

SAMPLE COSTS TO PRODUCE PEARS

Green Bartlett



SACRAMENTO RIVER DELTA – SACRAMENTO COUNTY 2023

Prepared by:

Rachel Elkins	UCCE Farm Advisor, Emeritus, Lake and Mendocino Counties
Michelle Leinfelder-Miles	UCCE Farm Advisor, San Joaquin County, Delta Region
Clebson Goncalves	UCCE Farm Advisor, Lake and Mendocino Counties
Jeremy Murdock	Staff Research Associate, Department of Agricultural and Resource Economics, UC Davis
Paul Long	Staff Research Associate, Department of Agricultural and Resource Economics, UC Davis
Brittney Goodrich	UCCE Specialist, Department of Agricultural & Resource Economics, UC Davis

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UC AGRICULTURE AND NATURAL RESOURCES
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**SAMPLE COSTS TO PRODUCE PEARS
SACRAMENTO RIVER DELTA - Sacramento County 2023**

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INTRODUCTION

Sample costs to produce pears in the Sacramento River Delta, Sacramento County, are presented in this study. The 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 August 2023 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 1 and 2 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; Department of Agricultural and Resource Economics, at 530-752-4651 or jmmurdock@ucdavis.edu. The local extension office can be contacted through UCCE, Sacramento 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.

Costs and Returns Study Program/Acknowledgements. A cost and return study is a compilation of specific crop data collected from meetings with professionals working in production agriculture from the region the study is based. The authors thank the farmer cooperators, and other industry representatives who provided information, assistance, and expert advice. **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.** *The University of California, Division of Agriculture and Natural Resources (UC ANR) is an equal opportunity provider.*

ASSUMPTIONS

The following assumptions refer to tables 1 to 7 and pertain to sample costs to produce pears in Sacramento County. Cultural practices and costs for pear production vary considerably among growers within the region; therefore, many of the costs, practices, and materials in this study will not be applicable to every farm. The practices and inputs used in this cost study serve as a guide only. Cultural practices vary by farm and the differences can be significant.

Farm. The hypothetical farm located on the valley floor in the Sacramento River Delta, Sacramento County, is owned and operated by the owner. The 400 contiguous acre farm consists of 100 acres of pears, 290 acres of orchard crops, such as cherries and apples, and 10 acres for a shop, equipment yard and roads. The orchard is on loam soil, typical of the region.

Trees. The pear cultivar planted in this study is Green Bartlett on Winter Nellis rootstock, a favorable combination in Sacramento County. Bartlett is a dual-purpose pear, utilized for both fresh market and processing. The trees are planted on 9 X 18-foot spacing, 269 trees per acre. Pear trees have a long production life if they are well maintained. Pear orchards may have some trees over 100 years old still producing a commercial crop. The economic life of the orchard in this study is estimated to be 95 years.

Production Operating Costs and Material Inputs

Replanting. An average of one tree per acre is replanted each year. The tree stock is OH X F 87 or 97.

Pruning. A contract labor crew hand prunes during the winter months (December). Crews consist of 20 laborers and one foreman per crew. Prunings are chopped in February during the first mowing.

Irrigation. Many growers in the area have riparian rights. The primary irrigation costs are pumping costs plus irrigation labor. The cost is based on using 60 hp motors to pump 30 acre-inches from the river. Price per acre-foot of water will vary by grower in this region depending on power source, power cost, and other irrigation factors. In this study, the pumping cost of \$200 per acre-foot of water or \$16.67 per acre-inch is used. No assumption is made about effective rainfall or runoff.

Fertilization. Tree nitrogen status is determined during the season by visual observation (shoot vigor and leaf color) and by leaf analysis taken in July. Nitrogen is applied in June and September. Nitrogen (N) as calcium nitrate at 90-100 pounds of actual N per acre is applied in June and as urea at 60 pounds of N per acre in September. Muriate of potash at 200 pounds of potassium (K) or 323 pounds of material per acre is applied in the fall (September/October). The grower uses a tractor and rented fertilizer spreader for all fertilizer applications.

Pest Management. The pesticides and rates mentioned in this cost study are listed in UC Pest Management Guidelines, Pears. For information on other pesticides available, pest identification, monitoring, and management, visit the UC IPM website at www.ipm.ucdavis.edu. **Pest control costs can vary considerably each year depending upon local conditions and pest populations in any given year.** For information and pesticide use permits, contact the local county Agricultural Commissioner's office. **Pesticides mentioned in this study are not recommendations, but those commonly used in the region**

Pest Control Adviser (PCA). Written recommendations are required for many pesticides and are available from licensed pest control or certified crop advisers. In addition the PCA or an independent consultant will monitor the field during the growing season for fertilizer recommendations. Growers may hire a

private PCA or receive the service as part of a service agreement with an agricultural chemical and fertilizer company. In this study, a \$80 per acre PCA fee is included.

Weeds. A fall strip spray containing pre-emergent and foliar herbicides (Alion, Matrix, Roundup, Treevix) is applied in November along a six-foot strip in the tree row. The row middles are chemically mowed in February with Reckon and Roundup. In late May a preharvest strip spray is applied using Treevix and Roundup.

The row middles are mowed once a month for seven months from February to August. The mowing in February occurs one week after pruning to allow for shredding of the prunings. The mowing in July is completed before harvest and the mowing in August is completed after harvest.

Insects and Mites. Pests treated in this study are codling moth, pear psylla, oriental fruit moth (OFM), and mites. All pest management operations are done by the growers with their own equipment.

Codling moth is considered the primary pear pest and its control can affect subsequent control of other pests. In this study, pheromone lures are used for mating disruption and are hung at a rate of 200 lures per acre in April. The traps are monitored as part of the PCA service. Pheromone puffers can be used as well, and are hung at a rate of 1 per acre, but are not included in the study. Delegate insecticide is applied in May or June. Codling moth sprays in the region range from one to three depending on population and year. It is recommended to alternate Delegate with Altacor each year to prevent codling moth resistance.

