

## **SAMPLE COSTS FOR SWEET CHERRIES**



**TO ESTABLISH AN ORCHARD AND  
PRODUCE SWEET CHERRIES  
SAN JOAQUIN VALLEY- NORTH  
Micro-Sprinkler Irrigation  
2017**

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UC AGRICULTURE AND NATURAL RESOURCES  
COOPERATIVE EXTENSION  
AGRICULTURAL ISSUES CENTER  
UC DAVIS DEPARTMENT OF AGRICULTURAL AND RESOURCE ECONOMICS

**SAMPLE COST TO ESTABLISH AN ORCHARD AND PRODUCE SWEET CHERRIES**  
**San Joaquin Valley - North 2016**

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**INTRODUCTION**

Sample costs to establish a cherry orchard and produce cherries using micro-sprinkler irrigation in the northern San Joaquin Valley are presented in this study. This study is intended as a guide only. It can be used to guide production decisions, estimate potential returns, prepare budgets and evaluate production loans. Sample costs given for labor, materials, equipment and contract services are based on January 2017 figures. Practices described are based on production practices considered typical for the crop and area, but will not apply to every situation. A blank column titled Your Costs is provided in Tables 2 and 3 to enter your estimated costs.

For an explanation of calculations used in the study refer to the section titled Assumptions. For more information contact Jeremy Murdock; University of California Agriculture and Natural Resources, Agricultural Issues Center, Department of Agricultural and Resource Economics, at 530-752-4651 or [jmmurdock@ucdavis.edu](mailto:jmmurdock@ucdavis.edu). The local extension office can be contacted through Joe Grant, [jagrant@ucanr.edu](mailto:jagrant@ucanr.edu), UCCE, San Joaquin County.

Sample Cost of Production studies for many commodities are available and can be down loaded from the website, <http://coststudies.ucdavis.edu>. Archived studies are also available on the website.

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## ASSUMPTIONS

The assumptions refer to Tables 1 to 8 and pertain to sample costs to establish an orchard and produce cherries under micro-sprinkler irrigation in the northern San Joaquin Valley. The cultural practices described represent production operations and materials considered typical for a well-managed farm in the region. Costs, materials, and practices in this study will not apply to all farms. Timing of and types of cultural practices will vary among growers within the region and from season to season due to variables such as weather, soil, insect and disease pressure. The study is intended as a guide only. **The use of trade names and cultural practices in this report does not constitute an endorsement or recommendation by the University of California nor is any criticism implied by omission of other similar products or cultural practices.**

**Land.** The hypothetical farm consists of 80 contiguous acres of land. Cherries are being established on 40 acres, other crops occupy 36 acres, and roads, irrigation system, equipment yard, and shop occupy four acres. The owner farms the orchard.

### Establishment Cultural Practices and Material Inputs

The following practices refer to Table 1.

**Site Preparation.** The land was previously planted to cherries. Orchard removal costs are not included in this study. All operations that prepare the orchard for planting are normally done the year prior to planting, but costs are shown in the first year. The site is subsoiled twice to break up any hardpan, and pull-up old tree roots, then disced twice, followed by laser leveling. The field is then strip (tree row) fumigated, untarped. Fumigation before planting is based on previous crop history and nematode sampling. Custom operators are hired to subsoil, disc, level, and fumigate.

**Trees.** No specific sweet cherry variety or rootstock is assumed in this study. Some varieties that may be planted in the northern San Joaquin Valley include Bing (planted on the majority of the acreage), Coral Champagne, Chelan, and Rainier in the northern San Joaquin Valley and Brooks, Tulare, and Coral Champagne. Trees are planted on an 18-foot X 18-foot spacing or 134 trees per acre. The life of the orchard in this study is assumed to be 25 years.

**Planting, Training, and Pruning.** Planting the orchard starts by surveying and marking tree sites. Trees are planted and painted with white interior water-base latex paint (mixed 1:1 with water) to protect against sunburn. Carton or wraps are placed around the tree to protect against damage by vertebrate pests and herbicide drift. Pruning to train trees to the desired shape begins in the first year and is completed in the fifth year. Annual dormant pruning, beginning in the second year and summer pruning, beginning in the first year are done to maintain tree architecture and ensure vigor and productivity. In the fourth and subsequent years, dormant prunings are placed in the row middles and shredded, while summer prunings are shredded with the normal cultural practices.

**Fertilization.** In June of the first two years an N-P-K fertilizer (15-15-15) is spread by hand around the trees. Beginning in the third year, liquid fertilizer (CAN17) is sprayed on the wetted area (see Irrigation) and irrigated in. Nitrogen requirements are shown in Table A. Soluble 20-20-20 plus micronutrients fertilizer is foliar applied beginning in the fourth year with the April worm spray. Some fields may show zinc and manganese deficiencies thus requiring additional micro nutrient sprays.

*Leaf Sampling.* Beginning in the second year, leaf samples are taken every July for nutrient analysis and actual amounts of fertilizer applied should be based on the analytical recommendations. Leaf samples in

this study are calculated at 2 per 40 acres. The samples are collected by the grower using an ATV and the cost listed in the study includes collecting the sample and the lab analysis. Some fields may show zinc and manganese deficiencies thus requiring additional micro nutrient sprays. Additional sprays for such deficiencies are not included in this study.

Table B. Cherry Orchard Water Use

Year	Acre-ft/Yr
1-3	1.5
4-6	2.0
7+	2.5

Table A. Annual Nitrogen Applied

Year	Lb N/acre
1	10
2	10
3	20
4	30
5	35
6	40
7	45
8	50
9	60
10+	60

**Irrigation.** The total irrigation cost includes the pumping cost and irrigation labor. Water for irrigation is supplied from a well and distributed to the orchard through a micro-sprinkler irrigation system wetting 70 percent of the orchard floor. The water cost for individual orchards will vary depending on the amount of water pumped, irrigation system (drip, micro-sprinkler, overhead sprinkler, flood, or other), energy source, and irrigation district. In this study, irrigation water is calculated to cost \$60.00 per acre-foot or \$5 per acre-inch. No assumption is made about effective rainfall. As shown in Table B above, the amount of water applied to the orchard each year will vary for the establishment and production years.

**Pollination.** In the first year of crop set (4th year), two bee hives per acre are placed in the field and maintained by the beekeeper. In this study, the total pollination cost is \$350 per acre.

**Pest Management.** The pesticides and rates mentioned in this cost study are listed in *UC Integrated Pest Management Guidelines, Cherries*. For information on other pesticides available, pest identification, monitoring, and management visit the UC IPM website at [www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu). Although growers commonly use the pesticides mentioned, many other pesticides are available. Check with your PCA and/or the UC IPM website for current recommendations. For information and pesticide use permits, contact the local county agricultural commissioner's office. Adjuvants are recommended for use with many pesticides for effective control, but adjuvants and their costs are not included in this study.

**Nematodes.** In this study, the land is assumed to be a cherry replant site. An untarped strip application (tree row) of Telone II at 18.5 gallons per acre plus chloropicrin at 110 pounds per acre on a 10-foot strip is applied at a cost of \$1,275 per acre prior to planting by a custom applicator. On new sites not previously planted to cherries and without nematodes, fumigation is rarely necessary.

**Diseases.** Fungicide treatments to control bloom and fruit diseases start in the fourth year. In this study, four applications are made: one during bloom in late March, a second in early April, a third in mid-April, and a final pre-harvest application in mid-May.

