report was developed through interviews with tart cherry growers and other experts in each of the three main growing regions in 2005 and 2006. Many of the numbers were updated in 2009.
- The cost of production calculation is based on estimates of operating costs, harvest costs, and management, interest and tax costs. It also includes an amortized cost of establishing an orchard and employing the land in production (versus some other use). The following tables summarize the cost findings for each of the production regions.

## Northwest mid-sized grower

COST	\$/ACRE
Operating costs	\$688.47
Harvest costs	\$652.57
Management, interest and taxes	\$302.45
Total production costs	\$1,643.49
Amortized cost of orchard establishment and land cost	\$1,031.39
Total production, land and establishment costs	\$2,674.79
Total costs/lb	\$0.32
Total variable production costs/lb	\$0.18

## Southwest mid-sized grower

\$/ACRE
\$673.06
\$732.14
\$156.35
\$1,561.55
\$909.15
\$2470.00
\$0.45
\$0.28

## West Central mid-sized grower

COST	\$/ACRE
Operating costs	\$712.75
Harvest costs	\$595.28
Management, interest and taxes	\$174.96
Total production costs	\$1,657.95
Amortized cost of orchard establishment and land cost	\$909.15
Total production, land and establishment costs	\$2,567.10
Total costs/lb	\$0.42
Total variable production costs/lb	\$0.27

## Michigan Production Costs for Tart Cherries by Production Region

By: Roy Black<sup>1</sup>, James Nugent<sup>2</sup>, Nikki Rothwell<sup>3</sup>, Suzanne Thornsbury<sup>1</sup>, and Nicole Olynk<sup>4</sup>

Introduction	-
Objectives	
Framing the Cost of Production calculation	
Method Used to Obtain the Required Information	3
Calculating Costs of production	.3
Labor Costs	. 3
Establishment Costs	4
Production and Harvest Costs	4
Land Costs	4
Marketable Yield	.5
Cost/Lb of Cherries	5
Table 1. Cost of Labor	7
Table 2. Costs of Establishing	8
Table 3. Cash and Labor Costs per Acre	9
Table 3a. NW Mid-sized Growers	
Table 3b. NW Larger Scale Growers 1	
Table 3c. SW Growers	3
Table 3d. WC Growers	5
Appendix	
Equipment Costs	
Fertilizer Costs 1	7
Table 4. Annual and Hourly Equipment Costs 1	8
Table 4a. Annual Costs for Mid-sized Scale NW 1	
Table 4b. Hourly Costs for Mid-sized Scale NW I	
Table 4c. Annual Costs for Larger Scale NW 1	9
Table 4d. Hourly Costs for Larger Scale NW 1	9
Table 4e. Annual Costs for SW2	0
Table 4f. Hourly Costs for SW2	0
Table 4g. Annual Costs for WC2	Ĭ
Table 4h. Hourly Costs for WC	3
Table 5. Fertilizer Costs	2
Table 5a. NW Fertilizer Costs	2
Table 5b. SW Fertilizer Costs2	
Table 5c. WC Fertilizer Costs 2	2

#### Abstract

The cost of producing tart cherries in NW Michigan on a representative mid-sized farm is \$0.32/lb. This cost is based upon an economic life-cycle which includes establishment years, production years, and a 22 year bearing period. The yields used in the calculation take into account MASS/NASS estimates since the mid 1990's excluding the year of the unprecedented wind freeze (2002). The costs are lower for the largest farms and significantly higher in the WC and SW regions.

#### Introduction

The tart cherry growing area extends along the western side of Michigan along Lake Michigan as shown in Figure 1. The area is divided into three regions based upon differences in growing conditions and the role of cherries in the farm plan. The regions are Northwest (NW), West Central (WC), and Southwest (SW). The NW region contains half of Michigan's tart cherry acreage with the largest acreage in Leelanau and Grand Traverse counties and significant acreage in Benzie, Antrim and Charlevoix counties. Oceana has most of the acreage in the WC region followed by Mason. Van Buren and Berrien are the dominant counties in the SW.



Figure 1. Michigan's Cherry Production Regions

Tart cherries have traditionally been the dominant crop in the NW region and tree-fruit farms in the region are generally specialized. Typically, at least 50% of the acreage in the NW is devoted to tart cherry production with much of the remaining acreage split between sweet cherry and apple production. The SW region, in contrast, is more diversified with a wide range of fruits including apples, grapes, peaches, and tart and sweet cherries. On the average, yields have been higher in the NW than in the WC and SW regions.

<sup>&</sup>lt;sup>1</sup>Faculty, Dept. of Agricultural, Food and Resource Economics

<sup>&</sup>lt;sup>2</sup>Retired District Extension Horticultural and Marketing Educator <sup>3</sup>Coordinator, Northwest Michigan Horricultural Research Station

<sup>&</sup>lt;sup>3</sup>Coordinator, Northwest Michigan Horricultural Research Station and District Extension Horricultural Educator

<sup>&</sup>lt;sup>4</sup>Assistant Professor, Department of Agricultural Economics, Purdue University

### Objectives

The objectives of this report are to:

- Calculate the cost/lb of cherries for a "representative" farm for each of the regions.
- Describe the methods used to estimate the cost/lb for marketable cherries, over the block's life-cycle, for NW, WC, and SW Michigan farms using growing and harvesting practices representative of each of these regions.
- Describe how the information used to calculate the cost was obtained.
- Determine the annual cash requirements for each stage of the tart cherry life-cycle.

## Framing the Cost of Production Calculation

Farmers considering investing in a new block or replanting an existing block want to know if the block will be profitable over the block's economic lifespan. They recognize the tart cherry industry is risky with highly variable yields, prices, and revenues but farmers want revenues that, on the average, cover costs over the lifetime of the block.

A starting point is establishing a projected cost of production per lb of cherries. The cost must include: (1) cash required for getting the block into production; (2) the land control costs for the time period of getting the block into production; (3) crop protection expenditures, fertilizer, labor, machinery, building and equipment costs, and harvest and handling costs during the bearing years; (4) land control costs during the bearing years; and (5) management and supervision costs. These costs include a rate of return on equity capital and a charge for unpaid family labor and management. The final component is projected average yield/acre during the bearing years.

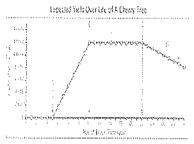
Cherries, like other perennial tree crops, have a life-cycle which includes an establishment stage, a ramping up to maturity stage, a maturity stage, and a declining production stage as illustrated in the example in Figure 2. Several years of cash outflows occur prior to any revenue generation. As production ramps up, cash inflows begin to exceed cash requirements resulting in a positive annual net cash flow.

The average annual costs per lb of marketable fruit over the entire life-cycle of the tree must be assessed – the life cycle cost. Budgeting procedures employed must standardize cash flows to account for the timing and risk involved during the tart cherry tree life-cycle.

Differ reflected to be stored stored, populative policities

Beginning tole Cycle of a Tour Clean Time				
Sex.	Aprol ter	F1871		
(	ļa.	falsovictoura tes		
		RUW (CE		
2	y.	Springersations		
		yezh-strañ		

(ii) Intribung grait capaturi sangkat pepadapakan bean sura, par super ameri sankawa sa da andada menguri Sees si media pali sa da wakada pada paga da 19 ye sa ti.



where their ship data of heather data for spiners in thing part the larger.

Figure 2. Hypothetical Lifecycle

The 1st step is calculation of the cash requirements for the establishment period. The cash required in each year plus the accumulated interest until the beginning bearing year is summed. Likewise, the accumulated annual cost of having land tied up during the establishment period is calculated. These expenditures are amortized over the bearing years. Think of this step as acquiring a "ready to bear" block.

In the 2<sup>nd</sup> step, the annual production and harvesting cost during the bearing years, including land control cost is calculated. The amortized establishment cost is added to get the average annual total cost per acre during the bearing years. This cost is divided by the average yield across the bearing years to get the cost per lb. This approach was used in prior tart cherry cost of production studies for Northwest Michigan (for example, E-1108, 2003).

Figure 3 depicts an example of annual cash flows over a block's life-cycle.

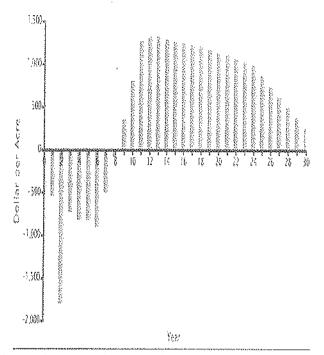


Figure 3. Annual net cash flow

The cost/lb of cherries is a "break-even" price. It is the price/lb the farm would have to receive, over the block's life-cycle, to cover all of the annual cash requirements. This study calculates the cherry price required to justify investing in (or, replacing) a block of cherries to ensure getting a target rate of return on equity capital, covering the annual cost of using land, the opportunity cost of family labor and management, and other allocated costs

### Method Used to Obtain the Required Information: Focus Groups

The projected costs were developed through focus group discussions with cherry growers in each of the production regions. Separate focus groups were conducted in each region and separate focus groups were conducted for mid-sized versus larger farms in the NW. In the discussions, farmers described growing and harvesting practices of representative cherry growers in their region. They also agreed on the size of tart cherry acreage, equipment and cultural practices generally used by growers. The estimates do not reflect the cost of tart cherry production for specific farms since costs vary considerably by site and from farm to farm. They are expected to be "representative" of the region. The

data can provide an outline to help you develop cost information and better evaluate your farm situation. Each of the appropriate tables in this report includes a "Your Farm" column for you to note your cost for a particular operation. Where your costs cannot be determined, you may wish to adjust and substitute the study data.

The information on spray costs was based on actual amounts applied, averaged across participating farms, but with materials at a common price and application cost. These costs were averaged for the mid-sized and larger farms in the NW region because the inter-farm variability was too large to permit differentiation. The data are standardized to a one acre basis for ease of comparison.

Michigan Agricultural Statistics (MASS) production and yield data and rotational survey data were used to estimate the yields/acre in the cost/lb calculations.

#### Calculating Costs of Production

Each of these component cost groups and stages of the life-cycle are discussed in this section prior to the presentation of the tables of results.

#### Labor Costs

Focus groups were asked to examine the set of tasks performed and to determine the skill level required to perform each task. It is recognized that there is some degree of error is establishing labor costs in this manner because of the necessity to employ skilled labor full-time and therefore using skilled labor to perform tasks that may be able to be performed by unskilled labor in some cases. Overall, however, the skill level was matched as closely as possible to the task being performed by growers. The categories used were: (1) owner; (2) manager/supervisor; (3) skilled, year-round; (4) skilled hourly; and (5) unskilled hourly.