Pear psylla is an economically significant insect pear pest. Psylla is controlled with horticultural oil and/or Agri-Mek applied at various times during the year. Treatments made in this study include a dormant spray (oil) in January, a delayed dormant spray in February, a LambdaStar treatment at cluster bud in March, and a Agri-Mek treatment in April. The psylla injects a toxin into the tree, produces honeydew, and vectors the disease pear decline (caused by a mycoplasma) and if severe enough, can lead to yield reductions, smaller fruit size, and loss of tree vigor. Honeydew excreted by psylla can cause russetting on fruit and sooty mold on leaves. Pear decline is not considered a major problem if trees are grafted to a resistant rootstock.

Mites are controlled with a dormant and delayed dormant spray. Additionally, a Agri-Mek treatment in April provides mite control in season, and in October a cleanup spray consisting of lime sulfur and horticultural oil is applied for mite and psylla control.

Disease. Fourteen treatments for fire blight are made per season, averaging 1 application per week. Firewall and Fireline are mixed and applied eleven times from early March through late May. Each application is made to alternate rows and is alternated so that each week both sides of the tree have been sprayed. A copper spray is applied in February and two Kasumin applications are made (one in March and one in April). Pesticides used to control fire blight are often tank-mixed with other materials. In this study, materials to control OFM, mites, codling moth, and psylla are applied with fire blight treatments. During years of heavy disease pressure, fire blight may require 15 or more pesticide applications. In addition to pesticides, blight infections are cut out by hand in the spring (April, May, June). Fire blight symptoms usually appear first in blossom clusters and shoot tips and if left untreated, the infection can move into twigs, stems, and branches. Severe infection may not only cause loss of fruit, but may kill entire branches or trees.

Pear Scab is controlled with four fungicide treatments made in the spring prior to infection. Four scab sprays are applied. In March and April three sprays with Mangate ProStik are tank mixed with the blight sprays. In late April or May Narvos is tank mixed with blight sprays. Pear scab is caused by a fungus that first attacks young fruit, appearing as dark velvety spots and often causing the young pears to drop. If fruit

does not drop, scabbing and deformities occur and cause reductions in quality. Pear scab can be a serious disease during cool, wet springs.

Vertebrate (Rodent) Pests. The major vertebrate pests in pear orchards for this region are squirrels, voles and pocket gophers. They are managed using poison bait applied in the spring while populations are low. The bait is placed underground in an artificial burrow built by a mechanical bait applicator attached to a tractor and/or broadcast. Gophers intersecting the tunnels will explore them and eat the bait. Growers may also use trapping methods.

Growth Regulator. Refine, a growth hormone, is applied in June to control pear drop.

Harvest. The crop is harvested with contract labor. Picking, sorting, and packing costs are paid by the grower. The harvest season for Green Bartlett is usually July to early August. The orchard is harvested twice. The first pick is selective and usually collects a third of the fruit, most of which will be sold on the fresh market. The second pick gathers the remaining pears about 10 days or two weeks later. Harvest crews use ladders and picking bags to hand pick fruit that is placed into half-ton field bins on bin trailers. The grower uses four contract crews at ten men each. Each man picks five 1,000-pound bins per 6.5 hour day. The contractor charges the grower \$43.50 per bin plus 31 percent for contractor overhead. Each crew has one crew boss, two sorters and one tractor driver. The sorters and driver are hired by the grower and not the contractor. The tractor driver hauls the filled bins to the packing shed or staging area. The crew boss supervises the picking and moves the picking trailers around, when the tractor driver is hauling the fruit. The grower owns a forklift, rents a forklift and hires two forklift drivers. Two tractors and two bin trailers with four 1,000 pounds bins per trailer are assigned to each crew. The grower uses two of his tractors and rents six for one month. The grower owns the bin trailers and the bins are provided by the packinghouse. The cost for ladders and picking bags is not included in the harvest costs but as a non-cash overhead investment with all costs charged to the pear orchard. The grower pays the custom hauling costs for fresh market fruit only; the processor pays for the fruit processing.

Yields. Typical annual yields for Green Bartlett pears are measured in tons per acre. Yields fall into three categories: fresh market, processed (canning/unrestricted grade), and off-grade (juice/restricted grade). The latter two categories are pears that will not make fresh market grades due to size, appearance or other damage, but can be used for canning or processing into juice, sauce or other processed pear products. Off-grade pears are used in juice, concentrate, fermented products, drying, and frozen goods.

An assumed yield of 23 tons per acre is used to calculate cost per ton. A typical yield range is 20 to 30 tons per acre. Yield maturity is reached in the tenth year.

Returns. This report separates yields, based on Bartlett grower input, for the three different categories from gross tonnage as follows: fresh market - 52%, processed - 44%, and off-grade - 4%. Culls are not accounted for in this study. Growers are paid for fruit based on gross field tons for different grades. Estimated net return prices per ton (price received from packer less packing shed costs) for the categories described above are fresh market, \$550; canned, \$550; and juice grade, \$0 (no value). Use of return prices for pears is to calculate a ranging analysis for different yields and prices. Returns may vary during the season and from year to year.

Prices for processing pears are often higher than prices for fresh market pears because growers often have contracts for an amount to be delivered to the processor. Any pear supply beyond the contract amount is auctioned to fresh market buyers.

Assessments. Under a state marketing order, mandatory assessment fees are collected and administered by the California Pear Advisory Board (CPAB). This assessment is charged to growers to pay for pest management and registrations, pear marketing and advertising. Rates are set for pears bound for both fresh and processed markets. The CPAB fresh market assessment is \$14.30 per ton. The CPAB processing assessment for unrestricted grade is \$5.40 per ton and for other special products (i.e. juice and baby food) is \$1.50 per ton.

Additionally, growers may also pay a voluntary assessment to the California Pear Growers (CPG). The CPG uses these funds to negotiate cannery pricing, lobby for school lunch purchases of canned pears and any other political lobbying which CPAB can't get involved in. CPG charges members \$2.00 per ton of processed fruit, however, this assessment has not been included in this study.

Pickup/ATV. The pickup is owned by the grower and used for business use. It is assumed that 10,000 miles are for business miles applicable to this orchard. The ATV is used to inspect the orchard, to irrigate and monitor the irrigation system, and other assorted uses.