**Insects.** Beginning in the fourth year, an insecticide plus supreme oil are applied as a delayed dormant spray in February to help manage scale, aphids, mites, and lepidopterous pests. Beginning in the fourth year, one insecticide application is made approximately two weeks after bloom to control fruit-feeding worms (green fruitworm and fruit tree leafroller). A micro-nutrient foliar fertilizer is mixed with the worm spray. Also beginning in the fourth year, in mid-April through mid-May, three insecticide sprays are applied to control Spotted Wing Drosophila. Beginning in the second year, three postharvest insecticide

treatments are made (in late June, August, and September) to control leafhopper vectors of Western X (Buckskin) disease. A miticide is added to the first leafhopper treatment for mite control. Leafhopper sprays are not needed in cherry growing areas where Western X disease is not present, but are included in this study.

*Weeds (Orchard Floor Management).* During the first three years, weeds in the row middles are disked five times per year. In the fourth and subsequent years, the weeds in the middles are mowed five times per year. Beginning in the first year, weeds in the tree rows are controlled with a fall-applied pre- and post-emergent (residual) herbicide treatment. This spray is applied to 30 percent of the orchard during the first three years and 50 percent thereafter. Two in-season (April and July) spot sprays with a post-emergence herbicide are made, each assumed to cover 20 percent of the orchard floor.

**Growth Regulators.** Beginning in the fourth year, a late January application of calcium ammonium nitrate fertilizer (CAN 17) plus a surfactant is used to accelerate bloom and harvest. Two pre-harvest gibberellic acid (GA) sprays are applied to cherries to enhance fruit size and firmness. CAN 17 and GA are not used in every orchard every year, but application costs are included in this study.

**Harvest.** Assumed harvest practices and their related costs are discussed in the production section of this study.

**Yields.** This study assumes that the orchard begins bearing an economic crop in the fourth year and reaches maturity in the ninth year. Gross field yields are sorted, resulting in a 75 percent fresh fruit pack-out. The remaining fruit is diverted to various channels as discussed in the production section of this study. Assumed annual per acre yields and utilization for years 4 through 9+ are shown in Table C.

Table C. Annual Yield and Utilization- Pounds per Acre

Year	Gross	Packed	Brining	Peddler Sales	Culls
4	1,800	1,350	180	180	90
5	2,400	1,800	240	240	120
6	4,800	3,600	480	480	240
7	7,200	5,400	720	720	360
8	9,600	7,200	960	960	480
9+	10,800	8,100	1,080	1,080	540

**Returns.** Assumptions about pack-out and crop disposition in domestic, export, and secondary use markets, along with their related costs and returns, are the same as those presented in the production section of this study.

**Assessments.** See Assessments in production section.

### Production Cultural Practices and Material Inputs

Tables 2 to 8

**Prune.** Hand crews prune mature orchards in the winter (January) and early summer (June). Winter prunings are stacked in the row middles and shredded. Summer prunings are destroyed during regular disking or mowing operations.

**Tree Replacement.** Weak or dead trees are replaced each year. It is assumed that three trees are replanted each year. The cost includes a custom backhoe service to dig out the old trees, planting labor, wraps, and whitewash.

**Fertilization.** CAN 17 at 60 pounds of N per acre (or 2 applications at 30 pounds) is sprayed on the ground in late April or early May using a fertilizer applicator furnished by the fertilizer dealer. The fertilizer is applied to the wetted area and irrigated in. Nitrogen requirements are shown in Table A, but actual amounts to apply should be determined by leaf analysis. Leaf samples are taken in July. Micro nutrients, (soluble 20-20-20 with micronutrients) at 5 pounds per acre are applied as a foliar with the April worm spray (one month after petal fall). Some fields may show zinc and manganese deficiencies thus requiring additional micro nutrient sprays applied in April with the worm spray.

**Irrigation.** The total irrigation cost includes the pumping costs and irrigation labor. Water for irrigation is supplied from a well and delivered to the micro-sprinklers on the orchard floor. The micro-sprinklers are assumed to cover 70% of the orchard floor. The water cost for individual orchards will vary depending on the amount of water pumped, energy source, and irrigation district. In this study, irrigation water is calculated to cost \$60.00 per acre-foot (\$5 per acre-inch). Irrigation labor is calculated at 0.08 hours per acre-inch. An average of 2.5 acre-feet (30 acre-inches) is applied each year. No assumption is made about effective rainfall.

**Pollination.** Two hives per acre are placed in the orchard in March and maintained by a beekeeper.

**Pest Management.** The pesticides and rates mentioned in this cost study are listed in *UC Integrated Pest Management Guidelines, Cherries*. For information on other pesticides available, pest identification, monitoring, and management visit the UC IPM website at [www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu). Information and pesticide use permits are available through the local county agricultural commissioner's office. Pesticides mentioned in this study are used to calculate rates and costs. Although growers commonly use the pesticides mentioned, other pesticides are available. Spray adjuvants are recommended for use with many pesticides, but are not accounted for in this study. Pesticide costs vary by location, brand, and grower volume. Pesticide costs in this study are from a single dealer and shown as full retail. **Cherry pest and disease management is determined by the seasonal pest pressure and will vary among growers and years.**

*Pest Control Adviser (PCA).* A state-licensed pest control adviser monitors the field for agronomic problems including pests, diseases, and nutritional status. Growers may hire private consultants on a per acre basis or receive a similar service as part of an agreement with an agricultural chemical and fertilizer company. Separate costs for a PCA are not included in this study.

*Insects and Diseases.* Spray applications described above to manage insects, mites, and foliar, flower, and fruit diseases in the orchard establishment years are continued in established orchards.

*Weeds (Orchard Floor Management).* Middles are mowed five times per year – April, May, June, August, and September. Weeds in the tree rows are controlled with fall-applied pre- and post-emergent (residual) herbicides. Goal, Surflan and Gramoxone are used in a single pre-emergence fall (November) treatment applied to 50% (9 ft. strip) of the orchard. Two in-season (April, July) spot sprays with the contact herbicide, Roundup, are applied to 20 percent of the orchard each time.

**Growth Regulators.** A late January application of calcium ammonium nitrate fertilizer (CAN 17) plus a surfactant is used to accelerate bloom and harvest. Two pre-harvest gibberellic acid (GA) sprays are

applied to cherries to enhance fruit size and firmness. CAN 17 and GA are not used in every orchard every year.

**Harvest.** Cherry harvest timing depends on variety but generally begins in early May and is completed by mid-June. This study assumes a single once-over harvest. The cherries are hand harvested into picking buckets, then transferred to shallow field bins that are accumulated and trucked to the packing facility. In this study the grower contracts to have the cherry crop harvested for \$0.40 per pound. The packer hauls the cherries to the packing shed at a charge of \$5.00 per 350-pound bin.

**Yields.** The average field yield over the remaining life of the orchard is 5.40 tons (10,800 lbs) per acre. Pack-out (amount of fruit delivered from the field that meets quality standards for fresh market sales) and packing charges vary from year to year, due to various factors such as weather, diseases, insects, and crop yield. Sorting and packing in this study results in a 75 percent fresh fruit pack-out. 10 percent of the fruit is diverted to “peddler” sales, 10 percent to brining, and 5 percent is discarded as culls. Assumed annual pounds per acre yields for cherries are shown in Table C.

**Returns.** Cherries sold for export command higher prices than those sold for domestic trade. This study assumes that 35 percent of the fresh market crop is exported at a price of \$42 per 18-pound box. The remaining 65 percent are sold domestically for \$40 per 16-pound consumer-pack box. Cherries diverted to “peddler” sales and brining are sold for \$0.80 and \$0.40 per pound, respectively.

A great variety of packages are now used in the cherry industry due to the popularity of consumer packaging and increased sales through warehouse retailers. Sweet cherries are sold fresh domestically and abroad. Cherries packed for some export markets require fumigation and other special handling. This study assumes packing charges of \$11.00 per 16-pound box of domestic consumer-pack plastic bags and \$14.00 per 18-pound export bulk-filled box. A 7.5 percent sales commission is assessed on both.

