

## **SAMPLE COSTS TO PRODUCE PROCESSING TOMATOES**



### **SUB-SURFACE, DRIP IRRIGATED (SDI) IN THE SACRAMENTO VALLEY & NORTHERN DELTA 2023**

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University of California Agriculture and Natural Resources Cooperative Extension  
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**SAMPLE COSTS TO PRODUCE PROCESSING TOMATOES**  
Sub-Surface, Drip Irrigated (SDI)  
In the Sacramento Valley & northern Delta – 2023

**STUDY CONTENTS**

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INTRODUCTION	2
ASSUMPTIONS	3
Cultural Practices and Material Inputs	3
Harvest, Yield, Revenue and Assessments	5
Labor, Equipment and Operating Interest	6
Cash Overhead	7
Non-Cash Overhead	8
REFERENCES	11
Table 1. CULTURAL COSTS PER ACRE TO PRODUCE PROCESSING TOMATOES	12
Table 2. COSTS AND RETURNS PER ACRE TO PRODUCE PROCESSING TOMATOES	14
Table 3. MONTHLY CASH COSTS PER ACRE TO PRODUCE PROCESSING TOMATOES	16
Table 4. RANGING ANALYSIS	18
Table 5. WHOLE FARM EQUIPMENT, INVESTMENT AND BUSINESS OVERHEAD COSTS	19
Table 6. HOURLY EQUIPMENT COSTS	21
Table 7. OPERATIONS WITH EQUIPMENT AND MATERIALS	22

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**INTRODUCTION**

Sample costs to produce transplanted processing tomatoes in the Sacramento Valley and northern Delta are presented in this study. It is intended as a guide only, and can be used to make production decisions, estimate potential returns, prepare budgets and evaluate production loans. Practices described are based on production practices considered typical for the crop and area, but these same practices will not apply to every farming operation. The sample costs for labor, materials, equipment and custom services are based on June, 2023 figures. A blank column titled “Your Cost”, is provided in Tables 1 & 2 for your convenience.

For an explanation of calculations used, refer to the section titled Assumptions. For more information contact Brittney Goodrich, Department of Agricultural and Resource Economics, at [bkgoodrich@ucdavis.edu](mailto:bkgoodrich@ucdavis.edu). To discuss this study with a local Cooperative Extension farm advisor, contact [bjagerter@ucanr.edu](mailto:bjagerter@ucanr.edu) or [palazicki@ucanr.edu](mailto:palazicki@ucanr.edu). Sample Costs of Production Studies for many commodities are available at <https://coststudies.ucdavis.edu/en/current/>. Archived studies are also available on the website.

**Costs and Returns Study Program/Acknowledgements.** A cost and returns study is a compilation of specific agricultural crop data collected from the region the study is based. The authors thank the farmer cooperators, UC Cooperative Extension, and the 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 is an affirmative action/equal opportunity employer.*

## ASSUMPTIONS

Assumptions in Tables 1 to 7 pertain to sample costs to produce transplanted processing tomatoes under sub-surface drip irrigation (SDI), in the Sacramento Valley and northern Delta. Input prices and interest rates are based on June, 2023 values. Processing tomato cultural practices and material input costs will vary by grower and region, and can be significant. The practices and inputs used in the cost study serve as a guide only. The costs are shown on an annual, per acre basis.

**Farm.** The hypothetical field and row-crop farm consists of 3,500 non-contiguous acres of rented land. Tomatoes are transplanted on 1,000 acres, all sub-surface drip irrigated as three quarters of the local tomato acreage is estimated to be sub-surface drip irrigated. The rental rate for tomatoes is 12% of gross tomato revenue for this budget. Twenty-five hundred acres are planted to other rotational crops including alfalfa hay, field corn, safflower, sunflower, vine seed and/or wheat. The grower also owns various farm investments including a shop and an equipment yard. In this report, practices completed on less than 100% of the acres are denoted as a percentage of the total tomato crop acreage.

### Cultural Practices and Material Inputs

**Land Preparation.** In the fall, bed tillage equipment is used to maintain semi-permanent beds on 80% of the acreage (800 acres) with the drip tape in place. Furrows are chiseled to 15-inches and rolled. Subsequently, a 3-row Performer® shallowly chisels, tills and reshapes the beds while avoiding disturbance of the drip tape.

On 20% of the acres (200 acres), drip tape is removed after a five-year life expectancy and is included as a post-harvest cost. On these acres, in the fall (August through November) preceding tomato cropping, primary tillage operations are: stubble disc with heavy roller in the same pass; sub-soil to a 30-inch depth in two passes and roll in the same pass; medium-duty disc and ring roll in the same pass; smooth in two passes with a triplane; and finally, shape beds on five-foot centers with a six-bed lister. To maintain surface grade on some of the acres where the drip tape is replaced, one fifth of 20% (40 acres) is custom laser leveled each year ahead of the bulk of fall tillage. The drip tape is installed at 10 – 12” depth below the soil surface (1 tape/5’-centered bed, 5 beds/pass), with beds re-shaped in the same operation. Drip tape is reconnected after hand-digging to water supply hoses connected to underground PVC main lines. Drip lines at the terminal ends are trimmed and plugged with in-line valves.

**Transplanting.** Planting is spread over a 10-week period to meet contracted weekly delivery schedules at harvest. Seedlings are transplanted in double-lines per bed at 8,000 plants per acre. All of the 1,000 acres are custom planted with greenhouse-grown transplants. The grower supplies the seed to the greenhouse operation to grow the transplants. Additional seed (15% above the quantity for the desired number of transplants) is needed to compensate for imperfect germination and for non-useable, damaged seedlings.

**Fertilization.** In the fall, ahead of listing beds, soil amendment gypsum at 3 tons per acre is custom broadcast on 20% of the acres. After beds are listed, muriate of potash (0-0-62) is side dressed at 250 lbs. per acre on 40% of the acreage.

Prior to transplanting, liquid starter fertilizer at 8 lbs. of N per acre of 8-24-5 plus 6.5% zinc is banded with a tractor and implement. Nitrogen fertilizer, UAN-32 at 200 lbs. of N per acre, is injected at multiple intervals through the drip system over the growing season.

The assistant manager calibrates and injects the pesticides and fertilizers. Growers may apply additional micronutrients, biologicals and manures or plant cover crops on part of their acreage, but these practices are not used over all operations and the specifics of these vary dramatically. Therefore, the associated costs are not included.

**Irrigation.** Water costs are \$120 per acre-foot (or \$10 per acre-inch). The grower uses a combination of district canal water (\$65 per acre foot) and groundwater (\$150 per acre foot) pumped (1:2 canal to well) from a depth of less than 120 feet. The irrigation costs itemized and shown in Tables 1 and 3 are for pumping and water. Two half-ton pickup trucks used for irrigation are itemized separately. Two ATV's are also used in the irrigation operation. An annual laboratory analysis to determine nitrate availability and to maintain regulatory records is included in the costs.

Total applied water was calculated at 27.5 acre-inches (2.29 acre-feet). Sprinkler irrigation was used on 50% of the acres at 2 acre-inches (1" for the farm) as a single application to establish the stand after planting while 26 acre-inches are applied through the drip system to match crop evapotranspiration and to account for 85% irrigation system efficiency.

The drip system requires chemical flushing to retard calcium buildup and emitter clogging. For this study the operation is performed after harvest with N-pHURIC acid applied through the drip system with 0.5 acre-inch of water. One of the assistant managers performs this operation.

**Sustainable Groundwater Management Act, (SGMA).** This requires groundwater-dependent regions to halt overdraft and bring basins into balanced levels of pumping and recharge. Basin 5.021 of the Sacramento Valley is classified by SGMA as being located in a medium priority basin. For detailed information visit the following website. <https://water.ca.gov/programs/groundwater-management/sgma-groundwater-management>

**Pest Management.** The pesticides and rates mentioned in this cost study are listed in *UC Integrated Pest Management Guidelines, Tomatoes*. For information on other pesticides available, pest identification, monitoring, and management visit the UC IPM website at <https://ipm.ucanr.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.** To purchase pesticides for commercial use, a grower must be a Certified Private Applicator to obtain a Pesticide Identification number. For information and pesticide use permits, contact your local county agricultural commissioner's office.

**Pest Control Adviser/Certified Crop Advisor (PCA/CCA).** Written recommendations are required for many pesticides and are available from a licensed pest control adviser. In addition, the PCA/CCA or an independent consultant will monitor the field for agronomic pest problems including irrigation and nutrition which would include a nitrogen management plan. Growers may hire a private PCA/CCA or receive the service as part of a service agreement with an agricultural chemical and fertilizer company.