Labor costs, by skill level, including fringes are shown in Table 1. Wages and fringe benefits vary by size of operation and by the production region.

Tables 1a and 1b provide labor costs for the NW growing region for mid-sized and large growers, respectively. Table 1c and 1d show labor for the SW and WC region, respectively.

#### Establishment Cost

The costs of establishing a new orchard include all cash outlays incurred prior to the bearing years. They also include the accumulated annual costs of controlling land. Under Approach 1, these outlays are capitalized into a single establishment cost and amortized annually against the cost of the bearing block. That is, an annual depreciation and interest charge is assessed against the bearing block.

Cash outlays associated with establishment of a new block will vary widely across farms and costs are sensitive to the management practices employed (i.e. site preparation methods, costs and cultural practices). Cash outlays for establishment are presented in Table 2 and are treated as equal for farms in all growing regions. The labor costs for the mid-sized farm group in the NW region were used in the calculations.

The annual land costs used are discussed under the land cost section. A 22 year bearing life and an 8% interest rate were used in calculating the annual amortized cost.

#### Production and Harvest Costs

Non-land costs were separated into categories including pruning, mowing, crop protection, borer control, herbicide, fertilizer, bee rental, pest management, pickup truck use, harvest costs, interest on operating, and management and supervision costs. They are calculated by region and are presented in Table 3. Tables 3a and 3b show the non-land costs for the NW growing region for midsized and large producers, respectively. Tables 3c and 3d show the costs for the SW and WC regions, respectively.

Part 1 of Table 3 covers the pre-harvest costs; Part 2 covers harvest costs. Part 2 also covers the cost of management and labor supervision and interest on operating capital.

Specific tasks are described by hours required per acre. Costs are broken out by labor, materials, and equipment. Equipment costs are divided into cash and non-cash components. Harvest costs include the cooling pad operating and shipping. The ½ cent per pound tart cherry assessment was included in Table 3.

The core harvest costs are varied with yield in the sensitivity analysis tables where the impact of yield on cost/lb is calculated. Cost per acre is set at 85% of peak bearing age cost when bearing begins and rises to 100% when trees reach peak bearing age.

The machinery cost calculations are presented in the Appendix in Table 4 and fertilizer use rates, prices and costs are presented in Table 5.

Production costs have increased substantially since 2003 when E-1108 was last published. This is a result of increases in many prices levels, particularly petroleum based inputs, machinery, and wages. Fuel costs are based upon \$2.65/gal diesel; fertilizer prices are based upon projected 2009 prices.

#### Land Control Cost

Estimation of the annual cost of controlling land has been a challenge. The approach taken is to calculate the opportunity cost of what the capital invested in land could earn elsewhere less the expected annual appreciation (capital gains) to arrive at a net cost per year. An 8% interest rate was used for the opportunity cost. The cost of "controlling" land is site and situation specific; these estimates provide a starting point.

Land in the NW was priced at \$7,000/acre and a 3.5%/year appreciation was used. This results in an annual net cost, prior to property tax, of \$315/acre:

Opportunity cost @ 8% \$560
Less Capital gains @ 3.5%/yr 245
Net cost/bearing acre \$315

Land in the SW and WC was priced at \$4,000/acre and a 2.0%/year appreciation was used. This results in an annual net cost, prior to property tax, of \$240/acre:

Opportunity cost @ 8% \$320
Less Capital gains @ 2.0%/yr 80
Net cost/bearing acre \$240

These estimates are conservative since land in cherries is only part of a parcel of land.

#### Marketable Yield

The estimated cost per lb is calculated by dividing the average annual cost/acre during the bearing years by the average yield/acre. Figure 3, based upon Michigan Agricultural Statistics, depict the average yield/acre by region since the mid 90's. In the late 90's, a larger proportion of trees were in the prime producing ages than would be expected over the lifetime of a block. Also, in 2001 conditions were exceptional by historical standards and reflected in an outstanding crop. The near zero yields in 2002 reflected a systemic "wind" freeze that was very unusual. Losses that extensive had not been observed in recorded history.

The average annual yields/acre during the bearing years used these data as reference points. Data that are used in the cost/unit calculation are 9000, 6300, and 5,600 lbs/acre for the NW, WC, and SW regions, respectively. The 2002 yields were not used in developing the reference yields. MASS yields were adjusted for the planting density assumed in the budgets and the intensity of input use.

#### Cost/Lb of Cherries

The 1st step is to calculate the annual cost for establishing the block. We start by taking the annual values from Table 2 and summing and amortizing. That translates into \$518.30/year based upon a 22 year bearing life and an 8% interest rate for the NW farms. We do the same calculation with annual land control costs. The amortized cost is \$198/ year for the bearing years.

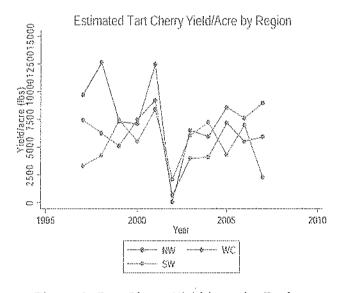


Figure 3. Tart Cherry Yield/Acre by Region

Annual production costs/acre, including harvest and the check-off, are \$1643.49 for the mid-sized NW farm (table 3a). Putting all the cost components together, we get:

Amortized establishment cost/year	
Non-land component	\$518.30
Land component	198.00
Annual bearing year	
Non-land cost	1,643.49
Land (net)	315.00
Total /year during bearing years	2,674.79

The annual cost/bearing year is divided by the average yield/bearing acre to get the cost/lb of cherries. However, one additional adjustment must be made; the yield – cherry price correlation must be taken into account. The yield-price correlation is a result of the large percentage of the national crop grown in Michigan, particularly NW Michigan.

Historically, the multiplication of the average yield times the average price generates higher gross revenue/acre than the observed gross revenue. For the NW region, the difference was 7%. Thus, an adjustment factor of 0.93 is used for the NW.

# The estimated cost/lb for the representative mid-sized farm in NW is

$$$0.32 / lb = \frac{$2,675 / acre/ year}{9,000 lbs / year \times 0.93}$$

The estimated cost for a representative NW larger farm was \$0.01/lb less (see table 3b). Part of the reason for the narrow difference in the calculation was establishment costs, herbicide costs, fertilizer costs, and land control costs were assumed to be the same for both groups as was yield.

The annual production costs/acre, including harvest and the check-off, are \$1,561.55 for a representative SW farm (table 3c). Putting all the cost components together, we get:

Amortized establishment cost/year	
Non-land component	\$518.30
Land component	150.85
Annual bearing year	
Non-land cost	1,561.55
Land (net)	240.00
Total /year during bearing years	2,473.70

Historically, the multiplication of the average yield times the average price generates higher gross revenue/acre than the observed gross revenue as in the NW. For the SW region, the difference was 2-3% since it produces a much smaller proportion of national production than the NW. Thus, an adjustment factor of 0.98 is used for the SW.

The estimated cost/lb for a representative farm in SW is  $$0.45/lb = \frac{$2,473/acre/year}{5,600 lbs/year \times 0.98}$ .

Annual production costs/acre, including harvest and the check-off, are \$1,657.95 for a representative WC farm (table 3d). Putting all the cost components together, we get:

Amortized establishment cost/year	
Non-land component	\$518.30
Land component	150.85
Annual bearing year	
Non-land cost	1,657.95
Land (net)	<u>240.00</u>
Total /year during bearing years	2,567.10

Historically, the multiplication of the average yield times the average price generates higher gross revenue/acre than the observed gross revenue. For the NW region, the difference was 4%, intermediate between the NW and SW. Thus, an adjustment factor of 0.96 is used for the WC.

The estimated cost/lb for a representative farm in WC is  $$0.42 / lb = \frac{$2,567 / acre/ year}{6,300 lbs / year \times 0.96}$ .

The approach has ignored income tax considerations. They typically reduce the cost of capital because of interactions with tax based depreciation – assuming the farm pays income taxes. However, the approach underestimates the time value of money. The effects approximately offset.

Table 1. Cost of Labor for Tart Cherry Production in Michigan (includes fringes)

A. Cost of Labor for Tart Cherry Production in Northwest Growing Region for Mid-sized Growers

	Salaries	Benefits	Total
Skill Level	\$/hr	%	\$/hr
Owner	\$25.00	15.30%	\$28.83
Manager/Supervisor	NA	NA	NA
Skilled, year-round	\$16.50	11.40%	\$18.38
Skilled, hourly	\$13.00	11.40%	\$14.48
*Unskilled, hourly	\$9.50	11.40%	\$10.58

C. Cost of Labor for Tart Cherry Production in Southwest Growing Region

South-west Region			
	Salaries	Benefits	Total
Skill Level	\$/hr	%	\$/hr
Owner	\$25.00	15.30%	\$28.83
Manager/Supervisor	NA	NA	NA
Skilled, year-round	\$14.00	28.00%	\$17,92
Skilled, hourly	\$10.00	17.50%	\$11.75
*Unskilled, hourly	\$7,50	17.50%	\$8.81

B. Cost of Labor for Tart Cherry Production in Northwest Growing Region for Large Scale Growers

NW Region Larger Scale Growers			
	Salaries	Benefits	Total
Skill Level	\$/hr	%	\$/hr
Owner	NA	NA	ΝA
Manager/Supervisor	\$22.00	53,50%	\$33.77
Skilled, year-round	\$17.00	55.80%	\$26.49
Skilled, hourly	\$11.50	22.50%	\$14.09
"Unskilled, hourly	\$10.00	22.50%	\$12.25

D. Cost of Labor for Tart Cherry Production in West Central Growing Region

West Central Region			
	Salaries	Benefits	Total
Skill Levei	\$/hr	%	\$/hr
Owner	\$25.00	15.30%	\$28.83
Manager/Supervisor	NA	NA	NA
Skilled, year-round	\$14.00	61.50%	\$22.61
Skilled, hourly	\$10.50	19.50%	\$12.55
*Unskilled, hourly	\$8.25	19.50%	\$9.86