**Assessment.** The California Cherry Board assesses all commercially grown sweet cherries to pay for cherry production research. The mandatory assessment varies from year to year. In this study, it is assumed to be \$0.01 per packed pound. One-half of this assessment is paid by the grower and one-half is paid by the packing house.

**Pickup/ATV.** The study assumes a business use mileage for the pickup and ATV. The All-Terrain Vehicle or ATV is used for monitoring the orchard and checking the irrigation. The costs are estimated and not from any specific data.

### **Labor, Equipment, and Interest**

**Labor.** Hourly wages for workers are \$16.00 per hour for machine operators and \$12.00 per hour for non-machine labor. Adding 46 percent for the employers’ share of federal and state payroll taxes, insurance, and other possible benefits gives the labor rates shown of \$23.36 and \$17.52 per hour for machine labor and non-machine labor, respectively. The overhead includes the employer’s share of federal and California state payroll taxes, workers' compensation insurance for vineyards and a percentage for other possible benefits. Workers’ compensation insurance costs will vary among growers. The cost is based on the average industry rate as of January 2017. Labor for operations involving machinery are 20 percent higher than the operation time given in Table 2 to account for the extra labor involved in equipment set up, moving, maintenance, work breaks, and field repair.

**Equipment Operating Costs.** Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by American Society of Agricultural and Biological Engineers (ASABE). Fuel and lubrication costs are also determined by ASABE equations based on maximum power takeoff (PTO) horsepower, and fuel type. Average prices for on-farm delivery of diesel and gasoline based on June 2017 data from the Energy Information Administration are \$2.92 and \$3.18 per gallon, respectively. The cost includes a 9.25 percent sales tax, a \$0.13/gal excise tax on diesel fuel, an 8 percent sales tax, and a \$0.30/gal excise tax on gasoline. It is noted that federal and state excise taxes are refundable for on-farm use when filing the farm income tax return.

*Fuel Lube & Repair.* The fuel, lube, and repair cost per acre for each operation is determined by multiplying the total hourly operating cost for each piece of equipment used for the selected operation by the hours per acre. Tractor time is 10 percent higher than implement time for a given operation to account for setup, travel and down time.

**Interest on Operating Capital.** Interest on operating capital is based on cash operating costs and is calculated monthly until harvest at a nominal rate of 4.50 percent per year. A nominal interest rate is the typical market cost of borrowed funds. The interest cost of post-harvest operations is discounted back to the last harvest month using a negative interest charge. The rate will vary depending upon various factors, but the rate in this study is considered a typical lending rate by a farm lending agency as of January 2017.

**Risk.** The risks associated with crop production should not be underestimated. While this study makes every effort to model a production system based on typical, real world practices, it cannot fully represent financial, agronomic and market risks, which affect profitability and economic viability of wine grape production. Because of so many potential risk factors, effective risk management must combine specific tactics in a detailed manner, in various combinations for a sustainable operation. Moreover, Table 5 of this study reflects a ranging analysis of returns based on various assumptions which is therefore hypothetical in nature. It is important to realize that actual results may differ from the returns contained in this study. Any returns above total costs are considered returns on risk and investment to management, (or owners).

### **Cash Overhead**

Cash overhead consists of various cash expenses paid out during the year that are assigned to the whole farm and not to a particular operation. These costs can include property taxes, interest on operating capital, office expense, liability and property insurance, sanitation services, equipment repairs, and management.

**Property Taxes.** Counties charge a base property tax rate of 1 percent on the assessed value of the property. In some counties special assessment districts exist and charge additional taxes on property including equipment, buildings, and improvements. For this study, county taxes are calculated as 1 percent of the average value of the property.

**Insurance.** Insurance for farm investments vary depending on the assets included and the amount of coverage.

*Property insurance.* This provides coverage for property loss and is charged at 0.846 percent of the average value of the assets over their useful life.

*Liability insurance.* A standard farm liability insurance policy will help cover the expenses for which you



become legally obligated to pay for bodily injury claims on your property and damages to another person's property as a result of a covered accident. Common liability expenses covered under your policy include attorney fees and court costs, medical expenses for people injured on your property, injury or damage to another's property. In this study, liability insurance costs \$640 for the entire farm or \$8 per acre

*Crop Insurance.* Federally supported crop insurance is available to growers for any unavoidable loss of production, damage or poor quality resulting from adverse weather conditions such as cool wet weather, freeze, frost, hail, heat, rain, wind and damage from birds, drought, earthquakes and fire. The crop insurance program is administered by the USDA Risk Management Agency (RMA), <http://www.rma.usda.gov/> Coverage levels are from 50-85 percent of the approved average yield as established by verifiable production records from the orchard. A significant number of growers purchase crop insurance in this region. Multi-peril crop insurance, a revenue program with weather trigger, at 75 percent of established federal price costs \$486 per acre based on a 75 percent pack-out of a 10,800 pound gross yield. The cost of \$486 per acre for crop insurance has been included in this study.

**Office Expense.** Office and business expenses are estimated at \$150 per acre. These expenses include office supplies, telephones, bookkeeping, accounting, road maintenance, and miscellaneous administrative charges.

**Sanitation Services.** This cost includes delivery and servicing of a double toilet and hand washing unit for 6 months. The cost for this service is \$1,200 per year for the 80-acre farm or \$15 per acre. Growers using contract labor may not have a cost because many labor contractors provide their own sanitation facilities.

**Management and Supervisor Wages.** Wages for management are not included as cash cost. Returns above total costs are considered a return to management and risk.

### **Non-Cash Overhead**

Non-Cash overhead is calculated as the capital recovery cost for equipment and other farm investments.

**Capital Recovery Costs.** Capital recovery cost is the annual depreciation and interest costs for a capital investment. It is the amount of money required each year to recover the difference between the purchase price and salvage value (unrecovered capital). It is equivalent to the annual payment on a loan for the investment with the down payment equal to the discounted salvage value. This is a more complex method of calculating ownership costs than straight-line depreciation and opportunity costs, but more accurately represents the annual costs of ownership because it takes the time value of money into account (Boehlje and Eidman). The formula for the calculation of the annual capital recovery costs is  $((\text{Purchase Price} - \text{Salvage Value}) \times \text{Capital Recovery Factor}) + (\text{Salvage Value} \times \text{Interest Rate})$ .

*Salvage Value.* Salvage value is an estimate of the remaining value of an investment at the end of its useful life. For farm machinery (tractors and implements) the remaining value is a percentage of the new cost of the investment (Boehlje and Eidman). The percent remaining value is calculated from equations developed by the American Society of Agricultural Engineers (ASAE) based on equipment type and years of life. The life in years is estimated by dividing the wear out life, as given by ASAE by the annual hours of use in this operation. For other investments including irrigation systems, buildings, and miscellaneous equipment, the value at the end of its useful life is zero. The salvage value for land is the purchase price because land does not depreciate. The purchase price and salvage value for equipment and investments are shown in Table 7.

*Capital Recovery Factor.* Capital recovery factor is the amortization factor or annual payment whose present value at compound interest is 1. The amortization factor is a table value that corresponds to the interest rate used and the life of the machine.

**Interest Rate.** An interest rate of 5.00 percent is used to calculate capital recovery. The rate will vary depending upon loan amount and other lending agency conditions, but is the basic suggested rate by a farm lending agency as of January 2017.

**Land.** The land is assumed to be Class I soil formerly planted to cherries and is valued at \$28,000 per acre. For this study, the producing acreage estimated worth is; \$36,688 per acre. It is the crop land value plus the establishment cost, ( $\$28,000 + \$8,688 = \$36,688$ ).