Labor, Interest, and Equipment

Labor. Hourly wages for workers are \$18.50 for machine operators and \$16.50 per hour non-machine labor. Adding 48 percent for the employers' share of federal and state payroll taxes, insurance, and other possible benefits gives the labor rates shown of \$27.38 and \$24.42 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 orchards 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 August, 2023. Labor for operations involving machinery are 20 percent higher than the operation time given in Table 1 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 August 2023 data from the Energy Information Administration are \$4.80 and \$4.40 per gallon, respectively. The cost includes a 9.25 percent sales tax, a \$0.36/gal excise tax on diesel fuel, an 2.25% sales tax, and a \$0.42/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 in Table 1 is determined by multiplying the total hourly operating cost in Table 6 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 8.50 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 August, 2023.

Risk. The risks associated with pear 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 pear production. A sustainable operation responds to the many potential risk factors by incorporating effective risk management that combines specific tactics in a detailed manner and in various combinations. Moreover, it is important to realize that actual results may differ from the returns listed in this study. Table 4 reflects a ranging analysis of returns based on various assumptions, and is therefore hypothetical in nature. 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.

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

Property Insurance. This provides coverage for property loss and is charged at 0.710 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 1,165 for the entire farm or \$2.91 per acre.

Crop Insurance. Crop insurance is available to pear 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. 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 study, the cost of crop insurance is \$102/acre. <http://www.rma.usda.gov/policies/2016policy.html>

Property Taxes. Counties charge a base property tax rate of one 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.

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

Office Expense. Office and business expenses are estimated at \$250 per acre for the entire farm. These expenses include office supplies, telephones, bookkeeping, accounting, tax preparation, shop and office utilities, safety training/records and training supplies, and miscellaneous administrative charges.

Reclamation Fee. The reclamation district manages the water drainage and charges \$35 per acre.

North Delta Water Agency Fee. A \$4.28 per acre fee.

Sanitation Services. Sanitation services provide portable toilets and washbasins for the pear orchard costing a total of \$1,376 a year or \$13.76 per acre. Two toilets are rented during pruning, three during harvest and one the rest of the season. The cost includes delivery and 8 months of weekly service.

Safety. This includes safety training, record keeping, and safety equipment such as facemasks, goggles, and coveralls. An assumed cost is included in Office Expenses.

Investment Repairs. Annual maintenance on investments (buildings, irrigation system, etc.) listed under Non-Cash Overhead is calculated as 2 percent of the purchase price. A maintenance cost is not included for orchard establishment and land.

Non-Cash Overhead

Non-cash overhead costs, shown on an annual per-acre basis, are 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 and Biological Engineers (ASABE) based on equipment type and years of life. The life in years is estimated by dividing the wear out life, as given by ASABE, by the annual hours of use in the 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 5.

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 7.00 percent is used to calculate capital recovery. Note this long term interest rate is higher than the interest rate used for capital invested in annual production operations. 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 August 2023.

Irrigation System. The cost is based on using two 60 hp motors to pump 30 acre-inches from the river with a lateral flow of 25 to 30 feet. Water is pumped to the orchard after running through a filtration station into an underground, permanent sprinkler system in the tree rows. Because an older orchard was removed at this location, pumps and wells already existed. The cost of the irrigation system is for

refurbishing the pumps and motors, installing underground, permanent sprinklers and a new filtration system. The new irrigation system was installed after the orchard had been laid out, but prior to planting. The life of the irrigation system is estimated to be 25 years. The irrigation system is considered an improvement to the property.

Drainage System. Tile drains are installed underground in the field prior to planting.

Fuel Tanks. Two 500-gallon fuel tanks, one diesel tank and one gasoline tank, are placed on stands in cement containment meeting Federal, State, and local regulations. Fuel is delivered to the equipment by gravity feed.

Tools. Includes shop tools/equipment, hand tools and field tools such as pruning equipment.

Ladders/Picking Bags. Costs are for 50 picking bags and 50 twelve-foot orchard ladders.

Building. The metal shop buildings comprise 2,400 square feet on a cement slab.

Land. In this study, open land suitable for pear production is valued at \$18,000 per acre.

Establishment Cost. The cost to establish the orchard is used to determine the non-cash overhead expenses: depreciation and interest on investment for the production years. The establishment cost is the sum of cash costs for land preparation, planting, trees, production expenses, and cash overhead for growing pear trees through the first year fruit is harvested minus any returns from production. The Total Accumulated Net Cash Cost in the fifth year represents the establishment cost per acre. Establishment costs in this study are estimated, based on previous pear studies. The estimated cost is \$12,500 per acre or \$1,250,000 for the 100-acre orchard. Establishment cost is depreciated beginning in the sixth year over the remaining 95 years of production.

Equipment. 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. 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.

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TABLE 1. COSTS PER ACRE TO PRODUCE PEARS