Table 2. Costs of Establishing Tart Cherry Orchard

Operation         (S)           Year OSite Preparation & Fallow:         Orchard removal & clean-up         \$600.00           Plowing and Cover crop         \$300.00           Total Site Prep. Costs         \$900.00           Year 1Planting Costs:         \$150.00           Plowing         \$22.00           Nematicide         \$150.00           Surveying         \$24.10           Trees:         \$1,031.25           Planting,         \$56.25           Mulch (1/2 bale straw/ tree)         \$200.00           Total Planting Costs         \$1,483.60           Cultural Costs:         \$200.00           Total Planting Costs         \$1,483.60           Cultural Costs:         \$200.00           Perst Control (4x)         \$58.29           Herbicide         \$25.50           Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @ \$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$15.91           Tree replacement (1%)         \$20.48	<i>a</i> .	Cost/acre
Orchard removal & clean-up         \$600.00           Plowing and Cover crop         \$300.00           Total Site Prep. Costs         \$900.00           Year 1Flanting Costs:         \$150.00           Plowing         \$22.00           Nematicide         \$150.00           Surveying         \$24.10           Trees:         \$1,031.25           Planting,         \$56.25           Mulch (1/2 bale strew/ tree)         \$200.00           Total Planting Costs         \$1,483.60           Cultural Costs:         \$200.00           Total Planting Costs         \$37.91           Per Control (4x)         \$58.29           Herbicide         \$25.50           Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @ \$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$30.142           Total- Year 1         \$1.785.02           Year 2Growing costs:         \$15.91           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Co	Operation	(\$)
Plowing and Cover crop         \$300.00           Total Site Prep. Costs         \$960.00           Year 1Flanting Costs:         Plowing         \$22.00           Nematicide         \$150.00         Surveying         \$24.10           Trees:         \$1,031.25         Planting,         \$56.25           Mulch (1/2 bale strew/ tree)         \$200.00           Total Planting Costs         \$1,483.60           Cultural Costs:         \$29           Permanent seeding         \$37.91           Pest Control (4x)         \$58.29           Herbicide         \$25.50           Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @ \$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$1.785.02           Year 2Growing costs:         Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$13.04           Fert	<u>-</u>	
Total Site Prep. Costs         \$900.00           Year 1Planting Costs:         \$22.00           Plowing         \$22.00           Nematicide         \$150.00           Surveying         \$24.10           Trees:         \$1,031.25           Planting,         \$56.25           Mulch (1/2 bale straw/ tree)         \$200.00           Total Planting Costs         \$1,483.60           Cultural Costs:         \$25.50           Permanent seeding         \$37.91           Pest Control (4x)         \$58.29           Herbicide         \$25.50           Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @ \$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$30.00           Total Cultural Costs         \$31.785.02           Year 2Growing costs:         \$15.91           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control <td>•</td> <td>.,</td>	•	.,
Year 1Planting Costs:           Plowing         \$22.00           Nematicide         \$150.00           Surveying         \$24.10           Trees:         \$1,031.25           Planting,         \$56.25           Mulch (1/2 bale straw/ tree)         \$200.00           Total Planting Costs         \$1,483.60           Cultural Costs:         Permanent seeding           Permanent seeding         \$37.91           Pest Control (4x)         \$58.29           Herbicide         \$25.50           Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @ \$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$30.00           Total Cultural Costs         \$31.785.02           Year 2Growing costs:         Pruning (1 hr/ac)           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         <		\$300.00
Plowing         \$22.00           Nematicide         \$150.00           Surveying         \$24.10           Trees:         \$1,031.25           Planting,         \$56.25           Muich (1/2 bale straw/ tree)         \$200.00           Total Planting Costs         \$1,483.60           Cultural Costs:         \$25.50           Permanent seeding         \$37.91           Pest Control (4x)         \$58.29           Herbicide         \$25.50           Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @ \$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$30.00           Total Year 1         \$1,785.02           Year 2-Growing costs:         \$15.91           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)		\$900.00
Nematicide         \$150.00           Surveying         \$24.10           Trees:         \$1,031.25           Planting,         \$56.25           Mulch (1/2 bale straw/ tree)         \$200.00           Total Planting Costs         \$1,483.60           Cultural Costs:         ***           Permanent seeding         \$37.91           Pest Control (4x)         \$58.29           Herbicide         \$25.50           Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @ \$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$1,785.02           Year 2Growing costs:         ***           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control-5x         \$72.86           Mowing-2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)<	Year 1Planting Costs:	
Surveying         \$24.10           Trees:         \$1,031.25           Planting,         \$56.25           Mulch (1/2 bale straw/ tree)         \$200.00           Total Planting Costs         \$1,483.60           Cultural Costs:         **           Permanent seeding         \$37.91           Pest Control (4x)         \$58.29           Herbicide         \$25.50           Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @\$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$1,785.02           Year 2Growing costs:         **           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Pertilizer-labor & equip.         \$13.04           Pertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1	Plowing	\$22.00
Trees:         \$1,031.25           Planting,         \$56.25           Mulch (1/2 bale straw/ tree)         \$200.00           Total Planting Costs         \$1,483.60           Cultural Costs:         \$37.91           Permanent seeding         \$37.91           Pest Control (4x)         \$58.29           Herbicide         \$25.50           Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @\$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$1,785.02           Year 2Growing costs:         \$15.91           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control-5x         \$72.86           Mowing-2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 lhr/ac)         \$30.00	Nematicide	\$150.00
Planting,         \$56.25           Mulch (1/2 bale straw/ tree)         \$200.00           Total Planting Costs         \$1,483.60           Cultural Costs:         \$37.91           Pest Control (4x)         \$58.29           Herbicide         \$25.50           Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @ \$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$1.785.02           Year 2-Growing costs:         \$15.91           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Surveying	\$24.10
Mulch (1/2 bale straw/ tree)         \$200.00           Total Planting Costs         \$1,483.60           Cultural Costs:         \$37.91           Permanent seeding         \$37.91           Pest Control (4x)         \$58.29           Herbicide         \$25.50           Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @ \$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$1,785.02           Year 2Growing costs:         Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Trees:	\$1,031.25
Total Planting Costs         \$1,483.60           Cultural Costs:         \$37.91           Permanent seeding         \$37.91           Pest Control (4x)         \$58.29           Herbicide         \$25.50           Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @ \$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$1,785.02           Year 2-Growing costs:         \$15.91           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Planting,	\$56.25
Cultural Costs:         \$37.91           Pest Control (4x)         \$58.29           Herbicide         \$25.50           Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @ \$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$1,785.02           Year 2Growing costs:         \$15.91           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Mulch (1/2 bale straw/ tree)	\$200.00
Permanent seeding         \$37.91           Pest Control (4x)         \$58.29           Herbicide         \$25.50           Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @ \$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$1,785.02           Year 2Growing costs:         *15.91           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Total Planting Costs	\$1,483.60
Pest Control (4x)         \$58.29           Herbicide         \$25.50           Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @\$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$1,785.02           Year 2Growing costs:         *15.91           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Cultural Costs:	
Herbicide       \$25.50         Mouse baiting       \$10.22         Fertilizer       \$37.00         Deer Control @ \$.50/tree       \$62.50         Management       \$40.00         Property tax       \$30.00         Total Cultural Costs       \$301.42         Total- Year 1       \$1,785.02         Year 2Growing costs:       Pruning (1 hr/ac)         Pruning (1 hr/ac)       \$15.91         Tree replacement (1%)       \$20.48         Herbicide       \$27.17         Pest Control5x       \$72.86         Mowing2x       \$15.58         Mouse control       \$10.22         Fertilizer-labor & equip.       \$13.04         Fertilizer-material (1 lb./tree)       \$21.00         Deer control (\$0.50/tree)       \$62.50         Management (1.5 hr/ac)       \$30.00         Property tax       \$30.00	Permanent seeding	\$37.91
Mouse baiting         \$10.22           Fertilizer         \$37.00           Deer Control @ \$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$1,785.02           Year 2-Growing costs:         Pruning (1 hr/ac)           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Pest Control (4x)	\$58.29
Fertilizer         \$37.00           Deer Control @ \$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$1,785.02           Year 2Growing costs:         ***           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Herbicide	\$25.50
Deer Control @ \$.50/tree         \$62.50           Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$1,785.02           Year 2Growing costs:         \$15.91           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Mouse baiting	\$10.22
Management         \$40.00           Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$1,785.02           Year 2Growing costs:         ***           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Fertilizer	\$37.00
Property tax         \$30.00           Total Cultural Costs         \$301.42           Total- Year 1         \$1,785.02           Year 2Growing costs:         ***           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Deer Control @ \$.50/tree	\$62.50
Total Cultural Costs         \$301,42           Total- Year 1         \$1,785.02           Year 2Growing costs:         \$15.91           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Management	\$40.00
Total- Year 1         \$1,785.02           Year 2Growing costs:         \$15.91           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Property tax	\$30.00
Year 2Growing costs:           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Total Cultural Costs	\$301,42
Year 2Growing costs:           Pruning (1 hr/ac)         \$15.91           Tree replacement (1%)         \$20.48           Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Total- Year 1	\$1,785.02
Pruning (1 hr/ac)       \$15.91         Tree replacement (1%)       \$20.48         Herbicide       \$27.17         Pest Control5x       \$72.86         Mowing2x       \$15.58         Mouse control       \$10.22         Fertilizer-labor & equip.       \$13.04         Fertilizer-material (1 lb./tree)       \$21.00         Deer control (\$0.50/tree)       \$62.50         Management (1.5 lhr/ac)       \$30.00         Property tax       \$30.00		
Herbicide         \$27.17           Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 lhr/ac)         \$30.00           Property tax         \$30.00	Pruning (1 hr/ac)	\$15.91
Pest Control5x         \$72.86           Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 lhr/ac)         \$30.00           Property tax         \$30.00	Tree replacement (1%)	\$20.48
Mowing2x         \$15.58           Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Fertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00	Herbicide	\$27.17
Mouse control         \$10.22           Fertilizer-labor & equip.         \$13.04           Pertilizer-material (1 lb./tree)         \$21.00           Deer control (\$0.50/tree)         \$62.50           Management (1.5 lhr/ac)         \$30.00           Property tax         \$30.00	Pest Control5x	\$72.86
Fertilizer-labor & equip.       \$13.04         Fertilizer-material (1 lb./tree)       \$21.00         Deer control (\$0.50/tree)       \$62.50         Management (1.5 ltr/ac)       \$30.00         Property tax       \$30.00	Mowing2x	\$15.58
Pertilizer-material (1 lb./tree)       \$21.00         Deer control (\$0.50/tree)       \$62.50         Management (1.5 ln/ac)       \$30.00         Property tax       \$30.00	Mouse control	\$10.22
Pertilizer-material (1 lb./tree)       \$21.00         Deer control (\$0.50/tree)       \$62.50         Management (1.5 ln/ac)       \$30.00         Property tax       \$30.00	Fertilizer-labor & equip.	\$13.04
Deer control (\$0.50/tree)       \$62.50         Management (1.5 hr/ac)       \$30.00         Property tax       \$30.00		\$21.00
Management (1.5 hr/ac)         \$30.00           Property tax         \$30.00		
Property tax \$30.00		
		\$30.00