*Weeds.* Beginning in January, glyphosate (Roundup PowerMax) in combination with oxyfluorfen (Goal 2XL) is sprayed on the fallow beds to control emerged weeds and repeated later with glyphosate only. The applications are made with an ATV pulled sprayer with a 25-foot boom.

Before planting, the beds are cultivated to control weeds and to prepare a seedbed. As a preplant in the spring, trifluralin (Triflurex HFP) is tank-mixed with metolachlor (Dual II Magnum) as a broadcast and incorporated with a power mulcher on all acreage. Post-transplant, a band of rimsulfuron (Matrix SG) is sprayed to control weeds. Post-transplanting, a power incorporator is used to re-shape beds but without additional herbicides.

A combination of hand weeding and mechanical cultivation is also used for weed control. The crop is mechanically cultivated with a sled-mounted cultivator twice during the season, early and later. A contract labor crew hand removes weeds during the season.

**Broomrape.** Parasitic weeds, branched and Egyptian broomrape, are listed in the 150 non-photosynthetic plants of the genus *Orobanche*. CDFA classifies broomrape as a class A prohibited noxious weed.

Reported infested areas in a tomato crop become non-harvest areas within a field. While these regulations create complete losses in the infested area and the concern is high over further spread, this cost study does not account for broomrape expenses.

We are not including any costs associated with equipment sanitation within this current study, but we recognize that future UC cost studies should include costs associated with removing soil, debris and potential weed seeds and pathogen from equipment, including from personnel working in those fields. Precautionary sanitation steps are being taken in a number of fields beyond the known infestations to proactively prevent further spread.

*Insects.* The primary insect pests of seedlings are flea beetle, darkling ground beetle, and cutworm. Sevin bait is applied post transplanting at 15 pounds per acre for control of beetles and worms. Foliage and fruit feeders include tomato fruit worms, various armyworm species, russet mite, stink bug, and potato aphid. Warrior is applied to 20% acreage for aphid control. Confirm for worm control is applied to 100% of the acres.

*Diseases.* Diseases that are treated are primarily powdery mildew, bacterial speck, occasionally late blight, and black mold fruit rot. Kocide for bacterial speck is applied to 30% of the acres. Sulfur dust for russet mite and powdery mildew control is custom applied to 40% of the acres and an additional later application of sulfur dust for mildew on 40%. Bravo-Weatherstik is applied in June to 5% of the acres for late blight control and in September on 15% of the acres as a fruit protectant fungicide. Quadris Top is applied to 30% of the acres in late August for mildew. The application rates shown in Table 2 are adjusted to reflect the percentage of acreage treated.

*Vertebrate Pests.* Vertebrate pests include squirrels, rabbits and gophers. For gopher control, zinc phosphide is injected into gopher tunnels with a hand-held probe. Traps are also set up inside the gopher tunnels.

**Endangered Species.** It is important to know if your farm is located in an area where endangered or threatened species reside. PRESCRIBE is an online database application to allow pesticide applicators to learn if endangered species are in the vicinity of an application site, and the use limitations applicable to the pesticide product(s) they intend to use. The database is implemented by the California Department of Pesticide Regulation. <https://www.cdpr.ca.gov/docs/endspec/prescint.htm>

## Harvest, Yield, Revenue and Assessments

*Harvest.* The fruit is mechanically harvested by grower-owned-and-operated harvesters on 100% of the acreage. The grower uses a single machine for the 1,000 acres. Typically, growers of this scale also own an older, back-up harvester when harvesting all 1,000 acres. Harvest support equipment includes tractors, trailer dollies, vine diverter, generator-light machine, and fuel trailers. A crew of four manual sorters, a harvester driver, and two bulk-trailer tractor drivers are used per harvester. A seasonal average of two loads per hour at 25 tons per load are harvested with two (one day and one night) shifts of 10 hours each. Harvest efficiency includes maintenance and cleaning, scheduled daily breaks, and transportation between fields. The processor pays the transportation cost of the tomatoes from the field to the processing plant.

*Fruit Ripener.* Ethephon, as Ethrel, a fruit ripening agent, is applied with a ground sprayer three weeks before harvest to 5% of the acreage.

Costs for harvest operations are shown in Tables 1, 2, 3 and 4. Equipment is listed in Tables 5, 6 and 7. Growers may choose to own harvesting equipment, purchase either new or used or hire a custom harvester. Many factors are important in deciding which harvesting option a grower uses.

*Yield.* An average of annual county tomato yields combined across the Sacramento Valley including neighboring San Joaquin County over the past five years ranged from 35 to 65 tons per acre. The reporting

counties were Colusa, Sacramento, Solano, Sutter, Yolo and San Joaquin. Butte, Glenn and Tehama are the only Sacramento Valley counties that do not report their processing tomato production average. A yield of 46 tons per acre is used.

*Revenue.* Customarily, growers produce tomatoes under annual contracts with various tomato processors. A price of \$138 per ton is used, which reflects the statewide crop price for 2023.

*Ranging Analysis.* Table 4 has a range of return prices used for calculating net returns per acre with different yields. Processing tomatoes are contracted as a statewide core price with late-season premiums and some fruit quality incentives. For this analysis, selected yields ranged from 31 to 61 tons per acre and crop prices ranged from \$123 to \$153 per ton.

*Assessments.* Under a state marketing order, a mandatory assessment fee is collected and administered by the Processing Tomato Advisory Board (PTAB) to inspect and grade fruit. Fees vary between inspection stations. In this region, inspection fees in 2023 range from \$13.84 to \$14.78 per load with an average of \$14.35. Growers and processors share equally in the fee; growers pay \$7.17 per load.

Tomato growers are also assessed a fee for the Beet Curly Top Virus Control Program (BCTVCP) administered by the California Department of Food and Agriculture (CDFA). Growers in Yolo County (District III) are charged \$0.035 per ton. Additionally, several voluntary organizations assess member growers. California Tomato Growers Association (CTGA) represents growers' interest in negotiating contract prices with processors and for grower advocacy. CTGA membership charges are \$0.25 per ton. The California Tomato Research Institute (CTRI) funds projects for crop improvement. CTRI membership charges are \$0.12 per ton.

*Environmental Assessments.* Certain areas have local assessments to fund state regulatory programs: Irrigated Lands Regulatory Program (ILRP) and the Erosion and Sediment Control Plan (ESCP) of the State Water Resources Control Board. The landowner is responsible for maintaining these records and paying the annual fees.

**Risk.** The risks associated with crop production should not be underestimated. While this study makes an 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 agricultural production. Moreover, Table 4 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).

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

**Labor.** Basic wages are \$20.00 and \$18.00 per hour for machine operators and non-machine workers, respectively. Irrigation labor is paid \$18.00 per hour. Adding 47.29% for the employer's share of federal and state payroll taxes, insurance and other benefits raises the total labor costs to \$29.46 per hour for machine operators, \$26.51 per hour for non-machine laborers and \$26.51 per hour for irrigators. The overhead includes the employer's share of federal and California state payroll taxes, workers' compensation insurance for field crops and a percentage for other additional benefits. Workers' compensation insurance costs vary among growers. The cost is based on the average industry rate as of June, 2023. The labor for operations involving machinery is 20% higher than the field operation time to account for equipment set up, road travel, maintenance, and repair and downtime. Overtime hours are charged at 1.5 times the regular hourly wage.

**Field Supervisors Salary.** Supervisors' salaries include insurance, payroll taxes and benefits. Two-thirds of the supervisor's time is allocated to tomatoes at \$87.50 per acre.

**Assistant Managers Salary.** The assistant manager's salary includes insurance, payroll taxes and benefits. Two-thirds of the assistant's time is allocated to tomatoes at \$32 per acre. There are two assistant managers.

*Irrigation labor.* Labor is involved in drip system operation and maintenance. Charges include the manual labor required during the underground installation and the removal of the drip tape. Labor is also needed for sprinkler setup, operation and removal. The assistant manager is responsible for the chemical injections. This labor is charged under cash overhead.

Drip tape system maintenance costs are lowest in the first year and continually increase over the five-year life expectancy of the drip tape. The costs are for repairs, additional labor and time for flushing the system and adding chemicals to reduce drip emitter clogging.