SACRAMENTO VALLEY - Sacramento County 2023

Operation	Equipment Time (Hrs/A)	Labor Cost	Fuel	Cash and Labor Costs per Acre			Total Cost	Your Cost
				Lube & Repairs	Material Cost	Custom/ Rent		
Cultural:								
Weeds- Fall Strip Spray	0.18	6	1	1	82	0	90	
Insects- Dormant Spray	0.50	16	10	7	96	0	130	
Prune	0.00	0	0	0	0	1,460	1,460	
Weeds- Mow Middles (Shred Prunings)	0.34	11	7	4	0	0	22	
Disease- Fire Blight (Copper)	0.38	13	8	6	62	0	88	
Weeds- Chemical Mow	0.18	6	1	1	63	0	71	
Insects- Delayed Dormant Spray	0.38	13	8	6	67	0	93	
Disease- Fire Blight (Antibiotic) 11X	2.84	93	59	41	583	0	776	
Disease- Fire Blight (Kasumin) 2X	0.51	17	11	7	160	0	195	
Disease- Scab (Manzate Pro Stik) 3X	0.00	0	0	0	136	0	136	
Insects- Psylla @ Cluster Bud	0.00	0	0	0	15	0	15	
Replant Trees (1/acre)	0.00	6	0	0	13	0	19	
Weeds- Mow Middles 6x	1.38	45	29	16	0	0	90	
Irrigate 9X	0.00	134	0	0	500	0	634	
Insects- Mites	0.00	0	0	0	15	0	15	
Rodent Control (Wilco Bait)	0.20	7	1	0	27	0	35	
Disease- Cut Blighted Limbs	0.00	0	0	0	0	620	620	
Pests- Codling Moth (Pheremones)	0.00	31	0	0	110	0	141	
PCA Fee (includes monitoring traps)	0.00	0	0	0	0	80	80	
Disease- Scab (Narvos)	0.00	0	0	0	23	0	23	
Insects- Codling Moth	0.00	0	0	0	79	0	79	
Insects- OFM	0.00	0	0	0	44	0	44	
Fertilize- Calcium Nitrate	0.10	3	2	1	140	5	151	
Growth Regulator (Refine)	0.38	13	8	6	52	0	78	
Weeds- Pre-Harvest Strip Spray	0.18	6	1	1	58	0	65	
Leaf Sampling 1/20 acre	0.00	0	0	0	3	0	3	
Fertilize- Potash	0.10	3	2	1	97	5	108	
Fertilize- Urea	0.10	3	2	1	43	5	54	
Insects- Cleanup Spray	0.50	16	10	7	110	0	144	
Pickup Truck Use	3.00	99	33	17	0	0	148	
ATV Use	0.57	19	2	1	0	0	21	
Extra Labor- Cutting Blighted Limbs	0.00	24	0	0	0	0	24	
TOTAL CULTURAL COSTS	11.81	584	195	121	2,576	2,175	5,652	
Harvest:								
Pick Fruit	1.25	270	13	4	0	2,708	2,995	
Haul Fruit: Fresh Market Only	0.00	0	0	0	0	240	240	
Assessments	0.00	0	0	0	227	0	227	
TOTAL HARVEST COSTS	1.25	270	13	4	227	2,948	3,462	
Interest on Operating Capital at 8.50%							200	
TOTAL OPERATING COSTS/ACRE	13	854	208	125	2,803	5,123	9,314	

TABLE 1. CONTINUED

SACRAMENTO VALLEY - Sacramento County 2023

Operation	Equipment	Labor	Fuel	Cash and Labor Costs per Acre			Total	Your
	Time (Hrs/A)			Cost	Lube & Repairs	Material Cost		
CASH OVERHEAD:								
Crop Insurance							102	
Liability Insurance							3	
Office Expense							250	
Reclamation Fee							35	
Sanitation Fees							14	
North Delta Water Agency Fee							4	
Property Taxes							255	
Property Insurance							18	
Investment Repairs							41	
TOTAL CASH OVERHEAD COSTS/ACRE							723	
TOTAL CASH COSTS/ACRE							10,036	
NON-CASH OVERHEAD:		Per Producing	Annual Cost					
		Acre	Capital Recovery					
Building 40X60		205	17		17			
Establishment SV		12,500	876		876			
Fuel Tanks 2-500 g		22	2		2			
Ladders (50) 12 ft.		75	10		10			
Land - Pears		18,000	1,260		1,260			
Picking Bags (50)		10	2		2			
Shop Tools		31	3		3			
Spray Mixing Station		19	2		2			
Tile Drainage System		1,500	129		129			
Irrigation Pumps (2)- 60hp		200	21		21			
Equipment		1,406	197		197			
TOTAL NON-CASH OVERHEAD COSTS		33,967	2,520		2,520			
TOTAL COSTS/ACRE							12,556	

TABLE 2. COSTS AND RETURNS PER ACRE TO PRODUCE PEARS

SACRAMENTO VALLEY - Sacramento County 2023

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Fresh	12	Ton	550.00	6,600	
Canned	10	Ton	550.00	5,500	
Juice	1	Ton	0.00	0	
TOTAL GROSS RETURNS	23	Ton		12,100	
OPERATING COSTS					
Herbicide:				203	
Alion	1.25	floz	14.50	18	
Matrix	1.00	floz	6.37	6	
Roundup PowerMax	12.00	Pint	8.50	102	
Treevix	2.00	floz	23.70	47	
Reckon 280 SL	75.00	floz	0.39	29	
Fungicide:				443	
Kocide 3000	7.00	Lb	8.80	62	
Kasumin	128.00	floz	1.25	160	
Manzate Pro Stik	18.00	Lb	7.58	136	
Narvos 50 WDG	6.00		3.75	23	
Lime Sulfur	2.50	Gal	24.99	62	
Rodenticid:				27	
Gopher Getter	4.50	Lb	5.94	27	
Fertilizer:				283	
Calcium Nitrate	100.00	Lb N	1.40	140	
LeafAnalysis1/20ac	0.05	Each	50.00	3	
Muriate of Potash	323.00	Lb	0.30	97	
Urea (46-0-0)	60.00	Lb N	0.72	43	
Irrigation:				500	
Water - Pumped	30.00	AcIn	16.67	500	
Growth Reg:				52	
Refine 3.5 WSG	24.00	floz	2.15	52	
Lures/Conf:				110	
Isomate CTT (200 lures per acre)	1.00	Acre	110.00	110	
Custom:				5,022	
Prune	1.00	Acre	1460.00	1,460	
Blight Cutting	1.00	Acre	620.00	620	
PCA Fee	1.00	Acre	80.00	80	
Harvest - Hand	46.00	Bin	43.50	2,001	
HarvContract OH 31%	46.00	Bin	13.50	621	
Haul-Custom/Ton	12.00	Ton	20.00	240	
Tree:				12	
Tree - Pear 3/4"	1.00	Each	12.00	12	
Antibiotic:				583	
Mycoshield- Fireline	11.00	Lb	25.47	280	
Agri-mycin 17- Firewall	11.00	Lb	27.50	303	
Insecticide:				363	
Supreme Oil 440	22.00	Gal	9.55	210	
LambdaStar	5.00	Oz	2.94	15	
Agri-Mek SC	4.25	floz	3.44	15	
Delegate WG	6.50	Oz	12.23	79	
Intrepid 2F	16.00	floz	2.78	44	
Tree Aids:				1	
Tree Guards	1.00	Each	0.75	1	
Rent:				101	
FertSpreadr(FertCo	3.00	Acre	5.00	15	
Forklift Rental	1.00	acre	20.80	21	
Tractor Rental (6)	1.00	acre	65.00	65	
Assessment:				227	
CPAB- Fresh Market	12.00	Ton	14.30	172	
CPAB- Processed, unrestricted grade	10.00	Ton	5.40	54	
CPAB- Processed, other special products	1.00	Ton	1.50	2	
Labor				854	
Equipment Operator Labor	15.68	hrs	27.38	429	
Non-Machine Labor	17.40	hrs	24.42	425	
Machinery				333	
Fuel-Gas	7.88	gal	4.40	35	
Fuel-Diesel	36.12	gal	4.80	173	
Lube				31	
Machinery Repair				94	
Interest on Operating Capital @ 8.50%				200	
TOTAL OPERATING COSTS/ACRE				9,314	
NET RETURNS ABOVE OPERATING COSTS				2,786	