Year 3Growing costs:	
Pruning (3 hr/ac)	\$47.90
Tree replacement (0.5%)	\$10.24
Herbicide	\$27.17
Pest Control5x	\$89.11
Mowing3x	\$23.37
Mouse control	\$10.22
Fertilizer-labor & equip.	\$13.04
Fertilizer-material (2 lb./tree)	\$42.00
Deer control (\$0.50/tree)	\$37.50
Management (1.5 hr/ac)	\$30.00
Property tax	\$30.00
Total- Year 3	\$360.55
Year 4Growing costs:	
Pruning (4 hr/sc)	\$63.64
Herbicide	\$27.17
Pest Control5x	\$107.74
Mowing3x	\$23.37
Mouse control	\$10.22
Pertilizer-labor & equip.	\$13.04
Fertilizer-material (3 lb./tree)	\$63.00
Management (2 hr/ac)	\$40.00
Property tax	\$30.00
Total- Year 4	\$378.18
Year 5Growing costs:	
Pruning (5 hr/ac)	\$79.55
Herbicide	\$27.17
Pest Control-5x	\$129.11
Mowing3x	\$23.27
Mouse control	\$10.22
Fertilizer-labor & equip.	\$13.04
Fertilizer-material (4 lb./tree)	\$84.00
Management (3 hr/ac)	\$60.00
Property tax	\$30,00
Total- Year 5	\$456.36
Total Establishment costs	\$4,198.87

Table 3a. Northwest Mid-sized Growers

						And the Control of th				F
northwest mic-sized growers Cash and Labor Costs per acre Based on average salcable yield over its bearing lifetime of 9,000 lbs/acre (85 lbs/tree duting peak bearing vears)	ringest mic- ield over its b	s <i>ized grower</i> caring lifetim	morthwest mic-sized growers Cash and Labor Costs per acre Icyield over its bearing lifetime of 9,000 lbs/acre (85 lbs/tree dt	abor Costs : /acre (85 lbs	et atre //tree during	peak bearin	g Vears)			
	Time	Labor	Materials	Equipment	ment	Total		Total	76	Your Farm
Operation	*(Mrs/A)	Cash	Cash	Cash	Nen-cash	Cash	Non-			
		(\$/hour)	(\$/Acre)	(\$/Hour)	(\$/Hour)	(\$/Acre)	(\$/Acre)	(\$/Acre)	(S/Acre)	
Pruning						- references	- Similarian signature	892,35	\$6.98	
-Pruning-Chain Saw	9	\$12.25		\$0.30		\$75,30	\$0.00			
Brush Disposal-75 HP Tractor	0.43	\$18.38		\$18.76	\$9.71	\$15,60	\$4.08			
-Mail Chopper	0.43			\$3.46	\$6.86	69 69	\$2.88			
Mowing						-		\$19.76	\$2.22	
-60 HP used Tractor	0.45	\$14,48		\$28.73	\$3.73	\$19,44	\$0.78	-		
-Rotary Mower	0.45			\$0.70	\$3.21	\$0.32	- 25 - 44 - 44			
Crop Protection								8308.83	\$30.67	
-75 HP Tractor	0.98			\$18.76	\$9.73	\$18 38	\$0.50	2010000	10.000	
-Orchard Sprayer	0.98			\$3.05	\$12.43	\$2.99	\$23,16			
-Total Insecticide			\$58,30			858.30	\$0.00		.4.5.1	
-Total Fungicide			\$187,02			\$187.02	\$0.06			
-Total Piant Growth Regulators			\$15.85			\$15,85	S0.66			
-Fotal Spray Labor	1,43	\$18.38				\$26.28	30 00 80 00		•	
Rozer Control								80.1.49 80.1.49	\$0.66	
-75 HP Tractor	0.03			\$18.76	\$9.71	\$0.56	\$0.29			
-Orchard Sprayer	0.03			\$3,05	\$12.43	\$0.09	\$0,37		ed meson.	
Total labor	0.04	\$10.58	\$0.47			\$0.89	\$0.00			
Herbicide								\$31.43	\$2.20	
-60 HP Used Tractor	0.36			\$28.71	\$1.73	\$10.34	\$0.62			
-Woed Sprayer	6.36			\$0.84	\$4.39	\$6.30	81.58			
-Total Herhicide			10.87			\$10.87	\$0.00		J	
-Total labor	0.54	\$18.38				\$9.93	\$0.00			
Fertilder								\$108,57	\$0.61	
-60 HP Used Tractor for Nitrogen application	6.0	\$34,48		\$28.73	\$1,73	\$12.96	\$0.52			
-Leased Spreader	0.3			\$1.00	\$0.00	\$0,30	\$0.00		*	
-60 HP Used Tractor for Potassium application	0.05	\$14.48		\$28,73	\$1.73	\$2,16	\$0.09		Lavie	
-Leased Spreader	0.05			\$1.00	\$0.00	\$0.05	80.00		d	
-Fertilizer			\$83.70			\$83.70	\$0.00		J	
-Lime (2 Ton/Acre @ Each 5th Year)			\$9.40			\$9.40	80.00			
Bee Rental (1 Hivc/3 Acres)			\$18.15					\$18.15	\$0.00	
Fest Management Service		1	\$38.50	-				\$38.50	80.00	400
Fickup (40 miles/Acro @ 60 centa/1891e)				6000 GC	Q 73			000		
TO COME A CONTRACT OF STATE OF				VP-25-5-17-17	53,04			320.UU	94,00	
LOSECHERANDES CASUS				***************************************		***************************************		\$639.14	\$49.33	-

Table 3a (cont).

	Worthwe	est Mid-sized	Northwest Mid-sized growers Cash and Lahot Costs per acre	h and Labor	Costs ner ace	0	***************************************	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	***************************************	
Based on average salcable yield over its	ible yield o	iver its bearin	bearing lifetime of 9,000 lbs/acre (85 lbs/tree during peak bearing years)	,000 lbs/acro	(85 lbs/tree	during peak b	caring years)			
мания предуству до удужения в постоя постания в предуствення в предуствення в постания в постания в постания в	Time	Labor	Materials	Equipment	ment	Tetal	'a	Total	'n	Your Farm
Operation	*(Hrs/A)	Cash	Cash	Cash	Non-cash	Casti.	Non-cash	Cash	Non-cesh	
		(\$/hour)	(\$/Acre)	(\$/Hour)	(\$/Hour)	(\$/Acre)	(\$/Acre)	(\$/Acre)	(\$/Acre)	
Harvest						•				
-Double Incline Shaker	C	\$28,96		\$51.23	\$23,63	\$160,38	847,26			
-75 HP Tractor/Forkish	62	\$14.48		\$18,76	\$9,71	\$56.48	\$19.42			
-60 HP used Tractor/Porklift	2	\$34,48		\$28.73	\$1.73	\$86.42	\$3,46			
-Skimmer (or Miscellancous Labor)	77	\$10.58				\$21,16	\$0.00			
-Shipping (.016 cont/pound*average yield)						\$144,00	\$0.00			
-Cooling Pad Operation (\$.606/1b*Avg Yield)						\$54.00	\$9.00			
-Tart Cherry Assessment (\$.005/16*Avg Yield)						\$45.00	\$0.00			
-Ethry Application			\$4.99			\$4.99	\$0.00			
TOTAL HARVEST COSTS	777777777777777777777777777777777777777							\$582.43	\$70.14	Ĺ
Management and Labor Supervision	හ	\$28.83				\$230.64	\$0.00	***************************************		
Interest on operating capital @ 8%						\$41.81	\$0.00			
Property Taxes		r de de de la destación de la companyo de la compan				\$30.00	\$0.00			
TOTAL MANAGEMENT, INTEREST, AND TAXES	23	A PROPERTY CONTRACTOR OF THE PARTY CONTRACTOR OF THE P	***************************************					\$302.45	\$0.00	
PRODUCTION COSTS/ACRE	***************************************							\$1,524.07	\$119.47	renume.
TOTAL CASH AND NON-CASH COSTS /ACRE								\$1643,49		