**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, 2023 data from the Energy Information Administration are \$4.77 and \$4.76 per gallon, respectively. The cost includes a 9.0% sales tax on diesel and 2.25% sales tax on gasoline. Federal and state excise taxes on diesel (\$0.243/gal) and gasoline (\$0.183/gal) are refunded 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% 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 8.5% per year. A nominal interest rate is the typical market cost of borrowed funds. The rate will vary depending upon various factors, but this rate is considered a typical lending rate by a farm lending agency as of June, 2023.

## 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 include personal property taxes, liability, property insurance, office expense, supervisors' salaries, field sanitation, and investment repairs. Employee benefits, insurance, and payroll taxes are included in labor costs and not in overhead. Cash overhead costs are shown in Tables 1, 2, 3, 4 and 6.

**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. Property taxes are calculated as 1 percent of the average value of the property and not influenced by the Williamson Act or additional county taxes. Average value equals new cost, plus salvage value divided by 2 on a per acre basis.

*The Williamson Act.* California Land Conservation Act has helped preserve agricultural and open space lands since 1965. Local governments and landowners enter into voluntary contracts to restrict enrolled lands to agricultural and open space uses in exchange for property tax reductions. The impact of the Williamson Act on property taxes will vary from year to year and property to property.

<https://www.conservation.ca.gov/dlrp/wa>

**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% of the average value of the assets over their useful life.

*Liability Insurance.* A standard farm liability insurance policy fee of \$1,841 is included as a cost for the entire farm. This is the cost of the application fee and paperwork. Actual coverage will incur addition costs. A standard farm liability insurance policy will help cover the expenses for which the owner becomes legally obligated to pay for bodily injury claims on owned property and damages to another person's property as a result of a covered accident.

*Crop Insurance.* For this study, crop insurance is reported at 75% coverage and the charges are listed under cash overhead. Actual insurance coverage is by unit, not by acre. A significant number of owners purchase crop insurance in this region. This is available to processing tomato growers for unavoidable loss of production, damage or poor quality resulting from adverse weather conditions such as cool wet weather, freeze, frost, hail, excessive heat, rain, wind and damage from birds, drought, earthquakes and fire. Coverage levels are from 50 to 85 percent of the approved average yield as established by verifiable production records from the farm. <https://www.rma.usda.gov/Information-Tools/Summary-of-Business>

**Office Expense.** Office and business expenses are estimated to be \$210,000 for the entire farm or \$60 per acre. These expenses include office supplies, telephone/internet, bookkeeping, accounting, road maintenance, office and shop utilities, and miscellaneous administrative expenses.

**Land/Share Rent.** Rental arrangements will vary. For this study, 100% of the land is rented at 12% of gross revenue for the tomatoes. Land rent includes use of developed wells and access to surface-delivered water.

**Field Sanitation.** Sanitation services provide portable toilet and washing facilities for the farm during the crop season. The cost includes delivery and weekly service for six months. Costs will vary depending upon the crops and number of portable units required.

**Miscellaneous Costs.** Included expenses are employee safety training as well as pesticide use and regulatory continuing education training, additional materials and applications for unique fields or special conditions.

**Investment Repairs.** Annual repairs on investment or capital recovery items that require maintenance are calculated as 2% of the purchase price.

### **Non-Cash Overhead**

Non-cash overhead is calculated as the capital recovery cost for equipment and other farm investments. Although farm equipment used for processing tomatoes may be purchased new or used, this study shows the current purchase price for new equipment. The new purchase price is adjusted to 60% to reflect a mix of new and used equipment. Annual ownership costs (equipment and investments) are shown in Tables 1, 2, and 5. They represent the capital recovery cost for investments on an annual per acre basis.

**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 prices and salvage values (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 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 & 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 this operation. For other investments including irrigation systems, buildings, and miscellaneous equipment, the value at the end of its useful life is zero for this study. The salvage value for land is equal to the purchase price because land does not depreciate. Salvage value of sprinklers and aluminum irrigation pipe are an exception and calculated at 50% due to current market value. The purchase price and salvage value for certain equipment and investments are shown in Table 5.

*Capital Recovery Factor (CRF).* The CRF can be interpreted as the amount of equal (or uniform) payments to be received for (n) years such that the total present value of all these equal payments is equivalent to a payment of 1 dollar at present, if interest rate is (i) (Boehlje and Eidman).

CRF is the amortization factor for an asset and is calculated as;  $[i * (1 + i)^n] / [(1 + i)^n - 1]$  where \*(i) is the interest rate and (n) the number of years the asset is held.

**Interest Rate.** The interest rate of 7.0% is used to calculate capital recovery. The rate will vary depending upon size of loan and other lending agency conditions, but is a suggested rate by a farm lending agency in June, 2023.

**Irrigation Systems.** The land owner is responsible for the maintenance costs of the well. This study does not show these costs, as they should be captured by the share rent described above. Irrigation equipment owned by the grower consists of booster pumps, pipe main lines, hand- move sprinklers and various hand tools. Drip system equipment owned by the grower consists of filters, booster and injector pumps and drip tape installation and extraction implements. Grower costs include connections to the pump, drip tape installation, sub-main water supply lines and installation, pressure regulators and air vents. Multi-year rental agreements are needed to spread expenses over years.

An annual pump test is performed in January to monitor pumping level and efficiency (gallons/minute) at a cost of \$250 for each pump. The cost of the tests is spread across the entire acreage of the pumps' capacity. The annual water analysis is performed at the same time and the charges are combined.

*Drip Tape.* The drip tape is considered an investment and is amortized over the five-year life expectancy of the tape. There are no recycling revenue or disposal fees for the drip tape.

**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% to indicate a mix of new and used equipment. Annual ownership costs for equipment and other investments are shown in the Whole Farm Annual Equipment, Investment, and Business Overhead Costs, Table 5. 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.

*Pickups/ATVs.* The study assumes approximately 8,500 business-use miles per year for each of four pickups and is shown as a separate line item. The two ATVs are used for irrigation, transportation, weed control and monitoring the crop.

*Backhoe/Road Grader/Service Truck/Water Truck.* Each piece of equipment is listed separately under operations. This equipment is used for various tasks.

*Irrigation Booster Pumps/Pipe Trailers.* This equipment is owned by the grower and used for sprinkler irrigating the plants soon after transplanting or as a pre-plant irrigation.

*Flatbed Truck/Implement Carrier.* This miscellaneous equipment is listed under investments and is used throughout the year to move equipment and supplies.

*Buildings-Shop/Storage.* The shop and storage buildings are used to perform maintenance on equipment and storage for equipment and supplies for the entire farm.

*Global Positioning Systems, (GPS).* The receiving units are mounted so that they are removable and interchangeable between tractors.

*Generators/Lights/Shop Tools.* This includes shop tools and equipment, hand tools, and miscellaneous field tools. Generators and lights are for the staging/loading areas when harvesting at night.

*Fuel Tanks.* The farm has two fuel storage tanks. One 5,000-gallon diesel tank and one 500-gallon gasoline tank use gravity-feed. The tanks are setup horizontally on metal stands in a cement containment pad that meets federal, state, and county regulations. Additionally, three portable, 500-gallon diesel fuel trailers are used.

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

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UC COOPERATIVE EXTENSION  
 UC DAVIS AGRICULTURAL AND RESOURCE ECONOMICS  
**TABLE 1. CULTURAL COSTS PER ACRE TO PRODUCE PROCESSING TOMATOES (SDI)**  
 Sacramento Valley & northern Delta-2023