TABLE 2. CONTINUED

SACRAMENTO VALLEY - Sacramento County 2023

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
CASH OVERHEAD COSTS					
Crop Insurance				102	
Liability Insurance				3	
Office Expense				250	
Reclamation Fee				35	
Sanitation Fees				14	
North Delta Water Agency Fee				4	
Property Taxes				255	
Property Insurance				18	
Investment Repairs				41	
TOTAL CASH OVERHEAD COSTS/ACRE				723	
TOTAL CASH COSTS/ACRE				10,036	
NET RETURNS ABOVE CASH COSTS				2,064	
NON-CASH OVERHEAD COSTS (Capital Recovery)					
Building 40X60				17	
Establishment SV				876	
Fuel Tanks 2-500 g				2	
Ladders (50) 12 ft.				10	
Land - Pears				1,260	
Picking Bags (50)				2	
Shop Tools				3	
Spray Mixing Station				2	
Tile Drainage System				129	
Irrigation Pumps (2)- 60hp				21	
Equipment				197	
TOTAL NON-CASH OVERHEAD COSTS/ACRE				2,520	
TOTAL COST/ACRE				12,556	
NET RETURNS ABOVE TOTAL COST				-456	

TABLE 3. MONTHLY CASH COSTS PER ACRE TO PRODUCE PEARS

SACRAMENTO VALLEY - Sacramento County 2023

	NOV 22	DEC 22	JAN 23	FEB 23	MAR 23	APR 23	MAY 23	JUN 23	JUL 23	AUG 23	SEP 23	OCT 23	Total
Cultural:													
Weeds- Fall Strip Spray	90												90
Insects- Dormant Spray			130										130
Prune		1,460											1,460
Weeds- Mow Middles (Shred Prunings)				22									22
Disease- Fire Blight (Copper)				88									88
Weeds- Chemical Mow				71									71
Insects- Delayed Dormant Spray				93									93
Disease- Fire Blight (Antibiotic)11X					218	286	271						776
Disease- Fire Blight (Kasumin)2X					97	97							195
Disease- Scab(Manzate Pro Stik)3X					91	45							136
Insects- Psylla @ Cluster Bud					15								15
Replant Trees (1/acre)					19								19
Weeds- Mow Middles 6x					15	15	15	15	15	15			90
Irrigate 9X						85	85	169	169	85	42		634
Insects- Mites						15							15
Rodent Control (Wilco Bait)						35							35
Disease- Cut Blighted Limbs						205	211	205					620
Pests- Codling Moth (Pheromones)						141							141
PCA Fee						80							80
Disease- Scab (Narvos)							23						23
Insects- Codling Moth							79						79
Insects- OFM							44						44
Fertilize- Calcium Nitrate								151					151
Growth Regulator (Refine)								78					78
Weeds- Pre-Harvest Strip Spray							65						65
Leaf Sampling 1/20 acre									3				3
Fertilize- Potash											108		108
Fertilize- Urea											54		54
Insects- Cleanup Spray												144	144
Pickup Truck Use	12	12	12	12	12	12	12	12	12	12	12	12	148
ATV Use	2	2	2	2	2	2	2	2	2	2	2	2	21
Extra Labor- Cutting Blighted Li	2	2	2	2	2	2	2	2	2	2	2	2	24
TOTAL CULTURAL COSTS	106	1,476	146	290	472	1,019	810	633	203	116	220	160	5,652
Harvest:													
Pick Fruit									2,995				2,995
Haul Fruit:Fresh Market Only									240				240
Assessments									227				227
TOTAL HARVEST COSTS	0	0	0	0	0	0	0	0	3,462	0	0	0	3,462
Interest on Operating Capital @8.50%	1	11	12	14	18	25	31	35	61	-4	-3	-1	200
TOTAL OPERATING COSTS/ACRE	107	1,487	158	304	489	1,044	840	669	3,726	112	218	159	9,314
CASH OVERHEAD													
Crop Insurance											102		102
Liability Insurance											3		3
Office Expense	21	21	21	21	21	21	21	21	21	21	21	21	250
Reclamation Fee											35		35
Sanitation Fees											14		14
North Delta Water Agency Fee											4		4
Property Taxes				128					128				255
Property Insurance				9					9				18
Investment Repairs	3	3	3	3	3	3	3	3	3	3	3	3	41
TOTAL CASH OVERHEAD COSTS	24	24	24	161	24	24	24	24	161	24	182	24	723
TOTAL CASH COSTS/ACRE	131	1,512	182	465	514	1,069	865	693	3,887	136	400	184	10,036

TABLE 4. RANGING ANALYSIS
SACRAMENTO VALLEY- Sacramento County 2023

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE PEARS

	YIELD (TON)						
	17.00	19.00	21.00	23.00	25.00	27.00	29.00
OPERATING COSTS/ACRE:							
Cultural	5,652	5,652	5,652	5,652	5,652	5,652	5,652
Harvest	2,574	2,870	3,166	3,462	3,758	4,053	4,350
Interest on Operating Capital @ 8.50%	194	196	198	200	202	205	207
TOTAL OPERATING COSTS/ACRE	8,419	8,718	9,016	9,314	9,612	9,910	10,208
TOTAL OPERATING COSTS/TON	495.26	458.83	429.31	404.94	384.47	367.02	352.00
CASH OVERHEAD COSTS/ACRE	723	723	723	723	723	723	723
TOTAL CASH COSTS/ACRE	9,142	9,440	9,738	10,036	10,334	10,632	10,930
TOTAL CASH COSTS/TON	537.76	496.85	463.72	436.35	413.37	393.78	376.91
NON-CASH OVERHEAD COSTS/ACRE	2,520	2,520	2,520	2,520	2,520	2,520	2,520
TOTAL COSTS/ACRE	11,662	11,960	12,258	12,556	12,854	13,152	13,451
TOTAL COSTS/TON	686.00	629.00	584.00	546.00	514.00	487.00	464.00