Table 3b. Northwest Large Scale Growers

	Morthwest 1		1970-1938 Stores at the second	h soul Lake	r Cocke ner	010	A STATE OF THE PERSON OF THE P	***************************************	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Based on average saleable yield over its	yield over it	s bearing life	time of 9.000	1 lbs/acre (8	5 lbs/tree du	ring peak b	bearing lifetime of 9,000 lbs/acre (85 lbs/tree during peak bearing years)			
	Time	Labor	Materials	Equip	Equipment	) į	Total	Total	થ	Your Farm
Operation	*(Hrs/A)	Cash	Cash	Cash	Non-cash	Cash	Non-cash	Cash	Non-cash	
A THE		(\$/pant)	(\$/Acre)	(\$/Hour)	(\$/Hom)	(\$/Acre)	(\$/Acre)	(\$/Acre)	(\$/Acre)	
Fruning, tipping, and brush disposal								\$132.25	\$18.34	
-Pruning-Chain Saw	Ø	\$12.25		\$0.30		\$75.30	\$0.00			1
-Brush Disposal-85 HP Tractor	0.6	\$26.49		\$20,39	89.88	\$28.13	85,93			
- Flail Chopper	9,6			\$4,37	\$4.84	\$2,62	\$2,90			
-Summer Tipping-85 HP Tractor	0,5	\$26.49		\$20.39	89.88	\$23,44	\$4.04 \$4.04			
-Summer Tipping-Sickle Bar	0.5			\$5.51	\$9.13	\$2.76	48.27			
Mowing								\$8.94	\$7.04	
-85 HP Tractor	0.23	\$14.09		\$20.39	\$9.88	\$7.93	\$2.27			
-Rotary Mower	0.23			\$4.37	\$20.72	\$1.01	\$4.77			
Crop Protection								\$328.73	\$31.85	
-85 HP Tractor	6.98			\$20.39	\$9.88	\$19.98	\$9.68		1	
Orchard Sprayer	0.98			\$9,90	\$22.62	\$9.70	\$22.17			1
-Total Insecticide			\$58.30			\$58.30	\$0.00			
-Total Fungicide			\$187.02			\$187.02	\$0.00			
-Total Plant Growth Regultor			\$15.85			\$15.83	\$0.00			
-Total Spray Labor	1.43	\$26.49				\$37.88	\$0.00			
Borer Control			170000000000000000000000000000000000000					\$1,87	80.98	
-85 HP Tractor	0.03			\$20.39	\$9.88	\$0.61	\$0.30			
-Orchard Sprayer	0.03			\$9,90	\$22.62	\$0.30	\$0.68			
Labor	0.04	\$12.25	\$0,47			\$0.96	\$0.00			
Berbleide								\$25.87	\$1.80	***************************************
-60 HP Used Tractor	0.24			\$20.81	\$2.03	\$4,99	\$0.49			
-Weed Sprayer	0.24			\$0.84	\$5.47	\$0.20	\$3.33			
-Total Herbicide			10.87			\$10.87	\$0.00			
-Total labor	0.37	\$26.49				\$9.80	\$0.00			
Fortilizer		į						\$109.96	\$1.53	
-60 HP Used Tractor for Witrogen Application	0.3	\$26.49		\$20.81	\$2.03	\$14.19	\$0.61			
-Spin Spreader	0.3	:		\$0.88	\$2.33 .33	\$0.26	\$0.71			
-60 HP Used Tractor for Potassium Application	0.05	\$26.49		\$20.81	\$2,03	\$2.37	\$0,10			
-Spin Spreader	0.05			\$0.88	\$2,35	\$0.04	\$0.12			
-Fertilizer			\$83.70			\$83,70	\$0.00			
-Lime (2 Ton/Acre @ Each 5th Year)			\$9.40			\$9.40	\$0.00			
Bee Rental (1 Hive/3 Acres)			\$18.15					\$18.15	\$0.00	
Pest Management Service			\$27.50					\$27.50	\$0.00	
Pickup   140 miles/Acre (# 60 ccnts/Mile)				\$20.00	24 00			\$20.00	97	
TOTAL DEPENDENCE COSTS				NO.000	OCALAN			20.039	004.00	
A TO CALLY WAS ALL LOS AL LAND. CONTRACTOR OF THE CONTRACTOR OF TH	~	erikki erretde iden ere bidak kom			*****************************	***************************************	No. ACA WYCher workshipments as no reseases	907.570	865.35	

Table 3b (cont)

	Northwest	Large-scale	Northwest Large-scale growers Cash and Labor Costs per acre	and Labor Co	sets per acre	riendicher auch annua passan passan participation (mp. 1)	,	erenenterentere ta sotto-dept-erenter	***************************************	
Based on average saleable yield over its	ge salcable yie	id over its be	bearing lifetime of 9,000 lbs/acre (85 lbs/tree during poak bearing years)	of 9,000 lbs/e	rere (85 lbs/tr	ce during peal	c bearing year	(s.		
	Time	Labor	Materials	Eguín	Equipment	Total	est.	Total	25d	Your Farm
Operation	*(Mrs/A)	Cash	Cash	Cash	Non-cash	Cash	Non-cash	Cash	Non-cash	
LULAREN		(\$/faurr)	(\$/Acre)	(\$/Hom.	(\$/Mour)	(\$/Acre)	(\$/Acre)	(\$/Acre)	(\$/Acre)	
Harvest							•			
-Double Incline Shaket	20	\$40.58		\$39.93	\$34,10	\$144.92	\$61.38			
-85 MP Tractor/Forkill	50	\$14.09		\$20.39	89,88	\$62.06	\$17,78			
-60 HP used Tractor/Forklift	1.8	\$14,09		\$20.81	\$2.03	\$62.82	\$3.65			
-Sidmmer (or Miscellancous Labor)	1.8	\$12.25				\$22.05	\$0.00			
Shipping (.016 cent/pound*average yield)	ield)					\$142.00	\$0.00			
-Cooling Pad Operation (\$.006/fb*Avg Yield)	Yield)					\$53,25	\$0.00			
Tart Cherry Assessment (\$.005/10*Avg Yield)	g Yield)					\$44.38	\$0.00			
-Ethryl Application			\$4.60			\$4,60	\$0.00			
TOTAL HARVEST COSTS								\$536.08	\$82.82	
Management and Labor Supervision	9	\$25,00				\$150.00	\$0.00			
Interest on operating capital @ 8%						\$43,05	\$0.00			
Property Taxes	of Color ( And And And And And Annes as a second	**************************************	**************************************			\$30.00	\$0.00			
TOTAL MANAGEMENT, INTEREST, AND TAXES	O TAXES	\$1000000000000000000000000000000000000	***************************************		***************************************			\$223.05	\$0.00	-
TOTAL FRODUCTION COSTS	-							\$1,432,39	\$148.35	
TOTAL CASH AND NON-CASH COSTS /ACRE	ACRE							\$1 580 74	-	wholene

	0.0
	ひんくぶんしょう)
•	10011111107
(	Š
•	0.00

	Southwest C	Southwest Growers Cash and Labor Costs per sore	end Lanor	Coats per so	1.0	**************************************	ACMPTOTON CANADAM CANADAM CANADAM	and the state of t		Normal Vision Market Community and Community
Based on average saltable yield over its bearing	its bearing ili	ng lifetime of S,600 ibs/acre (54 ibs /tree average yield during peak bearing years)	0 lbs/acre (5	is ibs /tree e	verage yield	during peak	bearing yes	IB)		5
ELIA SERRELANIS LEKKA ARINNA OF HIGHMANNU/EXEVRITAN BOLLINUNGERLENNINGSTEINALLES GAAL/ARINJANJANJANJANJANA PRO	Time	Labor	Materiels	Equipment	mont	Total	rax	Totai		Farm
Operation	*(Hrg/A)	Cash	Cash	Cash	Non-cash	Cash	Non- cash	Cash	Non- cash	
	DECAULTURALAN PERMANANAN AND AND AND AND AND AND AND AND A	(%/heur)	(\$/Acre)	(\$/Hour)	(k/Hour)	(\$/Acre)	(\$/Acre)	(\$/Acre)	(S/Acre)	
Presentation of the second sec		TOOLS AND		And deliberation of the second or se	Option of Colodian annual a	7	***************************************	\$359.86	\$31.94	
-Pruning-Tower and Saw	Ó	\$11.75		\$9,31	\$2,56	\$127.85	\$15,36			
-Brush Disposal-60 HP Tractor	<b>∵</b> `	50 77 70 70 70		\$13,31	କ୍ଷ୍ୟୁ ପ୍ରକ୍ଷ୍ୟ	\$25.86	85,83 80			
-Brush Rake	,-··			\$0,28	\$1.85	\$0.28	\$1,86			
Summer Thping-85 HP Tractor	0.133	\$17.92		\$18,07	\$19,57	\$4.79	\$2,60			~
-Summer Tipping-Sickle Bar	0.133			\$2,77	846.83	\$6,37	\$6,23			Carlo Maranara Carlo Carlo Maranara Carlo
Disking						and the same of th	Approximate an approximate and	\$44,22	\$9,12	
-60 HP Tractor	.⊐ 53	\$17.92		\$15.11	\$5.89	\$43,60	\$7.77	CASSISSIAN ANTIONNA A	Portra Dalori da Arramona da A	
1.0 FT Discontinue	1,32			\$0,47	\$1,02	\$0.62	85.38			
Crop Fratection							Marketinin in the second	\$235,54	\$24.39	The same of the sa
-85 HP Tractor	0,806			\$18,07	\$19.37	\$14,56	\$15.77			- Contract of the contract of
-Orchard Sprayer	0,806			82,23	\$10,69	\$1,80	\$8,62			
-Total insecticide			840,91			840,91	\$0,00			
-Total Fungicide			\$137,74			\$137.74	\$0.00			
-Total Plant Crowth Regulators			\$18.92			\$18.92	\$0.00			
-Yotal Spray Labor	1,206	\$17.92				\$21.61	\$0.00			
Borer Coatrol								\$2.07	80,91	
-85 HP Tractor	0.03			\$18,07	\$19.37	\$0.54	\$0,59			A CONTRACTOR CONTRACTO
-Orchard Sprayer	0,03			82,23	\$10.69	\$0.07	\$0,32			
COLIVE A COLIVE A COLIVERA DE	0.124	211.75				\$1.46	\$0.00			
Newscide							and a second and the	\$14,33	\$4.14	The state of the s
-60 HP Tractor	0.38			\$15.33	\$5,89	\$4.23	\$1.65	te/artementer error derroringer		The transmission of the second
-Weed Sprayer	0.38			\$0,86	88.93	\$0,34	\$2.40		Port of Association	
-Total Herbicide			4,92			\$4,93	\$0.00		*	
-Total labor	0,42	811.78				84,04	\$0,00		F	
Fertilizar								898,54	\$1.50	
-60 HP Used Tractor for Nitrogen Application	0.3	\$11.75		\$31.10	\$2.71	\$4,29	\$0.27	معدمتان وموسون أوران والمراث أوسون المراث أوسو		
-Spin Spreader	0.1			50.74	\$7.30	\$0.07	\$0.73		EA-4	
-60 HP Used Tractor for Potassium Application	0,05	\$11.75		\$31,30	\$2.71	\$2.14	80,14			
-Spin Spreader	0.05			\$0.74	08.730	\$0.04	\$0,37			
-Fertliker			880,28			\$80,25	\$0.00			
Lime (2 Ton/Acre @ Each 4th Year)			811.75			\$11.75	\$0.00			
			(17)							

Bes Reatal (I Hive/2 Acres)	02 CC\$	0000	2000
	ı	00.0¢	
Fore Management Gerylce	\$0.00	\$0.00	
Pickup		-	
(40 miles/Acre @ 50 cents/Mile) 84.00	820.00	\$4 DO	ana ana
A THE PERSON NAMED AND PARTY OF THE PROPERTY OF THE PROPERTY OF THE PERSON NAMED AND THE PERS	The state of the s		
TO A THE SECOND	20 CORS	876.03	

Table 3c (cont)