Operation	Equipment		Cash and Labor Costs per Acre				Total Cost	Your Cost
	Time (Hrs./Ac)	Labor Cost	Fuel	Lube & Repairs	Material Cost	Custom/Rent		
<b>Pre-Plant:</b>								
Custom: Laser level 4% Ac	0.00	0.00	0	0	0	8	8	
Chisel Furrows 80% Ac	0.18	6.49	15	5	0	0	27	
Condition Beds 80% Ac	0.10	3.66	9	3	0	0	15	
Stubble Disc & Roll 20% Ac	0.04	1.27	4	2	0	0	7	
Sub-Soil & Roll 20% Ac 2x	0.12	4.28	13	5	0	0	22	
Medium-Duty Disc & Roll 20% Ac	0.02	0.70	2	1	0	0	3	
Land Plane 20% Ac 2x	0.06	2.14	5	2	0	0	9	
Custom: Gypsum 20% Ac	0.00	0.00	0	0	0	46	46	
List Beds 6-Row 20% Ac	0.02	0.76	2	1	0	0	4	
Fertilize: (MOP) 40% Ac	0.13	4.47	6	2	116	0	129	
Insert Drip Tape/Shape Beds 5-Row 20% Ac	0.07	2.47	7	2	0	0	12	
Insert Drip Tape Labor	0.00	23.06	0	0	0	0	23	
Weeds: Pre-Plant Herbicides 2x	0.20	7.18	1	1	39	0	48	
<b>TOTAL PRE-PLANT COSTS</b>	<b>0.95</b>	<b>56.49</b>	<b>64</b>	<b>24</b>	<b>155</b>	<b>54</b>	<b>353</b>	
<b>Cultural:</b>								
Custom: Well Test/Water Analysis	0.00	0.00	0	0	0	4	4	
Open Beds: 5-Row Alloway	0.10	3.54	5	2	0	0	10	
Mulch Beds: Incorporate Herbicides	0.33	11.78	16	7	33	0	67	
Fertilize: Starter 8-24-5, 6.5% Zn	0.22	7.88	10	5	33	0	56	
Custom: Transplant Tomatoes	0.00	0.00	0	0	630	360	990	
Weeds: Post Transplant Herbicide Spray-Band	0.18	6.48	7	2	29	0	45	
Irrigate: Sprinklers 50% Ac	1.17	110.03	12	2	10	0	135	
Insects: Beetles/Worms	0.10	3.36	0	0	31	0	35	
Irrigate: Drip-Water & Labor Costs	0.00	238.27	0	0	260	0	498	
Weeds: Close Cultivate Sled	0.23	8.11	8	3	0	0	18	
Fertigation: UAN-32	0.00	0.00	0	0	200	0	200	
Weeds: Hand Weeding	0.00	0.00	0	0	0	230	230	
Bed Shape at Layby	0.23	8.01	11	5	0	0	23	
Weeds: Cultivation Late	0.21	7.59	7	2	0	0	17	
Disease: Bacterial Speck 30% Ac	0.06	2.24	3	1	5	0	11	
Insects: Aphids 20% Ac	0.02	0.71	1	0	0	0	2	
Disease: Late Blight 5% Ac	0.01	0.24	0	0	1	0	1	
Train/Trim Vines	0.22	7.78	7	2	0	0	17	
Custom: Disease/Insects: Mildew/Mites 40% Ac 2x	0.00	0.00	0	0	10	14	24	
Disease: Mildew 30% Ac	0.07	2.36	3	1	4	0	10	
Disease: Fruit Rot 15% Ac	0.01	0.35	0	0	2	0	2	
Insects: Worms	0.06	2.12	2	1	15	0	20	
Ripener: Ethephon	0.01	0.23	0	0	1	0	1	
1/2 Ton Pickup Truck (2)	1.00	35.35	6	4	0	0	46	
3/4 Ton Pickup Truck (2)	1.00	35.35	7	6	0	0	49	
ATV (2)	0.67	23.57	3	2	0	0	29	
Service Truck	0.50	17.68	17	4	0	0	39	
Water Truck	0.33	11.78	4	4	0	0	20	
Back Hoe	0.20	7.07	5	1	0	0	13	
Road Grader	0.17	5.89	5	1	0	0	12	
Vertebrate: Bait/Trapping	0.20	7.07	1	1	5	0	13	
<b>TOTAL CULTURAL COSTS</b>	<b>7.29</b>	<b>564.84</b>	<b>141</b>	<b>58</b>	<b>1,267</b>	<b>608</b>	<b>2,639</b>	
<b>Harvest:</b>								
Open Harvest Lanes 8% Ac	0.17	5.89	7	2	0	0	15	
Harvest: Self 100% Ac	0.92	198.88	121	104	0	0	423	
In Field Hauling (2)	1.84	65.05	87	26	0	0	177	
Share Rent 12.0%	0.00	0.00	0	0	762	0	762	
<b>TOTAL HARVEST COSTS</b>	<b>2.93</b>	<b>269.82</b>	<b>214</b>	<b>132</b>	<b>762</b>	<b>0</b>	<b>1,378</b>	

UC COOPERATIVE EXTENSION  
UC DAVIS AGRICULTURAL AND RESOURCE ECONOMICS  
**TABLE 1. CONTINUED**  
Sacramento Valley & northern Delta-2023

Operation	Equipment	Cash & Labor Costs Per Acre					Total Costs	Your Cost
	Time (Hrs./Ac)	Labor Costs	Fuel	Lube & Repairs	Material costs	Custom/Rent		
Post-Harvest:								
Irrigation-Drip Acid Flush	0.00	0.00	0	0	7	0	7	
Drip Tape Extraction 20% Ac	0.08	29.50	9	3	0	0	41	
<b>TOTAL POST-HARVEST COSTS</b>	<b>0.08</b>	<b>29.50</b>	<b>9</b>	<b>3</b>	<b>7</b>	<b>0</b>	<b>48</b>	
Assessment:								
PTAB CTGA CTRI CDFA-CTVP	0.00	0.00	0	0	32	0	32	
Interest on Operating Capital at 8.50%							133	
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>11.25</b>	<b>921</b>	<b>428</b>	<b>217</b>	<b>2,222</b>	<b>661</b>	<b>4,583</b>	
CASH OVERHEAD:								
Liability Insurance							1	
Office Expense							60	
Field Sanitation							3	
Field Supervisor							88	
Assistant Managers (2)							64	
Miscellaneous Costs							50	
GPS Annual Activation Fee							1	
Crop Insurance 75% Coverage							48	
Property Taxes							8	
Property Insurance							1	
Investment Repairs							20	
<b>TOTAL CASH OVERHEAD PER ACRE</b>							<b>343</b>	
<b>TOTAL CASH COSTS/ACRE</b>							<b>4,925</b>	
NON-CASH OVERHEAD:								
		Per Producing Acre	Annual Cost					
			Capital Recovery					
Shop Building		43	4				4	
Storage Building		16	1				1	
Fuel Tanks & Pumps		14	1				1	
Fuel Service Trailers: 500-Gallon (3)		15	2				2	
Shop Tools		7	1				1	
Generators & Light (2)		6	1				1	
Closed Mix System		2	0				0	
Sprinkler Pipe (250Ac)		113	9				9	
Main Pipe Line 10" 1/2 Mile		40	4				4	
Drip Irrigation System		320	27				27	
Drip Tape		355	86				86	
Implement Carrier		6	1				1	
Truck: Bobtail 5 <sup>th</sup> -Wheel		27	3				3	
125 HP Booster Pump (2)		26	2				2	
Equipment		1,493	181				181	
<b>TOTAL NON-CASH OVERHEAD COSTS</b>		<b>2,481</b>	<b>323</b>				<b>323</b>	
<b>TOTAL COSTS/ACRE</b>							<b>5,248</b>	

UC COOPERATIVE EXTENSION  
 UC DAVIS AGRICULTURAL AND RESOURCE ECONOMICS  
**TABLE 2. COSTS & RETURNS PER ACRE TO PRODUCE PROCESSING TOMATOES (SDI)**  
 Sacramento Valley & northern Delta-2023