**Irrigation.** The orchard is irrigated using a micro-sprinkler irrigation system with 70 percent coverage. The sprinklers were installed prior to planting and are expected to have a 25-year life, the same as the orchard. The sprinklers will be removed when the orchard is removed. Water is pumped from a well and distributed to the orchard by way of underground mainlines. The well, a 25 horsepower (HP) pump and the installation labor are included in the irrigation system cost. This well and pump serve only the 40-acre orchard. Other well(s) are used on the remaining property and are not included. Water is pumped from a 120-foot depth. The irrigation system is considered an improvement to the property and has a 25-year life.

**Establishment Cost.** Costs to establish the orchard are used to determine capital recovery expenses, depreciation, and interest on investment for the production years. Establishment cost is the sum of the costs for land preparation, planting, trees, production expenses, and cash overhead for growing cherry trees through the first year fruit is harvested minus any returns from production. The Total Accumulated Net Cash Cost on Table 1, in the fourth year represents the establishment cost. For this study the cost is \$8,688 per acre or \$347,520 for the 40-acre orchard. The establishment cost is amortized over the remaining 21 years of the 25 years the orchard is in production.

**Equipment Costs.** Farm equipment is purchased new or used, but the study shows the current purchase price for new equipment. The new purchase price is adjusted to 60 percent to indicate a mix of new and used equipment. Annual ownership costs for equipment and other investments are in the Whole Farm Equipment, Investment and Business Overhead Tables. Equipment costs are composed of three parts: non-cash overhead, cash overhead, and operating costs. Both of the overhead factors have been discussed in previous sections. The operating costs consist of repairs, fuel, and lubrication and are discussed under operating costs.

**Table Values.** Due to rounding, the totals may be slightly different from the sum of the components.

**Acknowledgements.** Appreciation is expressed to the UC Cooperative Extension, growers, packers, input suppliers, and other industry representatives who provided information, assistance, and expertise for this study.

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**Table 1. SAMPLE COSTS PER ACRE TO ESTABLISH A CHERRY ORCHARD**  
 SAN JOAQUIN VALLEY NORTH - 2017

Year:	Cost Per Acre				
	1st	2nd	3rd	4th	5th
Total Tons Per Acre:				0.9	1.2
Domestic Fresh (16 lb. box):				55	73
Export Fresh (18 lb. box):				26	35
Brining (lbs.):				180	240
Peddler Sales (lbs.):				180	240
<b>Planting Costs:</b>					
Rip 2X (custom)	250				
Disc 2X (custom)	68				
Laser Level (custom)	210				
Fumigate-Tree Row Strip (custom)	1,275				
Plant: Survey, Plant & Paint Trees (Replant Yrs 2+)	182	1	1	2	2
Trees: 134 Per Acre @ \$6.80 each (Replants Yrs 2-3, 1 tree. Yrs 4+, 2 trees)	911	7	7	14	14
Irrigation System Installation	200				
<b>TOTAL PLANTING COSTS</b>	<b>3,096</b>	<b>8</b>	<b>8</b>	<b>16</b>	<b>16</b>
<b>Cultural Costs:</b>					
Weed: Disc 5X (Yrs 1-3, 2 passes/middle.)	79	79	79		
Irrigate: 8X (water and labor)	116	116	116	154	154
Weed: Spot Spray 20% of acres - 2X (Roundup)	25	25	25	25	25
Prune & Train: Summer	14	35	70	105	140
Fertilize: (Yr 1 & 2, 15-15-15. Yr 3+, CAN17)	42	42	29	40	45
Weed: Fall Strip Spray (Goal, Surflan, Gramoxone) Yr 1-3, 30%, Yr 4+, 50% of acres	56	56	56	86	86
Prune & Train: Dormant		219	307	394	482
Insect: Leafhopper (Imidacloprid), Mite (Onager)		103	103	103	103
Fertilize: Leaf Sampling & Nutritional Analysis		3	3	3	3
Insect: Leafhopper (Imidacloprid) 2X		34	34	34	34
Prune: Shred Brush				11	11
Growth Regulator: Bloom Stimulant Spray (CAN17, Entry)				120	120
Pollination: (2 hives)				350	350
Disease: Bloom & Fruit Diseases (Rovral)				45	45
Insect/Disease: Worm(Intrepid) PM(Luna Sensation). Fertilize: Foliar(20-20-20 +micros)				90	90
Weed: Mow Middles 5X (1 pass per middle)				46	46
Insect/Disease: SWD (Warrior II), PM (Merivon), and Growth Regulator				77	77
Insect: SWD (Success)				75	75
Growth Regulator: Gibberellic Acid Spray (ProGibb LV Plus)				28	28
Insect/Disease: SWD (Danitol 2.4 EC), PM/Brown Rot/Botrytis (Merivon)				76	76
Insect: Delayed Dormant Spray (Supreme Oil, Diazinon)				71	71
Pickup Truck Use	113	113	113	113	113
ATV Use	89	89	89	89	89
<b>TOTAL CULTURAL COSTS</b>	<b>534</b>	<b>914</b>	<b>1,024</b>	<b>2,135</b>	<b>2,263</b>
<b>Harvest &amp; Assessment Costs:</b>					
Harvest (hand pick)				720	960
Hauling- 350 lb. bins				26	34
Packing Charge- Domestic 16 lb. box				603	804
Packing Charge- Japan Export 18 lb. box				368	490
Sale Commission- 7.5%				247	330
California Cherry Board Assessment				7	9
<b>TOTAL HARVEST &amp; ASSESSMENT COSTS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,971</b>	<b>2,627</b>
Interest On Operating Capital @ 4.50%	126	21	24	21	25
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>3,756</b>	<b>943</b>	<b>1,056</b>	<b>4,143</b>	<b>4,931</b>

## UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER

**Table 1. CONTINUED**  
SAN JOAQUIN VALLEY NORTH – 2017

	Cost Per Acre					
	Year:	1st	2nd	3 <sup>rd</sup>	4th	5th
Total Tons Per Acre:					0.5	1.2
Domestic Fresh (16 lb. box):					55	73
Export Fresh (18 lb. box):					26	35
Brining (lbs.):					180	240
Peddler Sales (lbs.):					180	240
<b>Cash Overhead Costs:</b>						
Office Expense		150	150	150	150	150
Liability Insurance		8	8	8	8	8
Sanitation Fees		15	15	15	15	15
Property Taxes		301	301	302	303	346
Property Insurance		25	25	25	26	29
Investment Repairs		75	75	75	77	77
<b>TOTAL CASH OVERHEAD COSTS</b>		<b>574</b>	<b>574</b>	<b>575</b>	<b>579</b>	<b>625</b>
<b>TOTAL CASH COSTS/ACRE</b>		<b>4,330</b>	<b>1,517</b>	<b>1,631</b>	<b>4,722</b>	<b>5,556</b>
<b>INCOME/ACRE FROM PRODUCTION</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>3,512</b>	<b>4,683</b>
<b>NET CASH INCOME/ACRE FOR THE YEAR</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>NET CASH COSTS/ACRE FOR THE YEAR</b>		<b>4,330</b>	<b>1,517</b>	<b>1,631</b>	<b>1,210</b>	<b>873</b>
<b>ACCUMULATED NET CASH COSTS/ACRE</b>		<b>4,330</b>	<b>5,847</b>	<b>7,478</b>	<b>8,688</b>	<b>9,561</b>
<b>Non-Cash Overhead Costs (Capital Recovery):</b>						
Buildings		59	59	59	59	59
Tools-Shop/Field		17	17	17	17	17
Sprinkler Irrigation System		97	97	97	97	97
Irrigation (pump, well)		87	87	87	87	87
Ladders - 50 Each					15	15
Land		1,400	1,400	1,400	1,400	1,400
Equipment		50	61	61	80	83
Cherry Orchard Establishment						678
<b>TOTAL INTEREST ON INVESTMENT</b>		<b>1,710</b>	<b>1,721</b>	<b>1,721</b>	<b>1,755</b>	<b>2,436</b>
<b>TOTAL COST/ACRE FOR THE YEAR</b>		<b>6,040</b>	<b>3,238</b>	<b>3,352</b>	<b>6,477</b>	<b>7,992</b>
<b>INCOME/ACRE FROM PRODUCTION</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>3,512</b>	<b>4,683</b>
<b>TOTAL NET INCOME/ACRE FOR THE YEAR</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL NET COST/ACRE FOR THE YEAR</b>		<b>6,040</b>	<b>3,238</b>	<b>3,352</b>	<b>2,965</b>	<b>3,309</b>
<b>TOTAL ACCUMULATED NET COST/ACRE</b>		<b>6,040</b>	<b>9,278</b>	<b>12,630</b>	<b>15,595</b>	<b>18,904</b>

## UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER

**Table 2. COSTS PER ACRE TO PRODUCE CHERRIES**

SAN JOAQUIN VALLEY NORTH - 2017

Operation	Operation Time (Hrs/A)	Cash and Labor Costs per Acre					Total Cost	Your Cost
		Labor Cost	Fuel	Lube & Repairs	Material Cost	Custom/ Rent		
Cultural:								
Prune- Dormant	0.00	701	0	0	0	0	701	
Shred Prunings	0.23	6	3	2	0	0	11	
Growth Regulator/Bloom Stimulant	0.31	9	4	3	377	0	392	
Pests- Insects (Delayed Dormant Spray)	0.31	9	4	3	55	0	71	
Pollination- 2 hives	0.00	0	0	0	350	0	350	
Pests- Bloom Diseases/PM	0.31	9	4	3	30	0	45	
Replant Trees - 3 Tree/acre	0.00	0	0	0	20	0	20	
Survey, Plant & Paint Trees	0.00	0	0	0	0	58	58	
Pests- Worms/PM & 20-20-20 w/ micronutrients	0.31	9	4	3	75	0	90	
Weeds- Mow Middles 5X	0.93	26	12	8	0	0	46	
Irrigate 8X	0.00	42	0	0	150	0	192	
Pests- SWD/PM + Growth Regulator	0.31	9	4	3	62	0	77	
Weeds- Spot Spray 2X	0.60	17	2	2	4	0	25	
Fertilize- CAN 17	0.25	7	1	0	62	0	71	
Pest- Insects (SWD)	0.31	9	4	3	60	0	75	
Pests- SWD/PM/Rot/Botrytis	0.31	9	4	3	61	0	76	
Growth Regulator- Gibberellic Acid	0.31	9	4	3	13	0	28	
Prune- Summer	0.00	210	0	0	0	0	210	
Pests- Leafhopper/Mites	0.31	9	4	3	88	0	103	
Leaf Tissue Analysis	0.00	1	0	0	0	2	3	
Pests- Leafhopper (Western X) 2X	0.61	17	8	5	4	0	35	
Weeds- Fall Strip Spray	0.30	8	1	1	76	0	86	
Pickup Truck Use	2.85	80	23	10	0	0	113	
ATV Use	2.85	80	6	3	0	0	89	
<b>TOTAL CULTURAL COSTS</b>	<b>11.37</b>	<b>1,273</b>	<b>90</b>	<b>56</b>	<b>1,488</b>	<b>59</b>	<b>2,967</b>	
Harvest:								
Hand Harvest	0.00	0	0	0	4,320	0	4,320	
Haul- 350 lb. bins	0.00	0	0	0	154	0	154	
Packing Charge- Domestic 16 lb.	0.00	0	0	0	3,619	0	3,619	
Packing Charge- Japan Export 18 lb.	0.00	0	0	0	2,205	0	2,205	
Sales Commission- 7.5%	0.00	0	0	0	1,483	0	1,483	
<b>TOTAL HARVEST COSTS</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11,781</b>	<b>0</b>	<b>11,781</b>	
Assessment:								
California Cherry Board	0.00	0	0	0	41	0	41	
<b>TOTAL ASSESSMENT COSTS</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41</b>	<b>0</b>	<b>41</b>	
Interest on Operating Capital at 4.50%							69	
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>11</b>	<b>1,264</b>	<b>86</b>	<b>53</b>	<b>13,250</b>	<b>59</b>	<b>14,857</b>	

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER  
**Table 2. CONTINUED**  
 SAN JOAQUIN VALLEY NORTH – 2017

Operation	Operation	Cash and Labor Costs per Acre					Total Cost	Your Cost
	Time (Hrs/A)	Labor Cost	Fuel	Lube & Repairs	Material Cost	Custom/Rent		
<b>CASH OVERHEAD:</b>								
Crop Insurance							486	
Liability Insurance							8	
Office Expense							150	
Sanitation Fees							15	
Property Taxes							346	
Property Insurance							29	
Investment Repairs							77	
<b>TOTAL CASH OVERHEAD COSTS/ACRE</b>							<b>1,112</b>	
<b>TOTAL CASH COSTS/ACRE</b>							<b>15,969</b>	
<b>NON-CASH OVERHEAD:</b>								
		Per Producing Acre	Annual Cost					
			Capital Recovery					
Buildings		900	59				59	
Cherry Orchard Establishment		8,688	678				678	
Irrigation (Pump, Well)		1,250	87				87	
Ladders - 50 Total		125	15				15	
Land		28,000	1,400				1,400	
Sprinkler Irrigation System		1,400	97				97	
Tools-Shop/Field		188	17				17	
Equipment		721	83				83	
<b>TOTAL NON-CASH OVERHEAD COSTS</b>		<b>41,276</b>	<b>2,435</b>				<b>2,436</b>	
<b>TOTAL COSTS/ACRE</b>							<b>18,405</b>	

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER  
**Table 3. COSTS AND RETURNS PER ACRE TO PRODUCE CHERRY**  
 SAN JOAQUIN VALLEY NORTH – 2017