	Sout	hwest Grows	Southwest Growers Cash and Labor Costs per acre	Labor Costs	or gare	AAATTAA AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	50700000000000000000000000000000000000	المعاونة والمعارضة ومعارضه والمعاط فالمعاط والمعاط وال	4425470154114	Control of the Contro
Based on average saleable yield over its bearing lifetime of 3,600 ibs/acre (54 ibs /acre average yield during peak bearing years)	ld over its be	ering lifetime	/sq: 009'S to a	acre (54 lbs /	acre average	rield during p	sak bearing ye	ears)		ener est de deserr
овання в при	Thme	Labor	Materials	Equipment	nent	Total	2,1	Total	···	Your
Operation	*(Mrs/A)	Cash	Cash	Cash	Non-cash	Cash	Non-cash	Casti	Non- cash	
		(s/hour)	(\$/Acre)	(S/Hour)	(\$/Hour)	(\$/Acre)	(\$/Acre)	(第/Acro)	(\$/Acre)	The state of the s
Statugat										
-Dauble Incline Shaker	CV.	\$35.84		\$86.19	\$79,07	\$244.06	\$158,14		.k	The second of th
-60 HF Tractor/Forklift	C4	\$11.75		\$15.11	\$5.89	\$53.72	811.78		.i	
-60 HP used Tractor/Forklift	<b>C</b> 2	811.73		\$33.10	\$2,73	\$85,70	\$5.42		.}	
-Skimmer (or Miscellaneous Labor)	6.6	\$5.81 83.81				\$17.62	\$0.00		<u> </u>	
-Shipping (.016 cent/pound*Avg Yield)						\$89,60	\$0.00		1	7
-Cooling Pad Operation (\$.006/15*Avg Yield)						\$33.60	80.00		<u>!</u>	, area 4 area 6
-Tart Cherry Assessment (\$.005/1b*Avg Yield)						\$28,00	\$0.00		£	***************************************
-Ethry Application	, ii a a san tu a a san san san san san san san san san		84.50			84,30	30,00		ž	
TOTAL HARVEST COSTS	e Constraint and the constraint	- Charles of the Control of the Cont						\$556.80	\$175,34	The second secon
Razagoment and Labor Supercialon	₹′D	\$28,83				\$86.49	80.00			Correction on the contraction of
Interest on operating capital @ 8%						\$39.86	80.00		L	
Property Taxes	AND CONTRACTOR OF THE PROPERTY OF THE PROPERTY OF THE PERSON OF THE PERS	***************************************				\$30.00	\$0.00			
Total management, interest, and taxee	enerale de disconence de la companyone d	يعينها إمعية وتراحمه معيام عنواط عاما كالمنافظة وتروافك الأ	- PARTICIPATION OF THE PROPERTY OF THE PARTICIPATION OF THE PARTICIPATIO	C/G/ID/ODD/Well/Articles/Distriction/Charles	·			\$156.35	\$0.00	
TOTAL PRODUCTION COSTS/ACRE	E CHARLEST AND STRUMENT AND STR		**************************************	CANADA TARAN MANAGAMAN AND AND AND AND AND AND AND AND AND A				\$1,310.20	8251,35	
TOTAL CASH AND NON-CASH COSTS /ACRE	جاريات والمساولات ومعودة ومعارضه والمعارفة والمالة		at the control of the					\$1,861.55		

Table 3d, West Central Growers

Operation         Time         Labor         Materials         Equipment         Total           Printing         **(Hire/A)** Cash         Cash         Cash         Cash         Cash           Printing         **Printing         **(S/Hour)** (\$/Hour)** (\$/	Labor Cesh (\$/hour)	Materials	Equipment	meat	T.	Total	Total		Your
	Cash (\$/hour)	Materials	Rouss	ment	Ę.	tai	30%	-	:
(###   ###	Cesh (\$/hour) \$12.55		and the second second second	Charles Control of the Control of th			4.5		Fatte
irg-Tower and Saw 5.5 h Disposal-85 HP Tractor 0.5 Chopper 0.5 ner Tipping-85 HP Tractor 0.1 ner Tipping-81ckle Bar 0.1 Y Mower 0.27 teatton	18/neur] 812,55	Cash	Cash	Non-cash	Cash	Non- cash	Cash	Non- cash	
ing-Tower and Saw  5.5  Chopper  Disposal-85 HP Tractor  0.5  Der Tipping-85 HP Tractor  0.1  Tractor  Tractor  Wower  0.27  Mower	\$12,55	(\$/Acre}	(%/Hour)	(\$/Hour)	(\$/Acre)	(\$/Acre)	(\$/Acre)	(\$/Acre)	
al-85 HP Tractor 0.5 0.5 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	00.000	Welchelbertermerrane and the second	20 00			**************************************	\$1.70	525,40	
0.5 hr 11 ection 0.5 hr 12 ection 0.5 hr 12 ection 0.1 hr 25 ection 0.1 hr 25 ection 0.27 ection 0.27			N 10	20 T 20 T	05,212	\$5.00 \$5.00			The state of the s
0.1 Ing-Sickle Bar 0.1 0.27	80.27.8		818.93	89.04	\$15,74	요. 소. 요.			
0.1 Ing-Sickle Bar 0.1 0.27			83.25	89,30	81.63	84,65		,1	
0.27	\$22,61		818,93	89,04	24.13	\$0.90		<i>-</i>	
0.27	A PROPERTY OF STREET,	open) — process produces as a second of the second of	\$2,81	\$60.88	\$0.28	\$6,09			
0.27							06'6\$	85,08	
	812.08		\$18.93	\$9,04	\$8.30	\$2.44			
			\$5.18	\$9.77	431.40	\$2.64		f	
The state of the s							\$304,18	\$14.81	
-85 HP Tractor 0.744			\$18.93	\$9.04	\$14,08	\$6.73	ert demonstrates and a second		A COLUMN TO THE PROPERTY OF THE PARTY OF THE
-Orchard Sprayer 0,744			\$2,23	\$10.87	\$1.66	\$3.09		i	
-Total insacticide		\$58.30			858,30	\$0,00			***************************************
-Total Pungicide		\$187.02			\$187,02	\$0.00		<u>.</u>	
Total Plant Growth Regulators		కి. కి.			94 15 15 15 15 15	80.00		ž	***************************************
-Total Spray Labor	\$22.61				\$27.27	\$0.00		Ł,	
Borar Control							\$4,35	\$1.23	ANT THE RESIDENCE CONTRACTOR OF THE PARTY OF
-85 HP Tractor 8.062			\$18.93	\$9.04	\$1.17	80,56	Activities of the second secon	The same of the sa	
Orchard Sprayer (hand held)			62.23	\$10,87	\$0.14	50,08		3	
\$ 5000	\$12.55	\$1.87			\$3,04	\$0.00		J	
			THE REAL PROPERTY IN LEGAL LIVES FROM THE	70000000000000000000000000000000000000	CONT. LO ANNO NECESSAR WAS A SECOND	AND TOTAL STORY TO BE THE STORY OF THE STORY	\$22,39	\$3.92	
-60 HP Tractor 0,24			\$13,23	\$9,03	\$3.18	\$2.17	M400 1100 000 000 000 000 000 000 000 000	-	
-Weed Sprayer			\$0.86	\$7.30	\$0.2	\$1.78		<u></u>	
-Potal Herbicide		10.87			\$10,87	\$0.00		\$	
-Fotal labor	\$22,61				SS 14	\$0.00		1	222
ла поменя вываля раздада до до дерубую в порового то во предела поменя выполняем на поменя дельнува выпуска в п							\$109,25	\$1,68	STOCKET STOCKE
acter for Nitrogen Application 0.175	\$12.55		\$11.83	\$2.05	\$4,27	\$0,36			Production of the second secon
0.178			62.08	\$3.80	\$0,14	50,67			
actor for Potassium Application 0.113	\$12.55		\$11.83	\$2,03	\$2.73	\$0,23			
Spin Spreader 0.113			\$0.79	\$3.80	80,09	80.43			
-Fertilizer		\$90.35			\$90,25	\$0.00		S	
Jame (2 Ten/Acre @ Bach 4th Year)		\$11,73			\$11.75	\$0.00		<b>!</b>	
Zee Rental (1 Hive/3 Acres)		814,85					814,85	\$0,00	
Post Management Borvice		\$30,00	***************************************	) h'rest et that de Listanies announce es es en res		and the state of t	\$30,00	\$0.00	

Table 3d (cont)

West Cen Based on average saleable yield over its bearing	West over its bee	West Central Growers Cast Based on everage saleable yield over its bearing lifetime of 6,300 II	wers Cash ar of 6,300 lbs/	West Central Growers Cash and Labor Costs per acre is bearing lifetime of 6,300 lbs/per acre (60 lbs /acre av	Costs per acre (60 lbs /acre average y	tral Growers Cash and Labor Costs per acre Metime of 5,300 ibs/per acre (60 ibs /acre average yield during peak bearing years)	g pesik bearir	ir years		
Tina Labor	21ma	Labor	Materials	Equipment	nent	Total	good.	Total	ž,	Your Farm
Operation	"(Hrs/A)	Cash (\$/hourd	Cash (\$ / 4 crel	Cash (\$/Mount	Non-cash (\$/How	Cash (*/Acre)	Nen-cash	Cash (\$/4cms)	Non-cash	Valencia de la composição de la composiç
Rarveat		(epoper (cu)	(5 cm / 5)	(men./m)	depos Jed	(ny no ) m	(a) (b) (c) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	(s) Oracl	(5.004/6)	Section of Control of
-Used One Man Shaker	C)	\$22.61		855,09	80 00 00 00 00 00	\$155.40	\$111,66			
-85 HP Tractor/Forkliff	Cl	\$12.58		56,818,93	\$9.04	\$62.96	\$18.08			
-60 HP used Tractor/Fortdift	es.	\$12,55		\$11.83	\$3.03	\$48.76	\$4,10			
-Skimmer for Miscellaneous Labor)	62	\$9,86				\$19.72	\$0.00			
-Shipping (.016 cent/pound"Avg Yield)						\$100.80	\$0.00			
-Cooling Ped Operation (8.006/15*Avg Yield)						\$37.80	\$0.00			
-Tart Cherry Assessment (\$.005/16"Avg Yield)						\$31.50	80.00			
-Estry Application	e en fait fait fait ann an faith fai	e) man de la de	34,50		Can be on a consequent to the consequence of the co	\$4.50	\$0.00			CONTRACTOR DESCRIPTION OF THE PROPERTY AND ADDRESS OF THE PROPERTY
TOTAL RARVEST COSTS			HOLESTON SCHOOL STATE STATE SCHOOL SC					8461,44	\$133,84	
Management and Labor Supervision	ଫ ଫ	\$28,83				\$103.79	\$0.00			and a foreign of the Solding
Interest on operating capital @ 8%						\$41.17	00'08			
Proposty Texas	200000000000000000000000000000000000000	100 may				\$30,00	00'08			
TOTAL MANAGEMENT, INTEREST, AND TAXES	88	09006444441001009440040040040		COCCUPATION OF THE COCCUPATION O	edeletesvist. Citationis and associates	is de la company		\$174,96	\$0.00	
TOTAL PRODUCTION COSTS/ACRE	1.2 J. T. Landon M. Color (A. C. A. C.							\$1,293,02	\$189.97	
TOTAL CASH AND NON-CASH COSTS /ACRE								\$1,637,98		

## Appendix

## Equipment Costs

Factors considered in the following computations include initial cost, salvage value, years of useful life, annual usage, repair costs, insurance costs, and costs associated with operation of the equipment, such as fuel and oil. The initial cost, salvage value and interest rate are used to calculate a capital recovery charge (depreciation + interest on average investment).