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS REVENUE					
Tomatoes (SDI)	46	Ton	138.00	6,348	
OPERATING COSTS					
<b>Fertilizer:</b>					<b>349</b>
0-0-62 (MOP) Fines	100.00	Lb.	1.16	116	
8-24-5, 6.5% Zn	8.82	Lb. N	3.77	33	
UAN32	200.00	Lb. N	1.00	200	
<b>Custom:</b>					<b>431</b>
Laser Level	0.04	Acre	200.00	8	
Gypsum-Hauled Spread	0.60	Ton	76.00	46	
Annual Well Test/Water Analysis	1.00	Acre	4.00	4	
Transplanting in Field	1.00	Acre	360.00	360	
Custom Ground Application	0.80	Acre	16.95	14	
<b>Insecticide:</b>					<b>56</b>
Sevin 5 Bait	15.00	Lb.	2.04	31	
Warrior II	0.38	FLOz	0.75	0	
Dusting Sulfur 98%	20.00	Lb.	0.50	10	
Confirm	6.40	FLOz	2.33	15	
<b>Fungicide:</b>					<b>11</b>
Kocide DF	0.53	Lb.	8.90	5	
Bravo Weatherstik	0.40	Pint	5.25	2	
Quadris Top	2.64	FLOz	1.60	4	
<b>Herbicide:</b>					<b>100</b>
Roundup PowerMax	3.00	Pint	8.50	26	
Goal 2XL	1.50	Pint	8.75	13	
Triflurex HFP	2.00	Pint	5.25	11	
Dual II Magnum	1.60	Pint	13.75	22	
Matrix SG	0.25	Oz	11.00	22	
Charge SOC Surfactant	2.00	Pint	3.50	7	
<b>Vertebrate Pest Control:</b>					<b>5</b>
Zinc Phosphide	0.50	Lb.	1.95	1	
Gopher Trap	0.25	Each	15.00	4	
<b>Growth Regulator:</b>					<b>1</b>
Ethephon	0.20	Pint	3.75	1	
<b>Contract:</b>					<b>230</b>
Hand Weeding	1.00	Acre	230.00	230	
<b>Seed:</b>					<b>299</b>
Tomato Seed/Thousand Seeds	9.20	Thou	32.50	299	
<b>Transplant:</b>					<b>331</b>
Greenhouse Transplants/Thousand	9.20	Thou	36.00	331	
<b>Irrigation:</b>					<b>277</b>
Water SacVal	27.50	AcIn	10.00	275	
N-pHURIC Acid	1.51	Lb.	1.20	2	
<b>Assessment:</b>					<b>32</b>
PTAB	46.00	Ton	0.29	13	
CTGA	46.00	Ton	0.25	12	
CTRI	46.00	Ton	0.12	6	
CDFA-BCTV	46.00	Ton	0.04	2	
<b>Land Rent:</b>					<b>762</b>
Share Rent 12.0%	46.00	Ton	16.56	762	
<b>Labor:</b>					<b>921</b>
Equipment Operator	13.50	Hrs.	29.46	398	
Non-Machine	1.87	Hrs.	26.51	50	
Irrigation	6.98	Hrs.	26.51	185	
Overtime; Irrigation	3.44	Hrs.	35.51	122	
Harvest	4.40	Hrs.	26.51	117	
Overtime; Harvest	1.10	Hrs.	35.51	40	
Overtime; Harvest Equipment Operator	0.27	Hrs.	39.46	11	
<b>Machinery:</b>					<b>645</b>
Fuel-Gas	3.82	Gal	4.76	18	
Fuel-Diesel	85.93	Gal	4.77	410	
Lube				64	
Machinery Repair				152	
Interest on Operating Capital @ 8.50%				135	
<b>TOTAL OPERATING COSTS/ACRE</b>				<b>4,583</b>	
<b>TOTAL OPERATING COSTS/TON</b>				<b>100</b>	
<b>NET RETURNS ABOVE OPERATING COSTS</b>				<b>1,765</b>	

UC COOPERATIVE EXTENSION  
UC DAVIS AGRICULTURAL AND RESOURCE ECONOMICS  
**TABLE 2. CONTINUED**  
Sacramento Valley & northern Delta-2023

	Cost/Acre	Your Cost
<b>CASH OVERHEAD COSTS</b>		
Liability Insurance	1	
Office Expense	60	
Field Sanitation	3	
Field Supervisor	88	
Assistant Managers (2)	64	
Miscellaneous Costs	50	
GPS Annual Activation Fee	1	
Crop Insurance 75% Coverage	48	
Property Taxes	8	
Property Insurance	1	
Investment Repairs	20	
<b>TOTAL CASH OVERHEAD COSTS/ACRE</b>	<b>343</b>	
<b>TOTAL CASH OVERHEAD COSTS/TON</b>	<b>7</b>	
<b>TOTAL CASH COSTS/ACRE</b>	<b>4,925</b>	
<b>TOTAL CASH COSTS/TON</b>	<b>107</b>	
<b>NET RETURNS ABOVE CASH COSTS</b>	<b>1,423</b>	
<b>NON-CASH OVERHEAD COSTS (Capital Recovery)</b>		
Shop Building	4	
Storage Building	1	
Fuel Storage Tanks & Pumps (2)	1	
Fuel Service Trailers: 500-Gallon (3)	2	
Shop Tools	1	
Generators & Light (2)	1	
Closed Mix System	0	
Sprinkler Pipe	9	
Pipe Main Line 10" 1/2 Mile	4	
Drip Irrigation System	27	
Drip Tape	86	
Implement Carrier	1	
Truck: Bobtail 5 <sup>th</sup> - Wheel	3	
125 HP Booster Pumps (2)	2	
Equipment	181	
<b>TOTAL NON-CASH OVERHEAD COSTS/ACRE</b>	<b>323</b>	
<b>TOTAL NON-CASH OVERHEAD COSTS/TON</b>	<b>7</b>	
<b>TOTAL COST/ACRE</b>	<b>5,248</b>	
<b>TOTAL COST/TON</b>	<b>114</b>	
<b>NET RETURNS ABOVE TOTAL COST</b>	<b>1,100</b>	

UC COOPERATIVE EXTENSION  
UC DAVIS AGRICULTURAL AND RESOURCE ECONOMICS  
**TABLE 3. MONTHLY CASH COSTS PER ACRE TO PRODUCE PROCESSING TOMATOES (SDI)**  
Sacramento Valley & northern Delta-2023

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Total
<b>Pre-Plant:</b>													
Laser level 4 % Ac	8												8
Chisel Furrows 80% Ac	27												27
Condition Beds 80% Ac	16												16
Stubble Disc & Roll 20% Ac	7												7
Sub-Soil & Roll 20% Ac 2x	22												22
Medium-Duty Disc & Roll 20% Ac	3												3
Land Plane 20% Ac 2x	9												9
Gypsum 20% Ac	46												46
List Beds: 6-Row 20% Ac		4											4
Fertilize: (MOP) 40% Ac		129											129
Insert Drip Tape/Shape Beds 20% Ac		12											12
Insert Drip Tape: Labor		23											23
Weeds: Pre-Plant 2x				30		17							48
<b>TOTAL PRE-PLANT COSTS</b>	<b>138</b>	<b>168</b>		<b>30</b>		<b>17</b>							<b>353</b>
<b>Cultural:</b>													
Well Test/Water Analysis				4									4
Open Beds: 5-Row Alloway						10							10
Mulch Beds: Apply Herbicides						33		33					67
Fertilize: Starter 8-24-5, 6.5% Zn						29		27					56
Transplant Tomatoes							495	495					990
Weeds: Post Transplant Herbicide Spray-Band							22	22					45
Irrigate: Sprinklers 50% Ac							67	67					135
Insects: Beetles/Worms							35						35
Irrigate: Drip							85	107	93	124	88		498
Weeds: Close Cultivate							9	9					18
Fertigation: UAN32							50	50	50	50			200
Weeds: Hand Weeding								115	115				230
Bed Shape at Layby								12	12				23
Weeds: Cultivation Late								8	9				17
Disease: Bacterial Speck 30% Ac									11				11
Insects: Aphids 20% Ac									2				2
Disease: Late Blight 5% Ac									1				1
Train/Trim Vines										9	9		17
Disease/Insects: Mildew/Mites 40% Ac 2x										12	12		24
Disease: Mildew 30% Ac											10		10
Disease: Fruit Rot 15% Ac												2	2
Insects: Worms												20	20
Ripener: Ethephon												1	1
1/2 Ton Pickup Truck (2)	4	4	4	4	4	4	4	4	4	4	4	4	46
3/4 Ton Pickup Truck (2)	4	4	4	4	4	4	4	4	4	4	4	4	49
ATV (2)	2	2	2	2	2	2	2	2	2	2	2	2	29
Service Truck	3	3	3	3	3	3	3	3	3	3	3	3	39
Water Truck	2	2	2	2	2	2	2	2	2	2	2	2	20
Back Hoe	1	1	1	1	1	1	1	1	1	1	1	1	13
Road Grader	1	1	1	1	1	1	1	1	1	1	1	1	12
Vertebrate: Bait/Trapping	1	1	1	1	1	1	1	1	1	1	1	1	13
<b>TOTAL CULTURAL COSTS</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>22</b>	<b>18</b>	<b>89</b>	<b>784</b>	<b>966</b>	<b>312</b>	<b>213</b>	<b>137</b>	<b>42</b>	<b>2,639</b>



UC COOPERATIVE EXTENSION  
UC DAVIS AGRICULTURAL AND RESOURCE ECONOMICS  
**TABLE 3. CONTINUED**  
Sacramento Valley & northern Delta-2023