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
<b>GROSS RETURNS</b>					
Domestic Fresh	329	Box	40.00	13,160	
Export Fresh	158	Box	42.00	6,615	
Brining	1,080	Lb	0.40	432	
Peddler Sales	1,080	Lb	0.80	864	
<b>TOTAL GROSS RETURNS</b>	<b>487</b>	<b>Box</b>		<b>21,071</b>	
<b>OPERATING COSTS</b>					
<b>Herbicide:</b>					<b>80</b>
Roundup WeatherMax	0.80	Pint	5.21	4	
Goal 2 XL	1.50	Pint	11.20	17	
Gramoxone Inteon	1.25	Pint	5.25	7	
Surflan 4 AS	4.00	Pint	13.07	52	
<b>Insecticide:</b>					<b>117</b>
440 (Supreme) Oil	3.00	gal	6.93	21	
Warrior II	2.50	floz	3.58	9	
Success	6.40	floz	9.38	60	
Danitol 2.4 EC	16.00	floz	1.33	21	
Imidacloprid 2F	9.00	floz	0.69	6	
<b>Fungicide:</b>					<b>163</b>
Rovral 4F	1.50	Pint	20.01	30	
Luna Sensation	6.40	floz	8.25	53	
Merivon	11.00	floz	7.27	80	
<b>Fertilizer:</b>					<b>397</b>
CAN 17	316.00	lb N	1.04	329	
20-20-20+micros	5.00	Lb	1.10	6	
CAN 17 (fertilizer)	60.00	lb N	1.04	62	
<b>Custom:</b>					<b>56</b>
Backhoe Tree	3.00	Tree	18.00	54	
Leaf Analysis	0.05	each	32.00	2	
<b>Pollination:</b>					<b>350</b>
Pollination Fee	2.00	Hive	175.00	350	
<b>Growth Reg:</b>					<b>26</b>
ProGibb LV Plus	24.00	floz	1.07	26	
<b>Adjuvant:</b>					<b>48</b>
Entry	1.00	Gal	48.40	48	
<b>Tree:</b>					<b>20</b>
Sweet Cherry-5/8"	3.00	Each	6.80	20	
<b>Harvest:</b>					<b>11,781</b>
Pick	10800.00	Lb	0.40	4,320	
Haul: 350-pound Bins	30.86	Bin	5.00	154	
Packing- domestic 16 lb.	329.00	Box	11.00	3,619	
Packing- export 18 lb.	157.50	Box	14.00	2,205	
Sales Commission- 7.5% domestic	329.00	Box	3.00	987	
Sales Commission- 7.5% export	157.50	Box	3.15	496	
<b>Assessment:</b>					<b>41</b>
Assessment Fee	8100.00	Lb	0.01	41	
<b>Water:</b>					<b>150</b>
Water - Pumped	30.00	AcIn	5.00	150	
<b>Contract:</b>					<b>4</b>
Plant & Paint Tree	3.00	Tree	1.20	4	
<b>Tree Aids:</b>					<b>0</b>
Paint/Whitewash	3.00	Each	0.01	0	
Carton/Tree Wrap	3.00	Each	0.15	0	
<b>Insecticide:</b>					<b>137</b>
Diazinon 50 W	4.00	Lb	8.64	35	
Intrepid 2F	10.00	floz	1.64	16	
Onager	24.00	floz	3.58	86	
<b>Labor</b>					<b>1,264</b>
Equipment Operator Labor	13.28	hrs	23.36	310	
Non-Machine Labor	54.45	hrs	17.52	954	
<b>Machinery</b>					<b>146</b>
Fuel-Gas	9.03	gal	3.18	29	
Fuel-Diesel	21.08	gal	2.92	62	
Lube				14	
Machinery Repair				43	
Interest on Operating Capital @ 4.50%				69	
<b>TOTAL OPERATING COSTS/ACRE</b>				<b>14,857</b>	



## UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER

**Table 3. CONTINUED**

SAN JOAQUIN VALLEY NORTH - 2017

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
NET RETURNS ABOVE OPEERATING COSTS				6,214	
CASH OVERHEAD COSTS					
Crop Insurance				486	
Liability Insurance				8	
Office Expense				150	
Sanitation Fees				15	
Property Taxes				346	
Property Insurance				29	
Investment Repairs				77	
TOTAL CASH OVERHEAD COSTS/ACRE				1,112	
TOTAL CASH COSTS/ACRE				15,969	
NET RETURNS ABOVE CASH COSTS				5,102	
NON-CASH OVERHEAD COSTS (Capital Recovery)					
Buildings				59	
Cherry Orchard Establishment				678	
Irrigation (Pump, Well)				87	
Ladders - 50 Total				15	
Land				1,400	
Sprinkler Irrigation System				97	
Tools-Shop/Field				17	
Equipment				83	
TOTAL NON-CASH OVERHEAD COSTS/ACRE				2,436	
TOTAL COST/ACRE				18,405	
NET RETURNS ABOVE TOTAL COST				2,666	

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER  
**Table 4. MONTHLY COSTS PER ACRE TO PRODUCE CHERRY**  
 SAN JOAQUIN VALLEY NORTH – 2017

	JAN 17	FEB 17	MAR 17	APR 17	MAY 17	JUN 17	JUL 17	AUG 1	SEP 1	OCT 17	NOV 1	Total
<b>Cultural:</b>												
Prune- Dormant	701											701
Shred Prunings	11											11
Growth Regulator/Bloom Stimulant	392											392
Pests- Insects (Delayed Dormant Spray)		71										71
Pollination- 2 hives			350									350
Pests- Bloom Diseases/PM			45									45
Replant Trees - 3 Tree/acre			20									20
Survey, Plant & Paint Trees			58									58
Pests- Worms/BD (PM) + 20-20-20				90								90
Weeds- Mow Middles 5X				9	9	9		9	9			46
Irrigate 8X				19	26	26	51	51	19			192
Pests- SWD/BD (PM) + Growth Regulator				77								77
Weeds- Spot Spray 2X				12			12					25
Fertilize- CAN 17				71								71
Pest- Insects (SWD)				75								75
Pests- SWD/PM/Rot/Botrytis					76							76
Growth Regulator- Gibberellic Acid					28							28
Prune- Summer						210						210
Pests- Leafhopper/Mites						103						103
Leaf Tissue Analysis							3					3
Pests- Leafhopper (Western X) 2X								17	17			35
Weeds- Fall Strip Spray											86	86
Pickup Truck Use	10	10	10	10	10	10	10	10	10	10	10	113
ATV Use	8	8	8	8	8	8	8	8	8	8	8	89
<b>TOTAL CULTURAL COSTS</b>	<b>1,123</b>	<b>89</b>	<b>492</b>	<b>372</b>	<b>158</b>	<b>367</b>	<b>85</b>	<b>96</b>	<b>64</b>	<b>18</b>	<b>104</b>	<b>2,966</b>
<b>Harvest:</b>												
Hand Harvest					4,320							4,320
Haul- 350 lb. bins					154							154
Packing Charge- Domestic 16 lbs.					3,619							3,619
Packing Charge- Japan Export 18 lbs.					2,205							2,205
Sales Commission- 7.5%					1,483							1,483
<b>TOTAL HARVEST COSTS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11,781</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11,781</b>
<b>Assessment:</b>												
California Cherry Board					41							41
<b>TOTAL ASSESSMENT COSTS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41</b>
Interest on Operating Capital @ 4.50%	4	5	6	8	52	-3	-1	-1	-1	0	0	69
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>1,127</b>	<b>93</b>	<b>498</b>	<b>304</b>	<b>12,032</b>	<b>364</b>	<b>83</b>	<b>95</b>	<b>63</b>	<b>18</b>	<b>104</b>	<b>14,857</b>

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER

**Table 4. CONTINUED**  
SAN JOAQUIN VALLEY - NORTH 2011

	JAN 17	FEB 17	MAR 17	APR 17	MAY 17	JUN 17	JUL 17	AUG 17	SEP 17	OCT 17	NOV 17	Total
<b>CASH OVERHEAD</b>												
Crop Insurance								486				486
Liability Insurance								8				8
Office Expense	14	14	14	14	14	14	14	14	14	14	14	150
Sanitation Fees	1	1	1	1	1	1	1	1	1	1	1	15
Property Taxes		173					173					346
Property Insurance		15					15					29
Investment Repairs	7	7	7	7	7	7	7	7	7	7	7	77
<b>TOTAL CASH OVERHEAD COSTS</b>	<b>22</b>	<b>210</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>210</b>	<b>516</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>1,112</b>
<b>TOTAL CASH COSTS/ACRE</b>	<b>1,149</b>	<b>303</b>	<b>520</b>	<b>326</b>	<b>12,054</b>	<b>386</b>	<b>293</b>	<b>611</b>	<b>85</b>	<b>40</b>	<b>126</b>	<b>15,969</b>

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER  
**Table 5. RANGING ANALYSIS**  
 SAN JOAQUIN VALLEY NORTH - 2017