Annual and hourly equipment costs were calculated in Table 4. Tables 4a and 4b describe costs for mid-sizeder sized Northwest growers. Tables 4c and 4d describe costs for larger sized Northwest growers. Tables 4e and 4f and 4g and 4h describe the describe costs for Southwest and West Central Growers, respectively

#### Fertilizer Costs

Fertilizer costs are presented in Tables 5a, 5b, and 5c for the Northwest, Southwest, and West Central growing region, respectively.

Table 4. Annual and Routly Equipment Costs
Table 4a. Annual Costs for Mid-sized Scale Northwest Growers

Annual Equipment Costs for Mid-sizeder Scale Northwest Michigan Growers

Description	5-4 2	Purchase Vr Price	Yrs Life	Saivage Value	PV of Salvage in today's dollars	Interest Rate	Annuel Machinery Cost	Insurance	E SXOS	70fജ
1.0	2007	\$45,765	8.0	\$6,865	\$3,709	8%	\$7,318	\$114	\$0	87.433
<u>-</u> -	1999	88,306	9,0	\$1,246	\$623	88%	81,130	82	. 69 C.	56. 1.1. 1.0. 1.0. 1.0. 1.0. 1.0. 1.0. 1.
CA	2007	\$84,750	S. S.	\$30,000	\$11,464	8%	\$7,089	\$2.22 22.22	. S.	87,301
CS:	2007	\$22,600	12.0	\$7,049	\$2,799	8%	\$2,064	8357	80 08	\$2,320
€.3	2002	84,520	12.0	\$1,410	\$560	%8	48 44 60 60		SO	\$47¢
	2002	\$3,277	15.0	\$808	\$25B	%8	\$288	හ	Ş	\$297
	2002	810,848	10,0	\$3,212	\$1,488	8%	\$1,138	\$27	OS:	\$1,165
	TOTAL	\$180,066					\$19,440			\$19,890

Table 4b. Hourly Costs for Mid-sized Scale Northwest Growers

		*Total Hours	Fours for Tart	Catter				*** Physics 28	9 4 5 6	ار د د
Description	Yy	Used	Chernes	Recovery	insurance	Taxes	**Repairs	aqrı	Oper.	Costs/hr
75 HP 2WD Trector	2007	754	377	\$20,71	\$0.15	\$0.00	4.64	\$13,96	\$18.61	\$28.46
60 HP 2WD Used tractor	ōŏōĭ	654	327	\$1.73	\$0.03	\$0.00	\$17.53	\$11.17	\$28.70	\$30,46
Shaker	2007	300	200	\$23.63	\$0.71	\$0.00	\$22,60	\$27.92	\$50,52	\$74,86
Orch, Sprayer 500 G	2007	166	සි	\$12.43	\$0.34	\$0.00	\$2.71	\$0.00	\$2.71	\$15,48
Weed Sprayer 100 G	2002	94	4	84.39	\$0.12	\$0.00	\$0.72	\$0.00	\$0.72	85,23
Rotary Mower	2002	06	2. 10.	80.21	80,08	\$0.00	\$0.61	80.00	80.61	\$3.91
Fiall Mower	200%	166	83	\$6,86	\$0.16	\$0.00	\$3.30	\$0.00	\$3.30	\$10.32
Total										\$168,72

<sup>&</sup>quot; assumes that other half of the farm uses the equipment equally, except for the shaker, which is used on 75% of total acreage.

<sup>\*\*</sup>see averages generated in Misc. Tables, formulas from ASAE, tractor functions resealed to 6000 hours

<sup>\*\*\* \$4.25/</sup>gai for diesel

Table 4c. Annual Costs for Large Scale Northwest Growers

(I)
1
Oro.
0
hwest Michigan
, C
7
و
80
orthwes
7
Ö
$\approx$
స్ట
Ö
o <sub>2</sub>
5
5
2
Annual Equipment Costs for Larger-Scale North
\$
S
Ç
근
5
8
Ė
Ó
:21
ផ្ដ
JE
G
-C-

Description	I / /	Purchase Price	Yrs Life	Salvage Value	FV of Salvage in today's dollars	Interest Rate	Annual Machinery Cost	msurance	با س س م	ïota]
85 HP 2WD Tractor	2002	\$46,895	7.0	\$7,034	\$4,104	8%	\$8.219	\$1.17	80	\$8.336
60 MP 2WD Tractor	2007	\$32,770	6.0	84,916	\$3,098	8%	\$6,419	66 68 88	(A)	\$6,801
60 HP 2WD Used Tractor	2001	88,306	6.0	81,246	8785	8%	\$1,627	<del>(8)</del>	8	\$3,648
Shaker	2007	\$1,69,500	12.5	\$30,000	\$11,464	8%	\$20,462	\$424	Q.	820,886
Orch. Sprayer 500 G	2002	\$56,500	12,3	\$17,126	\$6,544	8%	\$6,468	4 <u>4</u>	- <del>6</del> 5	\$6.609
Weed Sprayer 100 G	2007	84,520	12.0	\$1,410	\$560	8%	88233	 •⊃ •⊙	S	6537
Rotary mower (batwing)	2007	\$18,080	0.85	\$4,457	\$1,405	8%	\$1,948	80 10	- Os	\$1,993
Flaii Mower	2002	\$9,040	10.0	\$2,677	\$1,240	8%	81,162	ණ ලද	Cy Cy	83. 1. 83. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
Spin/Spreader -3FT	2002	82,828	12.0	\$881	\$350	%8	\$328	€6 (4	- 68 - 69	යියියින
Síckie bar	2007	\$16,930	15.0	\$4,179	\$1,317	%8	\$1,825	99 44 64	<u>\$</u>	\$1,869
TOTAL \$365,386		\$365,386					\$48,985			849,899

Table 4d. Hourly Costs for Large Scale Northwest Orowers

		"Totai Hours	Hours for Tart	Capital				er Fuel	Total.	Notes
Description	Y !	Used	Cherries	Recovery	insurance	Taxes	**Repairs	Lube	Oper.	Costs/hr
85 HP 2WD Tractor	2007	832	416	88,08	50.14	\$0.00	84.43	\$15.82	\$20.25	\$30.27
60 HP 2WD Tractor	2002	1000	500	\$6.42	80.08	\$0.00	\$3,45	\$11,17	\$14.52	\$21,128
60 HP 2WD Used Tractor	2001	800	400	\$2.03	80.03	\$0.00	\$9,63	\$11.17	\$20.79	\$22.84
Shaker	2002	009	400	\$34,10	\$0.71	\$0.00	\$11,30	\$27.92	\$39,22	874.03
Orch.Sprayer 500 G	2007	286	 84	\$22.62	80.49	30,00	\$9,40	\$0.00	\$9,40	\$32,51
Weed Sprayer 100 G	2002	96	48	とで、の名	\$0.12	\$0.00	\$0,72	80.00	\$0.73	\$6,31
Rotary mower	2002	Q).	47	\$30,72	\$0,48	\$0.00	\$3.34	80.00	40.00 40.00	\$24,74
Flail Mower	2002	340	120	48,48	\$0.09	80.00	84.27	00'0%	\$4,27	89,21
Splu/Spreader -3PT	2007	140	70	32,35	80.05	\$0.00	\$0.82	\$0.00	\$0.82	\$3,23
Sickle Bar	2002	200	100	\$9.13	\$0.21	\$0.00	88,30	\$0.00	85,30	314,64
Total										\$238,91

<sup>\*</sup> assumes that other half of the farm uses the equipment equally, except for the shaker, which is used on 75% of total acreage. \*\*see averages generated in Misc. Tables, formulas from ASAE, tractor functions rescaled to 6000 hours

\*\*\* \$4.25/gal for diesel

Table 4e. Annual Costs for Southwest Growers

07
- t-
5
owe
100
Ç,
_
<u>a</u>
Ċ
st Mich
1
_
400
ů,
8
£
4
2
20
for South
ö
Ψ,
osts 1
(7)
Ŗ
Ç
447
37
č
Ε
್ಷ
Ç
12.1
Annuai
2
Ē
ä
3
•

Description	<i></i>	Purchase Price	Yrs Life	Salvage Value	PV of Salvage in today's dollars	Interest Rate	Annual Machinery Cost	Insurance	:- : : : : : : : : : : : : : : : : : :	(g) (c)
85 HP 2WD Tractor	2007	\$46,895	12,0	\$7,034	\$2,793	8%	\$5.852	\$117	08	\$5.969
60 HP 2WD Tractor	2007	\$32,770	5.0 0	\$4,916	83,345	8%	\$7,370	\$\$ \$\$	- OS	2004,78
60 HP 2WD Used Tractor	2000	\$8,306	6.0	\$1,246	\$785	8%	\$1,627	\$21	0\$	\$1,648
Shaker	2002	\$84,750	S S	\$30,000	\$11,464	8%	89,489	8212	<b>\$</b>	\$9,701
Orch.Sprayer 500 G	2007	\$22,600	(% (%)	\$6,850	\$2,518	8%	82,587	\$57	Ç.	\$2,644
Weed Sprayer 100 G	2007	\$4,520	12,0	\$1,410	Ø560	8%	8525	\$11	08	<b>トのの</b> の
Spin/Spreader -3PT	2007	\$2,825	12.0	\$881	\$350	%8	\$328	82	08	8335
Sickle bar	2002	\$15,950	15,0	\$4,179	81,317	8%	\$1,826	\$42	ÇŞ.	\$1,869
Pruning Tower & Hyd. Saw	2007	\$23,165	14.0	\$1,000	\$340	%8	\$2,769	\$58	08) (8)	\$2,826
Brush rake	2007	\$3,051	28.0	8459.31	\$67	8%	\$280	80 <del>60</del>	\$0	\$287
10 ft. Disc plow	2007	\$2,260	S.O.	\$940.31	\$640	8%	\$406	\$6	S	3411
TOTAL		\$248,092					833,059	\$620		\$33,679