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Total
Harvest:													
Open Harvest Lanes 8% Ac												15	15
Grower: Machine & Labor 100% Ac												423	423
In Field Hauling (2)												178	178
Share Rent 12.0%												762	762
<b>TOTAL HARVEST COSTS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,378</b>	<b>1,378</b>
Post-Harvest:													
Irrigation: Drip Acid Flush												7	7
Drip Tape Extraction 20% Ac												41	41
<b>TOTAL POST-HARVEST COSTS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>48</b>	<b>48</b>
Assessment:													
PTAB CTGA CTRI CDFA-CTVP	3	3	3	3	3	3	3	3	3	3	3	3	32
<b>TOTAL ASSESSMENT COSTS</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>32</b>
Interest on Operating Capital @ 8.50%	1	2	3	3	3	4	9	16	19	20	21	32	133
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>160</b>	<b>191</b>	<b>24</b>	<b>58</b>	<b>24</b>	<b>113</b>	<b>796</b>	<b>986</b>	<b>333</b>	<b>236</b>	<b>161</b>	<b>1,502</b>	<b>4,583</b>
CASH OVERHEAD													
Liability Insurance												1	1
Office Expense	5	5	5	5	5	5	5	5	5	5	5	5	60
Field Sanitation	0	0	0	0	0	0	0	0	0	0	0	0	3
Field Supervisor	7	7	7	7	7	7	7	7	7	7	7	7	88
Assistant Managers (2)	5	5	5	5	5	5	5	5	5	5	5	5	64
Miscellaneous Costs												50	50
GPS Annual Activation Fee												1	1
Crop Insurance 75% Coverage												48	48
Property Taxes				4						4			8
Property Insurance				0						0			1
Investment Repairs	2	2	2	2	2	2	2	2	2	2	2	2	20
<b>TOTAL CASH OVERHEAD COSTS</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>24</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>24</b>	<b>20</b>	<b>120</b>	<b>343</b>
<b>TOTAL CASH COSTS/ACRE</b>	<b>179</b>	<b>211</b>	<b>43</b>	<b>82</b>	<b>44</b>	<b>132</b>	<b>815</b>	<b>1,006</b>	<b>352</b>	<b>256</b>	<b>180</b>	<b>1,622</b>	<b>4,925</b>

UC COOPERATIVE EXTENSION  
UC DAVIS AGRICULTURAL AND RESOURCE ECONOMICS  
**TABLE 4. RANGING ANALYSIS**  
Sacramento Valley & northern Delta-2023

COSTS PER ACRE AND PER TON AT VARYING YIELDS TO PRODUCE PROCESSING TOMATOES (SDI)

	YIELD (tons/acre)						
	31.00	36.00	41.00	46.00	51.00	56.00	61.00
<b>OPERATING COSTS/ACRE:</b>							
Preplant	353	353	353	353	353	353	353
Cultural	2,639	2,639	2,639	2,639	2,639	2,639	2,639
Harvest	1,075	1,176	1,277	1,378	1,479	1,580	1,680
Post-Harvest	48	48	48	48	48	48	48
Assessment	22	25	28	32	35	39	42
Interest on Operating Capital @ 8.50%	131	132	133	133	134	135	136
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>4,267</b>	<b>4,372</b>	<b>4,477</b>	<b>4,583</b>	<b>4,688</b>	<b>4,793</b>	<b>4,898</b>
<b>TOTAL OPERATING COSTS/TON</b>	<b>137.64</b>	<b>121.44</b>	<b>109.20</b>	<b>99.62</b>	<b>91.92</b>	<b>85.59</b>	<b>80.30</b>
<b>CASH OVERHEAD COSTS/ACRE</b>							
TOTAL CASH COSTS/ACRE	4,610	4,715	4,820	4,925	5,031	5,136	5,241
TOTAL CASH COSTS/TON	148.70	130.96	117.56	107.07	98.64	91.71	85.92
<b>NON-CASH OVERHEAD COSTS/ACRE</b>							
TOTAL COSTS/ACRE	4,932	5,037	5,143	5,248	5,353	5,459	5,564
TOTAL COSTS/TON	159.00	140.00	125.00	114.00	105.00	97.00	91.00

Net Return per Acre above Operating Costs for Processing Tomatoes (SDI)

PRICE (\$/ton)	YIELD (tons /acre)						
Tomatoes (SDI)	31.00	36.00	41.00	46.00	51.00	56.00	61.00
123.00	-454	56	566	1,075	1,585	2,095	2,605
128.00	-299	236	771	1,305	1,840	2,375	2,910
133.00	-144	416	976	1,535	2,095	2,655	3,215
138.00	11	596	1,181	1,765	2,350	2,935	3,520
143.00	166	776	1,386	1,995	2,605	3,215	3,825
148.00	321	956	1,591	2,225	2,860	3,495	4,130
153.00	476	1,136	1,796	2,455	3,115	3,775	4,435

Net Return per Acre above Cash Costs for Processing Tomatoes (SDI)

PRICE (\$/ton)	YIELD (tons /acre)						
Tomatoes (SDI)	31.00	36.00	41.00	46.00	51.00	56.00	61.00
123.00	-797	-287	223	733	1,242	1,752	2,262
128.00	-642	-107	428	963	1,497	2,032	2,567
133.00	-487	73	633	1,193	1,752	2,312	2,872
138.00	-332	253	838	1,423	2,007	2,592	3,177
143.00	-177	433	1,043	1,653	2,262	2,872	3,482
148.00	-22	613	1,248	1,883	2,517	3,152	3,787
153.00	133	793	1,453	2,113	2,772	3,432	4,092

Net Return per Acre above Total Costs for Processing Tomatoes (SDI)

PRICE (\$/ton)	YIELD (tons /acre)						
Tomatoes (SDI)	31.00	36.00	41.00	46.00	51.00	56.00	61.00
123.00	-1,119	-609	-100	410	920	1,429	1,939
128.00	-964	-429	105	640	1,175	1,709	2,244
133.00	-809	-249	310	870	1,430	1,989	2,549
138.00	-654	-69	515	1,100	1,685	2,269	2,854
143.00	-499	111	720	1,330	1,940	2,549	3,159
148.00	-344	291	925	1,560	2,195	2,829	3,464
153.00	-189	471	1,130	1,790	2,450	3,109	3,769

UC COOPERATIVE EXTENSION  
 UC DAVIS AGRICULTURAL AND RESOURCE ECONOMICS  
**TABLE 5. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS**  
 Sacramento Valley & northern Delta-2023