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE CHERRIES

	YIELD - Fresh Market (box/acre)						
Domestic (16 lb. box):	230.00	263.00	296.00	329.00	362.00	395.00	428.00
Export (18 lb. box):	109.50	125.50	141.50	157.50	173.50	189.50	205.50
<b>OPERATING COSTS/ACRE:</b>							
Cultural	2,967	2,967	2,967	2,967	2,967	2,967	2,967
Harvest	8,289	9,453	10,617	11,781	12,946	14,110	15,274
Assessment	28	32	36	41	45	49	53
Interest on Operating Capital @ 4.50%	56	60	65	69	73	78	82
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>11,339</b>	<b>12,512</b>	<b>13,685</b>	<b>14,857</b>	<b>16,030</b>	<b>17,203</b>	<b>18,375</b>
CASH OVERHEAD COSTS/ACRE	1,112	1,112	1,112	1,112	1,112	1,112	1,112
<b>TOTAL CASH COSTS/ACRE</b>	<b>12,451</b>	<b>13,624</b>	<b>14,796</b>	<b>15,969</b>	<b>17,142</b>	<b>18,314</b>	<b>19,487</b>
NON-CASH OVERHEAD COSTS/ACRE	2,436	2,436	2,436	2,436	2,436	2,436	2,436
<b>TOTAL COSTS/ACRE</b>	<b>14,887</b>	<b>16,060</b>	<b>17,232</b>	<b>18,405</b>	<b>19,578</b>	<b>20,750</b>	<b>21,923</b>

Net Return per Acre above Operating Costs for Cherry

PRICE (\$/box)		PRICE (\$/lb)		YIELD (box/acre)						
Domestic Fresh				230.00	263.00	296.00	329.00	362.00	395.00	428.00
Export Fresh				109.50	125.50	141.50	157.50	173.50	189.50	205.50
				YIELD (lb/acre)						
		Brining		756.00	864.00	972.00	1080.00	1188.00	1296.00	1404.00
		Peddler Sales		756.00	864.00	972.00	1080.00	1188.00	1296.00	1404.00
31.00	33.00	0.28	0.65	107	586	1,065	1,544	2,022	2,501	2,980
34.00	36.00	0.32	0.70	1,194	1,829	2,465	3,100	3,736	4,371	5,007
37.00	39.00	0.36	0.75	2,280	3,073	3,865	4,657	5,449	6,241	7,034
40.00	42.00	0.40	0.80	3,367	4,316	5,265	6,214	7,163	8,111	9,060
43.00	45.00	0.44	0.85	4,453	5,559	6,665	7,770	8,876	9,982	11,087
46.00	48.00	0.48	0.90	5,540	6,802	8,065	9,327	10,589	11,852	13,114
49.00	51.00	0.52	0.95	6,626	8,046	9,465	10,884	12,303	13,722	15,141

Net Return per Acre above Cash Costs for Cherry

PRICE (\$/box)		PRICE (\$/lb)		YIELD (box/acre)						
Domestic Fresh				230.00	263.00	296.00	329.00	362.00	395.00	428.00
Export Fresh				109.50	125.50	141.50	157.50	173.50	189.50	205.50
				YIELD (lb/acre)						
		Brining		756.00	864.00	972.00	1080.00	1188.00	1296.00	1404.00
		Peddler Sales		756.00	864.00	972.00	1080.00	1188.00	1296.00	1404.00
31.00	33.00	0.28	0.65	-1,004	-526	-47	432	911	1,389	1,868
34.00	36.00	0.32	0.70	82	718	1,353	1,989	2,624	3,259	3,895
37.00	39.00	0.36	0.75	1,169	1,961	2,753	3,545	4,337	5,130	5,922
40.00	42.00	0.40	0.80	2,255	3,204	4,153	5,102	6,051	7,000	7,949
43.00	45.00	0.44	0.85	3,342	4,447	5,553	6,659	7,764	8,870	9,976
46.00	48.00	0.48	0.90	4,428	5,691	6,953	8,215	9,478	10,740	12,002
49.00	51.00	0.52	0.95	5,515	6,934	8,353	9,772	11,191	12,610	14,029

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER

**Table 5. CONTINUED**  
SAN JOAQUIN VALLEY NORTH - 2017

Net Return per Acre above Total Costs for Cherry

PRICE (\$/box)		PRICE (\$/lb)		YIELD (box/acre)						
Domestic Fresh				230.00	263.00	296.00	329.00	362.00	395.00	428.00
	Export Fresh			109.50	125.50	141.50	157.50	173.50	189.50	205.50
				YIELD (lb/acre)						
		Brining		756.00	864.00	972.00	1080.00	1188.00	1296.00	1404.00
		Peddler Sales		756.00	864.00	972.00	1080.00	1188.00	1296.00	1404.00
31.00	33.00	0.28	0.65	-3,440	-2,962	-2,483	-2,004	-1,525	-1,047	-568
34.00	36.00	0.32	0.70	-2,354	-1,718	-1,083	-447	188	824	1,459
37.00	39.00	0.36	0.75	-1,267	-475	317	1,109	1,902	2,694	3,486
40.00	42.00	0.40	0.80	-181	768	1,717	2,666	3,615	4,564	5,513
43.00	45.00	0.44	0.85	906	2,012	3,117	4,223	5,328	6,434	7,540
46.00	48.00	0.48	0.90	1,992	3,255	4,517	5,779	7,042	8,304	9,567
49.00	51.00	0.52	0.95	3,079	4,498	5,917	7,336	8,755	10,174	11,593

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER  
**Table 6. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS**  
 SAN JOAQUIN VALLEY NORTH - 2017

ANNUAL EQUIPMENT COSTS

Yr.	Description	Price	Years Life	Salvage Value	Capital Recovery	Cash Overhead		Total
						Insurance	Taxes	
17	25 HP 2WD Tractor	19,000	15	3,699	1,659	10	113	1,782
17	80 HP 2WD Tractor	52,500	15	10,221	4,584	27	314	4,924
17	ATV 4WD	8,500	7	3,224	1,073	5	59	1,137
17	Mower - Flail 10'	11,300	15	1,085	1,038	5	62	1,106
17	OrchSprayer500GPPTO	26,000	7	6,633	3,679	14	163	3,856
17	Shredder-10' 3PT	8,500	15	816	781	4	47	832
17	Weed Sprayer 100 G	4,500	15	432	414	2	25	440
17	Pickup Truck 1/2 T	32,000	7	12,139	4,039	19	221	4,279
TOTAL		162,300	-	38,249	17,267	85	1,003	18,355
60% of New Cost*		97,380	-	22,949	10,360	51	602	11,013

\*Used to reflect a mix of new and used equipment

ANNUAL INVESTMENT COSTS

Description	Price	Years Life	Salvage Value	Capital Recovery	Cash Overhead			Total
					Insurance	Taxes	Repairs	
INVESTMENT								
Buildings	72,000	30	0	4,684	30	360	1,440	6,514
Orchard Establishment	347,520	21	0	27,105	147	1,738	0	28,990
Irrigation (Well, Pump)	50,000	25	3,500	3,474	23	268	1,000	4,764
Ladders - 50 Total	10,000	10	700	1,239	5	54	200	1,497
Land	1,120,000	25	1,120,000	56,000	948	11,200	0	68,148
Sprinkler Irrigation System	56,000	25	3,920	3,891	25	300	1,120	5,336
Tools-Shop/Field	15,000	15	1,050	1,396	7	80	300	1,784
TOTAL INVESTMENT	1,670,520	-	1,129,170	97,790	1,184	13,998	4,060	117,033

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Crop Insurance	40.00	Acre	486.00	19,440
Liability Insurance	40.00	Acre	7.98	319
Office Expense	40.00	Acre	150.00	6,000
Sanitation Fees	40.00	Acre	15.00	600