Net Return per Acre above Operating Costs for Pears

PRICE (\$/ton)			YIELD (ton/acre)						
Fresh			9.00	10.00	11.00	12.00	13.00	14.00	15.00
	Canned		7.00	8.00	9.00	10.00	11.00	12.00	13.00
	Juice		1.00	1.00	1.00	1.00	1.00	1.00	1.00
430.00	430.00	0.00	-1,539	-978	-416	146	708	1,270	1,832
470.00	470.00	0.00	-899	-258	384	1,026	1,668	2,310	2,952
510.00	510.00	0.00	-259	462	1,184	1,906	2,628	3,350	4,072
550.00	550.00	0.00	381	1,182	1,984	2,786	3,588	4,390	5,192
590.00	590.00	0.00	1,021	1,902	2,784	3,666	4,548	5,430	6,312
630.00	630.00	0.00	1,661	2,622	3,584	4,546	5,508	6,470	7,432
670.00	670.00	0.00	2,301	3,342	4,384	5,426	6,468	7,510	8,552

Net Return per Acre above Cash Costs for Pears

PRICE (\$/ton)			YIELD (ton/acre)						
Fresh			9.00	10.00	11.00	12.00	13.00	14.00	15.00
	Canned		7.00	8.00	9.00	10.00	11.00	12.00	13.00
	Juice		1.00	1.00	1.00	1.00	1.00	1.00	1.00
430.00	430.00	0.00	-2,262	-1,700	-1,138	-576	-14	548	1,110
470.00	470.00	0.00	-1,622	-980	-338	304	946	1,588	2,230
510.00	510.00	0.00	-982	-260	462	1,184	1,906	2,628	3,350
550.00	550.00	0.00	-342	460	1,262	2,064	2,866	3,668	4,470
590.00	590.00	0.00	298	1,180	2,062	2,944	3,826	4,708	5,590
630.00	630.00	0.00	938	1,900	2,862	3,824	4,786	5,748	6,710
670.00	670.00	0.00	1,578	2,620	3,662	4,704	5,746	6,788	7,830

Net Return per Acre above Total Costs for Pears

PRICE (\$/ton)			YIELD (ton/acre)						
Fresh			9.00	10.00	11.00	12.00	13.00	14.00	15.00
	Canned		7.00	8.00	9.00	10.00	11.00	12.00	13.00
	Juice		1.00	1.00	1.00	1.00	1.00	1.00	1.00
430.00	430.00	0.00	-4,782	-4,220	-3,658	-3,096	-2,534	-1,972	-1,411
470.00	470.00	0.00	-4,142	-3,500	-2,858	-2,216	-1,574	-932	-291
510.00	510.00	0.00	-3,502	-2,780	-2,058	-1,336	-614	108	829
550.00	550.00	0.00	-2,862	-2,060	-1,258	-456	346	1,148	1,949
590.00	590.00	0.00	-2,222	-1,340	-458	424	1,306	2,188	3,069
630.00	630.00	0.00	-1,582	-620	342	1,304	2,266	3,228	4,189
670.00	670.00	0.00	-942	100	1,142	2,184	3,226	4,268	5,309

TABLE 5. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS

SACRAMENTO VALLEY - Sacramento County 2023

ANNUAL EQUIPMENT COSTS

Yr	Description	Price	Yrs Life	Salvage Value	Cash Overhead		Taxes	Total
					Capital Recovery	Insurance		
23	25 HP MFWD Tractor	19,500	15	3,796	1,990	8	116	2,115
23	80 HP 4WD Tractor1	75,000	10	22,154	9,075	34	486	9,595
23	80 HP 4WD Tractor2	75,000	10	22,154	9,075	34	486	9,595
23	ATV 4WD	9,700	7	3,680	1,375	5	67	1,446
23	Bait Applicator	1,046	10	185	136	0	6	142
23	Bin Trailer 1	1,970	15	189	209	1	11	220
23	Bin Trailer 3	1,970	15	189	209	1	11	220
23	Bin Trailer 4	1,970	15	189	209	1	11	220
23	Bin Trailer 5	1,970	15	189	209	1	11	220
23	Bin Trailer 6	1,970	15	189	209	1	11	220
23	Bin Trailer 7	1,970	15	189	209	1	11	220
23	Forklift-FieldLift	39,000	20	5,004	3,559	16	220	3,795
23	Orch.Sprayer 500G1	55,000	8	12,418	8,000	24	337	8,361
23	Orch.Sprayer 500G2	55,000	8	12,418	8,000	24	337	8,361
23	Pickup Truck 1/2 T	52,000	4	25,332	9,646	27	387	10,061
23	Weed Sprayer 100 G	8,450	5	2,752	1,582	4	56	1,642
23	Mower - Flail 9'	15,500	10	2,741	2,008	6	91	2,106
23	Bin Trailer 2	1,970	15	189	209	1	11	220
23	Bin Trailer 8	1,970	15	189	209	1	11	220
23	Orch.Sprayer 500G3	55,000	8	12,418	8,000	24	337	8,361
23	80 HP 4WD Tractor3	75,000	10	22,154	9,075	34	486	9,595
TOTAL		550,956	-	148,719	73,192	248	3,498	76,939
60% of New Cost*		330,574	-	89,232	43,915	149	2,099	46,163