Table 4f. Hourly Costs for Southwest Growers

		Ho	arly Equipmen	at Costs for Sc	Costs for Southwest Region	£				
		*Total	Hours for			TOTAL CONTRACTOR CONTR	TOTAL THE PROPERTY OF THE PARTY	*** Fuel	ordinostro estro oldino ostas exam	arramana ta (vivina) esta esta esta esta esta esta esta esta
		Hours	Tert	Capital				చ	Total.	Total
Description	Y.z	Úsed	Cherries	Recovery	Insurance	Taxes	**Repairs	Lube	Oper,	Costs/hr
85 HP 2WD Tractor	2002	568	89.8 89.8	\$19.57	\$0.39	\$0.00	\$1.85 58.18	\$15.82	\$17.68	\$30.42
60 HP 2WD Tractor	2002	1251	250.2	\$8,89	\$0.04	\$0,00	88,88	\$11.17	\$15,04	\$15.90
60 MP 2WD Used Tractor	2000	900	120	\$2,71	\$0.03	\$0.00	\$19.90	\$11,17	\$31.07	\$28,72
Shaker	2002	120	120	\$79,07	\$1.77	80.00	\$56,30	\$27.92	\$84,42	\$152,52
Orch.Sprayer 500 G	2002	9.45	4.84	\$10.69	\$0.23	80.00	\$2,00	\$0.00	\$2,00	\$12.92
Weed Sprayer 100 G	2002	59	3.8	\$8,91	\$0.19	80.00	\$0.67	\$0.00	\$0,67	\$9.76
Spin/Spreader -3FT	2002	4. PO	O)	\$7.30	\$0.16	\$0.00	80.39	\$0.00	\$0.59	\$8,04
Sickie Bar	2002	30	7,00	\$46.83	\$1,09	\$0.00	\$1,68	\$0.00	\$1.68	\$49,60
Pruning Tower & Hyd. Saw	2002	1080	360	\$2,56	\$0.05	\$0.00	80,96	\$8.50	\$9,46	\$6.73
Brush rake	2002	150	30	\$3,86	\$0.05	\$0.00	\$0.23	\$0.00	\$0.23	\$2,14
10 ft. disc plow	2007	396	79.3	\$1.02	\$0.03	80'00	\$0.45	\$0.00	80.45	81.49
TOUS!		********************************				CONTRACTOR				\$327.22

<sup>\*</sup> assumes that other half of the farm uses the equipment equally, except for the shaker, which is used on 75% of total acreage.

<sup>\*\*</sup>see averages generated in Misc. Tables, formulas from ASAE, tractor functions rescaled to 6000 hours

<sup>\*\*\* \$4.25/</sup>gal for diesel

Table 4g. Annual Costs for West Central Growers

5.14/710.
Č
Wichigan
Vest Central
,
for
Costs
pment
Edu
Annual Equ

		Chr. A.	A CALLA STANDARD CONTRACTOR CONTR	THE CONTRACTOR OF THE CONTRACT
%	\$4,104 8%	87,034 84,104 8%	7.0 87,034 84,104 8%	846,895 7.0 87,034 84,104 8%
%8	81,952	84,916 81,952 8%	12.0 84,916 81,952 8%	33,770 12,0 84,916 81,952 8%
%&	\$623	\$1,246 \$623 8%	9.0 \$1,246 \$623 8%	\$8,306 9.0 \$1,246 \$623 8%
%	811,464 8%	\$30,000 \$11,464 8%	12.5 \$30,000 \$11,464 8%	\$54,750 12.5 \$30,000 \$11,464 8%
%8	\$2,799	\$7,049 \$2,799 8%	12.0 \$7,049 \$2,799 8%	\$22,600 12.0 \$7,049 \$2,799 8%
%8	\$550 8%	\$1,410 \$560 8%	12.0 \$1,410 \$560 8%	84,520 12.0 \$1,410 \$560 8%
8%	\$1,142 8%	\$3,621 \$1,142 8%	15.0 \$3,621 \$1,142 8%	\$14,690 15.0 \$3,621 \$1,142 8%
88%	\$1,488 8%	\$3,212 \$1,488 8%	\$3,212 \$1,488 8%	\$10,848 10.0 \$3,212 \$1,488 8%
	\$1,317 8%	\$4,179 \$1,317 8%	15.0 84,179 \$1,317 8%	16,950 15,0 84,179 \$1,317 8%
%8 %8 %8	\$1,488 8% \$1,317 8%	\$3,212 \$1,488 8% \$4,179 \$1,317 8%	10.0 \$3,212 \$1,488 8% 15.0 \$4,179 \$1,317 8%	\$10,848 10.0 \$3,212 \$1,488 8% 16,950 15.0 \$4,179 \$1,317 8%
\$1,952 \$623 \$11,464 \$2,799 \$560 \$1,142 \$1,317		\$4,916 \$1,246 \$30,000 \$7,049 \$1,410 \$3,521 \$4,179		\$32,770 12.0 \$4,916 \$32,770 12.0 \$4,916 \$32,770 12.0 \$1,246 \$22,600 12.0 \$7,049 \$4,520 12.0 \$1,410 \$14,690 15.0 \$3,621 \$10,848 10.0 \$3,212 \$16,950 15.0 \$4,179
	\$4,916 \$1,246 \$30,000 \$7,049 \$1,410 \$3,521 \$4,179		2 4 6 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	\$32,770 12.0 \$83,770 12.0 \$8,306 9.0 \$22,600 12.5 \$4,520 12.0 \$14,690 15.0 \$10,848 10.0

Table 4h. Hourly Costs for West Centrel Growers

өүйөнө 14 мд ибон ий милиминий марарунда үнөө бай баламын камануль айман өмөмөн коммилий комминикан байын байы	de d'imperatore de la conse	00 teleboles esta esta esta esta esta esta esta es	Ę	Hourly Equipment Costs for West Central Region	r West Centre	l Region	**************************************	1). 1).	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
		"Total	Hours for Tart	Capitel				क्षेत्र मुग्नाह्य क्षेत्र	() ()	
Description	V.	Hours Used	Cherries	Recovery	Insurance	Taxes	**Repairs	Lube	Oper.	Costs/br
85 HP 2WD Tractor	2007	606	227	\$9,04	\$0.13	\$0.00	\$4.84	\$13.96	\$18.80	\$21.60
60 HP 2WD Tractor	2007	\$3.00 \$0.00		89.03	\$0.18	\$0.00	20.197	\$11.17	会 (10) (4) (4)	100 N
60 HP 2WD Used tractor	2000	600	150	\$2,05	\$0.03	\$0.00	\$0.62	\$11.37	\$3.1.79	88.78
Shaker	2007	170	150	858,89	\$1.25	\$0.00	\$39,88	813,96	\$3.50 \$3.50 \$3.50	\$104.83
Orch.Sprayer 500 G	2007	242	90	\$10.87	\$0.23	\$0,00	\$2,00	80.00	82,00	813.10
Weed Sprayer 100 G	2007	73	18	\$7.30	\$0.16	\$0.00	90,70	\$0.00	\$0.70	\$8,16
Rotary Mower	2002	162	*	\$9,77	\$0.23	\$0.00	84,00	\$0,00	84.03	\$2 \$0 \$0 \$0
Flaii Mower	2007	130	38	\$9.30	\$0.18	80,00	\$3.07	\$0,00 \$	\$3.07	200 C C C C C C C C C C C C C C C C C C
Sickle Bar	2002	30	90	\$60.88	\$3.41	\$0.00	\$1.40 0.40	\$0.00	40 04.1.40	863.69
Spin/Spreader -3FT Priming Town & Myd	2002	86	22	\$3.80	\$0.08	\$0.00	\$0,71	\$0.00	\$0.71	\$4.59
Saw Saw	2002	1652	433	\$1,08	\$0.04	\$0.00	\$0,71	\$6 \$0 \$0 \$0 \$0	\$9.21	85.35 35.35
Total	sidosassesses, que apaqu	***************************************	ADDIEGO CONSTRUENCIA (ANTARCA POR							\$284.29

<sup>\*</sup> assumes that other half of the farm uses the equipment equally, except for the shaker, which is used on 75% of total acreage. \*\*see averages generated in Misc. Tables, formulas from ASAE, tractor functions receled to 6000 hours

\*\*\* \$4.25/gal for diese!

Table 5. Fertilizer Costs
Table 5a. Northwest Fertilizer Costs

	Northwest - Large and Mid-sized producers				
				Cost/Acre	
Total Fungicide				\$187.02	
Total Insecticide				\$58.30	
Total Plant growth regulator				\$15.85	
Total Herbicide				\$10.87	
	Quantity per				
Fertilizer	acre	Ünit	Cost/Unit	Cost/Acre	
Poliar fertilizer:					
0-0-60 (potash)	0.05	ton	\$400	\$20.00	
46-0-0 (urea)	0.098	ton	\$650	\$63.70	
Total Vertilizer	NATURE CONTRACTOR CONT			\$83.70	
Bee Rental	0.33	hive	\$55	\$18.15	
Total			· · · · · · · · · · · · · · · · · · ·	\$373.89	

Table 5b. Southwest Fertilizer Costs

	Southwest				
	Cost/Acre				
Total Fungicide				\$137.74	
Total Insecticide				\$40.91	
Total Plant growth regulator				\$18.92	
Total Herbicide				\$4.92	
	Quantity per				
Fertilizer	acre	& Jveë £	Cost/Unit	Cost/Acre	
Foliar femilizer:					
0-0-60 (potash)	0.042	ion	\$400	\$16.67	
46-0-0 (urea)	0.098	ion	\$650	\$63.59	
Total Fertilizer				\$80.25	
Bee Rental	0.5	hive	\$45	\$22.50	
Total				\$305.24	

Table 5c. West Central Fertilizer Costs

Total Fungicide Total Insecticide Total Flant growth regulator Total Herbicide	West Central				
	POPERAL LIANS WAS ASSOCIATED ASSOCIATION OF THE POPERAL PROPERTY OF THE POPERA			Cost/Acre \$187.02 \$58.30 \$15.85 \$10.87	
Fertilizer Foliar fertilizer:	Quantity per acre	Vnit	Cost/Unit	Cost/Acre	
0-0-60 (potash) 46-0-0 (urca) Total Fertilizer	0.067 0.098	ton ton	\$400 \$650	\$26.67 \$63.59 \$90.25	
Bee Rental	0.33	bives	\$45	\$14.85	
Total				\$377.14	