ANNUAL EQUIPMENT COSTS

Description	Price	Years Life	Salvage Value	Capital Recovery	Cash Overhead		Total
					Insurance	Taxes	
#1 Harvester-Tomato	622,000	12	86,151	73,495	251	3,541	77,287
#1 440 HP Rubber Track	559,000	14	118,291	58,673	240	3,386	62,300
#1 275 HP Rubber Track	407,000	15	79,236	41,533	173	2,431	44,137
#1 155 HP 4WD Tractor	257,000	15	50,033	26,226	109	1,535	27,870
#2 155 HP 4WD Tractor	257,000	15	50,033	26,226	109	1,535	27,870
#3 155 HP 4WD Tractor	257,000	15	50,033	26,226	109	1,535	27,870
#1 130 HP 4WD HC Tractor	152,470	15	29,683	15,559	65	911	16,535
#1 110 HP 4WD HC Tractor	129,100	15	25,133	13,174	55	771	14,000
#1 75 HP 4WD Tractor	97,500	15	18,982	9,950	41	582	10,573
Service Truck	95,000	15	18,495	9,694	40	567	10,302
Road Grader	85,000	25	2,405	7,256	31	437	7,724
#1 ¾-Ton Pickup	70,000	4	34,100	12,986	37	521	13,543
#2 ¾-Ton Pickup	70,000	4	34,100	12,986	37	521	13,543
#1 Stubble Disc 18'	66,000	5	21,499	12,358	31	437	12,827
#1 Medium-Duty Disc 26'	58,440	5	19,036	10,943	28	387	11,358
Water Truck	57,600	15	11,214	5,878	24	344	6,246
#1 Incorporator-Tunnels 15'	54,000	4	19,876	11,466	26	369	11,861
#1 Subsoiler 16' 9-Shank	51,000	5	16,613	9,550	24	338	9,912
Drip Tape Extractor	48,000	10	9,054	6,179	20	285	6,484
#1 Triplane- 6'	45,600	5	14,854	8,539	21	302	8,862
#1 Irrigation-Booster Pump	45,000	10	7,958	5,831	19	265	6,115
#2 Irrigation Booster Pump	45,000	10	7,958	5,831	19	265	6,115
#1 ½-Ton Pickup	45,000	4	21,922	8,348	24	335	8,706
#2 ½-Ton Pickup	45,000	4	21,922	8,348	24	335	8,706
#1 6-Row Lister 30'	40,320	5	13,134	7,550	19	267	7,836
#1 Cultivator-Performer 3-Row	39,960	10	7,067	5,178	17	235	5,430
#1 Incorporator 15'	39,960	5	13,016	7,482	19	265	7,766
#2 Incorporator 15'	39,960	5	13,016	7,482	19	265	7,766
#1 Ring Roller 26'	36,360	10	6,430	4,711	15	214	4,941
Cultivator Alloway 5-Row	26,400	10	4,669	3,421	11	155	3,587
Furrow Chisel-3 Row	25,050	5	8,160	4,691	12	166	4,868
Ring Roller-Heavy 18'	22,320	10	3,947	2,892	9	131	3,033
Back Hoe	20,400	10	3,608	2,643	9	120	2,772
Shaper-Drip Tape Inserter 5-Row	19,320	10	3,644	2,487	8	115	2,610
#1 Vine Diverter	17,650	5	5,749	3,305	8	117	3,430
Cultivator 3-Row	15,660	5	5,101	2,932	7	104	3,043
#1 Fertilizer Bar 15"	15,600	5	5,082	2,921	7	103	3,032
#2 Cultivator Sled 3-Row	13,440	5	4,378	2,517	6	89	2,612
#1 Cultivator Sled 3-Row	13,440	5	4,378	2,517	6	89	2,612
Rollup Sled-Drip Tape 15'	11,550	15	1,183	1,221	5	64	1,289
#1 ATV	10,500	5	4,706	1,743	5	76	1,824
#2 ATV	10,500	5	4,706	1,743	5	76	1,824
Dry Fertilizer Spreader 15'	10,200	6	2,940	1,729	5	66	1,799
#1 ATV Spray System 25'	7,275	5	2,370	1,362	3	48	1,414
#1 Spray Boom 25'	7,260	5	2,365	1,359	3	48	1,411
#2 Spray Boom 25'	7,260	5	2,365	1,359	3	48	1,411
#1 Vine Trainer/Trimmer	6,330	5	2,199	1,161	3	43	1,207
#1 Trailer Dolly	5,990	20	333	557	2	32	591
#2 Trailer Dolly	5,990	20	333	557	2	32	591
#2 Spray Boom 15'	4,350	5	1,417	815	2	29	845
#1 Spray Boom 15'	4,350	5	1,417	815	2	29	845
#1 Irrigation Pipe Trailer	4,200	15	430	444	2	23	469
#2 Irrigation Pipe Trailer	4,200	15	430	444	2	23	469
#3 Irrigation Pipe Trailer	4,200	15	430	444	2	23	469
#4 Irrigation Pipe Trailer	4,200	15	430	444	2	23	469
#1 300 Gallon Saddle Tanks	3,500	5	1,140	655	2	23	680
Bait Applicator	3,200	15	307	339	1	18	358
#1 200 Gallon Saddle Tank	3,200	5	1,042	599	2	21	622
#2 200 Gallon Saddle Tank	3,200	5	1,042	599	2	21	622
#3 200 Gallon Saddle Tank	3,200	5	1,042	599	2	21	622
<b>TOTAL</b>	<b>4,129,205</b>	<b>-</b>	<b>902,586</b>	<b>508,973</b>	<b>1,786</b>	<b>25,159</b>	<b>535,918</b>
60% of New Cost*	2,477,523	-	541,552	305,384	1,072	15,095	321,551

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

UC COOPERATIVE EXTENSION  
 UC DAVIS AGRICULTURAL AND RESOURCE ECONOMICS  
**TABLE 5. CONTINUED**  
 Sacramento Valley & northern Delta-2023

ANNUAL INVESTMENT COSTS

Description	Price	Years Life	Salvage Value	Capital Recovery	Cash Overhead			Total
					Insurance	Taxes	Repairs	
Drip Tape	354,600	5	0	86,484	126	1,773	7,092	95,475
Drip Irrigation System	320,000	25	22,400	27,105	122	1,712	6,400	35,339
Shop Building	150,000	25	0	12,872	53	750	3,000	16,675
Sprinkler Pipe (250Ac)	113,235	25	56,618	8,822	60	849	2,264	11,995
Truck Bobtail 5 <sup>th</sup> -Wheel	95,000	15	6,650	10,166	36	508	1,900	12,610
125 HP Booster Pumps (2)	90,000	15	34,300	8,517	44	622	1,800	10,982
Storage Building	57,000	25	0	4,891	20	285	1,140	6,336
Fuel/Service Trailers 500-Gallon (3)	54,000	15	3,780	5,778	21	289	1,080	7,168
Fuel Tanks & Pumps	47,478	20	3,323	4,401	18	254	950	5,623
Pipe Main Line 10" ½-Mile	40,061	20	2,804	3,713	15	214	801	4,744
Shop Tools	24,000	20	1,680	2,224	9	128	480	2,842
Generators & Light (2)	21,031	10	1,472	2,888	8	113	421	3,429
Implement Carrier	20,040	15	1,403	2,144	8	107	401	2,660
Closed Mix System	6,089	10	426	836	2	33	122	993
<b>TOTAL INVESTMENT</b>	<b>1,392,534</b>	<b>-</b>	<b>134,856</b>	<b>180,841</b>	<b>542</b>	<b>7,637</b>	<b>27,851</b>	<b>216,871</b>

ANNUAL BUSINESS OVERHEAD COSTS (1,000 acres)

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Field Supervisor	1,000	Acre	87.50	87,500
Assistant Managers (2)	1,000	Acre	64.00	64,000
Office Expense	1,000	Acre	60.00	60,000
Miscellaneous Costs	1,000	Acre	50.00	50,000
Crop Insurance 75%	1,000	Acre	48.10	48,100
Field Sanitation	1,000	Acre	2.85	2,850
GPS Annual Activation Fee	1,000	Acre	1.42	1,420
Liability Insurance	1,000	Acre	0.53	526

UC COOPERATIVE EXTENSION  
UC DAVIS AGRICULTURAL AND RESOURCE ECONOMICS  
**TABLE 6. HOURLY EQUIPMENT COSTS**  
Sacramento Valley & northern Delta-2023