*Used to reflect a mix of new and used equipment

ANNUAL INVESTMENT COSTS

<u>Cash Overhead</u>								
Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insurance	Taxes	Repairs	Total
INVESTMENT								
Building 40X60	80,000	30	0	6,447	28	400	1,600	8,475
Establishment SV	1,250,000	95	0	87,642	444	6,250	0	94,335
Fuel Tanks 2-500 g	8,740	25	612	740	3	47	175	965
Ladders (50) 12 ft.	7,500	10	525	1,030	3	40	150	1,223
Land - Pears	1,800,000	95	1,800,000	126,000	1,278	18,000	0	145,278
Picking Bags (50)	1,000	5	70	232	0	5	20	257
Shop Tools	12,000	15	1,133	1,272	5	66	240	1,583
Spray Mixing Station	7,223	15	722	764	3	40	144	951
Tile Drainage System	150,000	25	0	12,872	53	750	3,000	16,675
Irrigation Pumps (2)- 60hp	20,000	15	1,400	2,140	8	107	400	2,655
TOTAL INVESTMENT	3,336,463	-	1,804,462	239,139	1,825	25,705	5,729	272,398

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Crop Insurance	100.00	Acre	102.00	10,200
Liability Insurance	100.00	Acre	2.91	291
Office Expense	100.00	Acre	250.00	25,000
Reclamation Fee	100.00	Acre	35.00	3,500
Sanitation Fees	100.00	Acre	13.76	1,376
North Delta Water Agency Fee	100.00	Acre	4.28	428

TABLE 6. HOURLY EQUIPMENT COSTS

SACRAMENTO VALLEY - Sacramento County 2023

Yr	Description	Pears	Total	Cash Overhead		Operating		Total	Total
		Hours	Hours	Capital	Insurance	Taxes	Lube & Repairs	Fuel	Oper.
		Used	Used	Recovery					Costs/Hr.
23	25 HP MFWD Tractor	149	1066	1.12	0.00	0.07	1.35	5.89	7.25
23	80 HP 4WD Tractor1	381	1600	3.40	0.01	0.18	4.75	18.86	23.61
23	80 HP 4WD Tractor2	417	1600	3.40	0.01	0.18	4.75	18.86	23.61
23	ATV 4WD	57	285	2.89	0.01	0.14	1.15	2.93	4.08
23	Bait Applicator	20	120	0.68	0.00	0.03	0.40	0.00	0.40
23	Bin Trailer 1	63	166	0.75	0.00	0.04	0.28	0.00	0.28
23	Bin Trailer 3	63	166	0.75	0.00	0.04	0.28	0.00	0.28
23	Bin Trailer 4	63	166	0.75	0.00	0.04	0.28	0.00	0.28
23	Bin Trailer 5	63	166	0.75	0.00	0.04	0.28	0.00	0.28
23	Bin Trailer 6	63	166	0.75	0.00	0.04	0.28	0.00	0.28
23	Bin Trailer 7	63	166	0.75	0.00	0.04	0.28	0.00	0.28
23	Forklift-FieldLift	69	150	14.24	0.06	0.88	2.29	12.73	15.02
23	Orch.Sprayer 500G1	247	250	19.20	0.06	0.81	9.39	0.00	9.39
23	Orch.Sprayer 500G2	214	250	19.20	0.06	0.81	9.39	0.00	9.39
23	Pickup Truck 1/2 T	300	500	11.58	0.03	0.46	5.52	11.00	16.52
23	Weed Sprayer 100 G	53	300	3.16	0.01	0.11	2.30	0.00	2.30
23	Mower - Flail 9'	172	200	6.03	0.02	0.27	6.35	0.00	6.35
23	Bin Trailer 2	63	166	0.75	0.00	0.04	0.28	0.00	0.28
23	Bin Trailer 8	63	166	0.75	0.00	0.04	0.28	0.00	0.28
23	Orch.Sprayer 500G3	89	250	19.20	0.06	0.81	9.39	0.00	9.39
23	80 HP 4WD Tractor3	28	1600	3.40	0.01	0.18	4.75	18.86	23.61

UC COOPERATIVE EXTENSION-AGRICULTURAL AND RESOURCE ECONOMICS, UC DAVIS
TABLE 7. OPERATIONS WITH EQUIPMENT & MATERIALS
 SACRAMENTO VALLEY - Sacramento County 2023