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER  
**Table 7. HOURLY EQUIPMENT COSTS**  
 SAN JOAQUIN VALLEY NORTH - 2017

Yr.	Description	Cherry Hours Used	Total Hours Used	Capital Recovery	Cash Overhead		Operating		Total Costs/Hr.	
					Insurance	Taxes	Lube & Repairs	Fuel		
17	25 HP 2WD Tractor	51	800	1.24	0.01	0.09	1.38	3.58	4.96	6.30
17	80 HP 2WD Tractor	199	800	3.44	0.02	0.24	4.05	11.47	15.52	19.21
17	ATV 4WD	114	285	2.26	0.01	0.12	0.95	2.12	3.07	5.46
17	Mower - Flail 10'	37	133	4.68	0.02	0.28	4.58	0.00	4.58	9.57
17	OrchSprayer500GPPTO	135	285	7.74	0.03	0.34	4.54	0.00	4.54	12.66
17	Shredder-10' 3PT	9	133	3.52	0.02	0.21	3.94	0.00	3.94	7.69
17	Weed Sprayer 100 G	36	100	2.48	0.01	0.15	1.19	0.00	1.19	3.83
17	Pickup Truck 1/2 T	114	285	8.50	0.04	0.46	3.55	7.95	11.50	20.51

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER  
**TABLE 8. CHERRY OPERATIONS WITH EQUIPMENT & MATERIALS**  
 SAN JOAQUIN VALLEY NORTH - 2017

Operation	Operation Month	Tractor	Implement	Labor Type/ Material	Rate/ acre	Unit
Prune- Dormant	Jan			Non-Machine Labor	40.00	hours
Shred Prunings	Jan	80 HP 2WD Tractor	Shredder-10' 3PT	Equipment Operator Labor	0.27	hours
Growth Regulator	Jan	80 HP 2WD Tractor	OrchSprayer500GPTO	Equipment Operator Labor	0.37	hours
				CAN 17	316.00	lb N
				Entry	1.00	Gal
Pests- Insects	Feb	80 HP 2WD Tractor	OrchSprayer500GPTO	Equipment Operator Labor	0.37	hours
				440 (Supreme) Oil	3.00	gal
				Diazinon 50 W	4.00	Lb
Pollination- 2 hives	Mar			Pollination Fee	2.00	Hive
Pests- Bloom Disease	Mar	80 HP 2WD Tractor	OrchSprayer500GPTO	Equipment Operator Labor	0.37	hour
				Rovral 4F	1.50	Pint
Replant Trees - 3 Trees	Mar			Tree-SweetCherr5/8	3.00	Each
Survey, Plant & Pain	Mar			Plant & Paint Tree	3.00	Tree
				Paint/Whitewash	3.00	Each
				Carton/Tree Wrap	3.00	Each
				Backhoe Tree	3.00	Tree
Pests- Worms/BD (PM)	Apr	80 HP 2WD Tractor	OrchSprayer500GPTO	Equipment Operator Labor	0.37	Hours
				Intrepid 2F	10.00	floz
				20-20-20+micros	5.00	Lb
				Luna Sensation	6.40	floz
Weeds- Mow Middles 5X	Apr	80 HP 2WD Tractor	Mower - Flail 10'	Equipment Operator Labor	0.22	hour
	May	80 HP 2WD Tractor	Mower - Flail 10'	Equipment Operator Labor	0.22	hour
	June	80 HP 2WD Tractor	Mower - Flail 10'	Equipment Operator Labor	0.22	hour
	Aug	80 HP 2WD Tractor	Mower - Flail 10'	Equipment Operator Labor	0.22	hour
	Sept	80 HP 2WD Tractor	Mower - Flail 10'	Equipment Operator Labor	0.22	hour
Irrigate 8X	Apr			Non-Machine Labor	0.24	hour
				Water - Pumped	3.00	AcIn
	May			Non-Machine Labor	0.32	hour
				Water - Pumped	4.00	AcIn
	June			Non-Machine Labor	0.32	hour
				Water - Pumped	4.00	AcIn
	July			Non-Machine Labor	0.64	hour
				Water - Pumped	8.00	AcIn
	Aug			Non-Machine Labor	0.64	hour
				Water - Pumped	8.00	AcIn
	Sept			Non-Machine Labor	0.24	hour
				Water - Pumped	3.00	AcIn
Pests- SWD/BD (PM)	Apr	80 HP 2WD Tractor	OrchSprayer500GPTO	Equipment Operator Labor	0.37	hour
				Success	6.40	floz
				Merivon	5.50	floz
				Warrior II	2.50	floz
				ProGibb LV Plus	12.00	floz
Weeds- Spot Spray 2X	Apr	25 HP 2WD Tractor	Weed Sprayer 100 G	Equipment Operator Labor	0.36	hour
				Roundup WeatherMax	0.40	Pint
	July	25 HP 2WD Tractor	Weed Sprayer 100 G	Equipment Operator Labor	0.36	hour
				Roundup WeatherMax	0.40	Pint
Fertilize- CAN 17	Apr	25 HP 2WD Tractor		Equipment Operator Labor	0.37	Hours
				CAN 17 (fertilizer)	60.00	lb N
Pest- Insects(SWD)	Apr	80 HP 2WD Tractor	OrchSprayer500GPTO	Equipment Operator Labor	0.37	hour
Pests- SWD/PM/Rot	May	80 HP 2WD Tractor	OrchSprayer500GPTO	Equipment Operator Labor	0.37	hour
				Merivon	5.50	floz
				Danitol 2.4 EC	16.00	floz
Growth Regulator	May	80 HP 2WD Tractor	OrchSprayer500GPTO	Equipment Operator Labor	0.37	hour
				ProGibb LV Plus	12.00	floz
Prune- Summer	June			Non-Machine Labor	12.00	hours
Pests- Leafhopper/Mites	June	80 HP 2WD Tractor	OrchSprayer500GPTO	Equipment Operator Labor	0.37	hour
				Imidacloprid 2F	3.00	floz
				Onager	24.00	floz
Leaf Tissue Analysis	July		ATV 4WD	Non-Machine Labor	0.05	hour
				Leaf Analysis	0.05	each
Pests- Leafhopper	Aug	80 HP 2WD Tractor	OrchSprayer500GPTO	Equipment Operator Labor	0.37	hour
				Imidacloprid 2F	3.00	floz
	Sept	80 HP 2WD Tractor	OrchSprayer500GPTO	Equipment Operator Labor	0.37	hour
				Imidacloprid 2F	3.00	floz
Weeds- Fall Strip Spray	Nov	25 HP 2WD Tractor	Weed Sprayer 100 G	Equipment Operator Labor	0.36	hour
				Goal 2 XL	1.50	Pint
				Gramoxone Inteon	1.25	Pint
				Surflan 4 AS	4.00	Pint
Pickup Truck Use	Nov		Pickup Truck 1/2 T	Equipment Operator Labor	3.42	hours
ATV Use	Nov		ATV 4WD	Equipment Operator Labor	3.42	hours
Hand Harvest	May			Pick	10,800.00	Lb

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**TABLE 8. CONTINUED**  
 SAN JOAQUIN VALLEY NORTH – 2017

Operation	Operation Month	Tractor	Implement	Labor Type/ Material	Rate/ acre	Unit
Haul- 350 lb. bins	May			Haul: 350-pound Bins	30.86	Bin
Packing Charge- Domestic	May			Packing- domestic 16 lb.	329.00	Box
Packing Charge- Japan	May			Packing- export 18 lb.	157.50	Box
Sales Commission- 7.5%	May			Sales Commission- 7.5% domestic	329.00	Box
				Sales Commission- 7.5% export	157.50	Box
California Cherry Board	May			Assessment Fee	8,100.00	Lb