Operation	Operation Month	Tractor	Implement	Labor Type/ Material	Rate/ acre	Unit
Weeds- Fall Strip Spray	Nov	25 HP MFWD Tractor	Weed Sprayer 100 G	Equipment Operator Labor	0.21	hour
				Alion	1.25	floz
				Matrix	1.00	floz
				Roundup PowerMax	4.00	Pint
				Treevix	1.00	floz
Insects- Dormant Spray	Jan	80 HP 4WD Tractor1	Orch.Sprayer 500G1	Equipment Operator Labor	0.60	hour
				Supreme Oil 440	10.00	Gal
Prune	Dec			Prune	1.00	Acre
Weeds- Mow Middles	Feb	80 HP 4WD Tractor1	Mower - Flail 9'	Equipment Operator Labor	0.41	hour
Disease- Fire Blight	Feb	80 HP 4WD Tractor2	Orch.Sprayer 500G3	Equipment Operator Labor	0.46	hour
				Kocide 3000	7.00	Lb
Weeds- Chemical Mow	Feb	25 HP MFWD Tractor	Weed Sprayer 100 G	Equipment Operator Labor	0.21	hour
				Roundup PowerMax	4.00	Pint
				Reckon 280 SL	75.00	floz
Insects- Delayed Dormant	Feb	80 HP 4WD Tractor2	Orch.Sprayer 500G2	Equipment Operator Labor	0.46	hour
				Supreme Oil 440	7.00	Gal
Disease- Fire Blight	Mar	80 HP 4WD Tractor1	Orch.Sprayer 500G1	Equipment Operator Labor	1.05	hours
				Mycoshield- Fireline	3.00	Lb
				Agri-mycin 17- Firewall	3.00	Lb
	Apr	80 HP 4WD Tractor1	Orch.Sprayer 500G1	Equipment Operator Labor	1.31	hours
				Mycoshield- Fireline	4.00	Lb
				Agri-mycin 17- Firewall	4.00	Lb
	May	80 HP 4WD Tractor2	Orch.Sprayer 500G2	Equipment Operator Labor	1.05	hours
				Mycoshield- Fireline	4.00	Lb
				Agri-mycin 17- Firewall	4.00	Lb
Disease- Fire Blight	Mar	80 HP 4WD Tractor2	Orch.Sprayer 500G3	Equipment Operator Labor	0.31	hour
				Kasumin	64.00	floz
	Apr	80 HP 4WD Tractor3	Orch.Sprayer 500G3	Equipment Operator Labor	0.31	hour
				Kasumin	64.00	floz
Disease- Scab	Mar			Manzate Pro Stik	12.00	Lb
	Apr			Manzate Pro Stik	6.00	Lb
Insects- Psylla @ Cluster	Mar			LambdaStar	5.00	Oz
Replant Trees (1/acre)	Mar			Non-Machine Labor	0.26	hour
				Tree - Pear 3/4"	1.00	Each
				Tree Guards	1.00	Each
Weeds- Mow Middles 6X	Mar	80 HP 4WD Tractor1	Mower - Flail 9'	Equipment Operator Labor	0.28	hour
	Apr	80 HP 4WD Tractor1	Mower - Flail 9'	Equipment Operator Labor	0.28	hour
	May	80 HP 4WD Tractor2	Mower - Flail 9'	Equipment Operator Labor	0.28	hour
	June	80 HP 4WD Tractor2	Mower - Flail 9'	Equipment Operator Labor	0.28	hour
	July	80 HP 4WD Tractor2	Mower - Flail 9'	Equipment Operator Labor	0.28	hour
	Aug	80 HP 4WD Tractor2	Mower - Flail 9'	Equipment Operator Labor	0.28	hour
Irrigate 9X	Apr			Non-Machine Labor	0.73	hour
				Water - Pumped	4.00	AcIn
	May			Non-Machine Labor	0.74	hour
				Water - Pumped	4.00	AcIn
	June			Non-Machine Labor	1.47	hours
				Water - Pumped	8.00	AcIn
	July			Non-Machine Labor	1.46	hours
				Water - Pumped	8.00	AcIn
	Aug			Non-Machine Labor	0.73	hour
				Water - Pumped	4.00	AcIn
	Sept			Non-Machine Labor	0.37	hour
				Water - Pumped	2.00	AcIn
Insects- Mites	Apr			Agri-Mek SC	4.25	floz
Rodent Control	Apr	25 HP MFWD Tractor	Bait Applicator	Equipment Operator Labor	0.24	hour
				Gopher Getter	4.50	Lb
Disease- Cut Blighted	Apr			Blight Cutting	0.33	Acre
	May			Blight Cutting	0.34	Acre
	June			Blight Cutting	0.33	Acre
Pests- Codling Moth	Apr			Non-Machine Labor	1.25	hours
				Isomate CTT (200 lures per acre)	1.00	Acre
PCA Fee	Apr			PCA Fee	1.00	Acre
Disease- Scab (Narvos)	May			Narvos 50 WDG	6.00	
Insects- Codling Moth	May			Delegate WG	6.50	Oz
Insects- OFM	May			Intrepid 2F	16.00	floz
Fertilize- Calcium Nitrate	June	80 HP 4WD Tractor1		Equipment Operator Labor	0.12	hour
				Calcium Nitrate	100.00	Lb N
				FertSpreadr(FertCo	1.00	Acre
Growth Regulator	June	80 HP 4WD Tractor2	Orch.Sprayer 500G2	Equipment Operator Labor	0.46	hour
				Refine 3.5 WSG	24.00	floz

UC COOPERATIVE EXTENSION-AGRICULTURAL AND RESOURCE ECONOMICS, UC DAVIS
TABLE 7. CONTINUED
 SACRAMENTO VALLEY - Sacramento County 2023

Operation	Operation Month	Tractor	Implement	Labor Type/ Material	Rate/ acre	Unit
Weeds- Pre-Harvest Spray	May	25 HP MFWD Tractor	Weed Sprayer 100 G	Equipment Operator Labor	0.21	hour
				Roundup PowerMax	4.00	Pint
				Treevix	1.00	floz
Leaf Sampling 1/20	July			Non-Machine Labor	0.01	hour
				LeafAnalysis1/20ac	0.05	Each
Fertilize- Potash	Sept	80 HP 4WD Tractor2		Equipment Operator Labor	0.12	hour
				FertSpreadr(FertCo	1.00	Acre
				Muriate of Potash	323.00	Lb
Fertilize- Urea	Sept	80 HP 4WD Tractor1		Equipment Operator Labor	0.12	hour
				Urea (46-0-0)	60.00	Lb N
				FertSpreadr(FertCo	1.00	Acre
Insects- Cleanup Spr	Oct	80 HP 4WD Tractor2	Orch.Sprayer 500G2	Equipment Operator Labor	0.60	hour
				Supreme Oil 440	5.00	Gal
				Lime Sulfur	2.50	Gal
Pickup Truck Use	Oct		Pickup Truck 1/2 T	Equipment Operator Labor	3.60	hours
ATV Use	Oct		ATV 4WD	Equipment Operator Labor	0.68	hour
Extra Labor- Cutting	Oct			Non-Machine Labor	1.00	hour
Pick Fruit	July	Forklift-FieldLift		Equipment Operator Labor	0.75	hour
				Forklift Rental	1.00	acre
	July			Non-Machine Labor	1.88	hours
	July	25 HP MFWD Tractor	Bin Trailer 1	Equipment Operator Labor	0.75	hour
				Tractor Rental (6)	1.00	acre
			Bin Trailer 2			
			Bin Trailer 3			
			Bin Trailer 4			
			Bin Trailer 5			
			Bin Trailer 6			
			Bin Trailer 7			
			Bin Trailer 8			
	July			Non-Machine Labor	7.50	hours
				Harvest - Hand	46.00	Bin
				HarvContractOH45%	46.00	Bin
Haul Fruit:Fresh Mar	July			Haul-Custom/Ton	12.00	Ton
Assessments	July			CPAB- Fresh Market	12.00	Ton
				CPAB- Processed, unrestricted gr	10.00	Ton
				CPAB- Processed, other special p	1.00	Ton