Description	Process Tomatoes (SDI) Hours Used	Capital Recovery	Cash Overhead		Operating			Total Oper.	Total Costs/Hr.
			Insurance	Taxes	Lube & Repairs	Fuel			
#2 155HP 4WD Tractor	1057	14.76	0.06	0.86	12.61	42.91	55.52	71.20	
#1 Harvester-Tomato	1012	35.28	0.12	1.70	102.62	119.25	221.87	258.97	
#3 155 HP 4WD Tractor	936	14.76	0.06	0.86	12.61	42.91	55.52	71.20	
#1 155 HP 4WD Tractor	932	14.76	0.06	0.86	12.61	42.91	55.52	71.20	
#1 Trailer Dolly	847	0.39	0.00	0.02	0.20	0.00	0.20	0.62	
#2 Trailer Dolly	847	0.39	0.00	0.02	0.20	0.00	0.20	0.62	
#1 130 HP 4WD HC Tractor	803	8.76	0.04	0.51	9.06	35.99	45.05	54.35	
#1 110 HP 4WD HC Tractor	738	7.42	0.03	0.43	7.67	30.45	38.12	46.00	
#1 Irrigation-Booster Pump	642	3.50	0.01	0.16	1.56	9.54	11.10	14.77	
#2 Irrigation Booster Pump	642	3.50	0.01	0.16	1.56	9.54	11.10	14.77	
#1 Irrigation Pipe Trailer	583	0.40	0.00	0.02	0.12	0.00	0.12	0.54	
#2 Irrigation Pipe Trailer	583	0.40	0.00	0.02	0.12	0.00	0.12	0.54	
#3 Irrigation Pipe Trailer	583	0.40	0.00	0.02	0.12	0.00	0.12	0.54	
#4 Irrigation Pipe Trailer	583	0.40	0.00	0.02	0.12	0.00	0.12	0.54	
#1 ATV	536	0.52	0.00	0.02	2.67	4.76	7.43	7.98	
#2 ATV	533	0.52	0.00	0.02	2.67	4.76	7.43	7.98	
Service Truck	500	7.27	0.03	0.43	8.96	33.39	42.35	50.08	
#1 ½-Ton Pickup	500	10.02	0.03	0.40	4.24	5.95	10.19	20.64	
#1 ¾-Ton Pickup	500	15.58	0.04	0.62	6.28	7.14	13.42	29.67	
#2 ½-Ton Pickup	500	10.02	0.03	0.40	4.24	5.95	10.19	20.64	
#2 ¾-Ton Pickup	500	15.58	0.04	0.62	6.28	7.14	13.42	29.67	
#1 275 HP Rubber Track	404	23.51	0.10	1.38	21.14	76.13	97.27	122.25	
#1 440 HP Rubber Track	367	30.83	0.13	1.78	27.91	95.40	123.31	156.04	
Water Truck	333	4.41	0.02	0.26	12.64	11.93	24.56	29.25	
#1 200-Gallon Saddle Tank	278	1.20	0.00	0.04	0.87	0.00	0.87	2.11	
#1 Vine Diverter	275	4.96	0.01	0.18	3.09	0.00	3.09	8.24	
#2 200-Gallon Saddle Tank	258	1.20	0.00	0.04	0.87	0.00	0.87	2.11	
#2 Spray Boom 15'	258	1.63	0.00	0.06	1.18	0.00	1.18	2.87	
#1 Spray Boom 15'	258	1.63	0.00	0.06	1.18	0.00	1.18	2.87	
#2 Cultivator Sled 3-Row	229	3.77	0.01	0.13	2.96	0.00	2.96	6.88	
#1 Incorporator-Tunnels 15'	227	13.76	0.03	0.44	6.28	0.00	6.28	20.51	
Cultivator 3-Row	223	4.40	0.01	0.16	3.45	0.00	3.45	8.01	
#1 Fertilizer Bar 15"	223	7.30	0.02	0.26	6.10	0.00	6.10	13.68	
#1 300-Gallon Saddle Tanks	223	1.31	0.00	0.05	0.95	0.00	0.95	2.31	
#1 Vine Trainer/Trimmer	220	1.16	0.00	0.04	1.41	0.00	1.41	2.62	
#1 Cultivator Sled 3-Row	215	3.77	0.01	0.13	2.96	0.00	2.96	6.88	
#3 200-Gallon Saddle Tank	213	1.20	0.00	0.04	0.87	0.00	0.87	2.11	
#1 ATV Spray System 25'	203	2.72	0.01	0.10	1.98	0.00	1.98	4.81	
Back Hoe	200	5.29	0.02	0.24	6.67	23.85	30.52	36.06	
Furrow Chisel 3-Row	183	7.04	0.02	0.25	5.51	0.00	5.51	12.82	
Road Grader	183	10.88	0.05	0.66	5.61	28.62	34.23	45.82	
#1 Incorporator 15'	167	11.22	0.03	0.40	4.62	0.00	4.62	16.27	
#2 Incorporator 15'	167	11.22	0.03	0.40	4.62	0.00	4.62	16.27	
#1 Spray Boom 25'	166	2.72	0.01	0.10	1.97	0.00	1.97	4.80	
Ring Roller Heavy 18'	157	8.68	0.03	0.39	2.52	0.00	2.52	11.62	
Dry Fertilizer Spreader 15'	126	5.19	0.01	0.20	3.97	0.00	3.97	9.36	
#1 Subsoiler 16' 9-Shank	121	14.32	0.04	0.51	11.79	0.00	11.79	26.65	
#1 75 HP 4WD Tractor	105	5.63	0.02	0.33	3.04	4.77	7.81	13.80	
#1 Cultivator Performer 3-Row	104	15.53	0.05	0.71	8.06	0.00	8.06	24.35	
Cultivator Alloway 5-Row	100	10.26	0.03	0.47	5.33	0.00	5.33	16.09	
Bait Applicator	95	1.53	0.01	0.08	0.65	0.00	0.65	2.26	
Drip Tape Extractor	85	7.41	0.02	0.34	1.03	0.00	1.03	8.82	
Rollup Sled-Drip Tape 15'	85	1.47	0.01	0.08	0.28	0.00	0.28	1.83	
Shaper-Drip Tape Inserter 5-Row	70	2.98	0.01	0.14	0.42	0.00	0.42	3.55	
#2 Spray Boom 25'	67	2.72	0.01	0.10	1.97	0.00	1.97	4.80	
#1 Triplane 16'	61	8.54	0.02	0.30	7.08	0.00	7.08	15.94	
#1 Stubble Disc 18'	36	18.54	0.05	0.66	11.09	0.00	11.09	30.33	
#1 6-Row Lister 30'	22	11.32	0.03	0.40	8.39	0.00	8.39	20.14	
#1 Ring Roller 26'	20	14.13	0.05	0.64	4.11	0.00	4.11	18.93	
#1 Medium-Duty Disc 26'	20	16.41	0.04	0.58	9.82	0.00	9.82	26.86	

UC COOPERATIVE EXTENSION  
 UC DAVIS AGRICULTURAL AND RESOURCE ECONOMICS  
**TABLE 7. OPERATIONS WITH EQUIPMENT & MATERIALS**  
 Sacramento Valley & northern Delta-2023

Operation	Operation Month	Tractor	Implement	Labor Type/ Material	Rate/ Acre	Unit
Laser level 4 % Ac	Oct	Custom		Laser Level	0.04	Acre
Chisel Furrows 80% Ac	Oct	#1 275 HP Rub-Track	Furrow Chisel 3-Row	Equipment Operator Labor	0.22	Hour
Condition Beds 80% Ac	Oct	#1 275 HP Rub-Track	Cultivator/Performer 3-Row	Equipment Operator Labor	0.12	Hour
Stubble Disc & Roll 20%	Oct	#1 440 HP Rub-Track	#1 Stubble Disc 18' Ring Roller Heavy 18'	Equipment Operator Labor	0.04	Hour
Sub-Soil & Roll 20%	Oct	#1 440 HP Rub-Track	#1 Subsoiler 16' 9-Shank Ring Roller Heavy 18'	Equipment Operator Labor	0.15	Hour
Medium Duty Disc	Oct	#1 275 HP Rub-Track	#1 Medium-Duty Disc 26' #1 Ring Roller 26'	Equipment Operator Labor	0.02	Hour
Land Plane 20% Ac 2x	Oct	#1 275 HP Rub-Track	#1 Triplane-16'	Equipment Operator Labor	0.07	Hour
Gypsum 20% Ac	Oct	Custom		Gypsum-Hauled Spread	0.60	Ton
List Beds 6-Row 20%	Nov	#1 440 HP Rub-Track	#1 6-Row Lister 30'	Equipment Operator Labor	0.03	Hour
Fertilize-(MOP) 40%	Nov	#3 155 HP4WD Tractor	Dry Fertilizer Spreader 15'	Equipment Operator Labor 0-0-62 (MOP) Fines	0.15 100.00	Hour Lb.
Insert Drip Tape	Nov	#1 440 HP Rub-Track	5-Row Shaper/Drip Tape Inserter	Equipment Operator Labor	0.08	Hour
Insert Drip Tape-Labor	Nov			Non-Machine Labor	0.87	Hour
Weeds: Pre-Plant 2x	Jan		#1 ATV #1 ATV Spray System 25'	Equipment Operator Labor Roundup PowerMax Goal 2XL	0.12 1.50 1.50	Hour Pint Pint
	Mar		#1 ATV #1 ATV Spray System 25'	Equipment Operator Labor Roundup PowerMax	0.12 1.50	Hour Pint
Well Test/Water Analysis	Jan			Annual Well Test/Water Analysis	1.00	Acre
Open Beds	Mar	#3 155HP 4WD Tractor	Cultivator 5-Row Alloway	Equipment Operator Labor	0.12	Hour
Mulch Beds	Mar	#3 155HP 4WD Tractor	#2 200 Gal Saddle Tank #1 Incorporator 15' #1 Spray Boom-15'	Equipment Operator Labor Triflurex HFP Dual II Magnum	0.20 1.00 0.80	Hour Pint Pint
	May	#3 155HP 4WD Tractor	#1 200 Gal Saddle Tank #2 Incorporator 15' #2 Spray Boom-15'	Equipment Operator Labor Dual II Magnum Triflurex HFP	0.20 0.80 1.00	Hour Pint Pint
Fertilize: Starter	Mar	#3 155HP 4WD Tractor	#1 300 Gallon Saddle Tanks Cultivator 3-Row Fertilizer Bar 15"	Equipment Operator Labor 8-24-5, 6.5% Zn	0.14 4.41	Hour Gal
	May	#1 130 HP 4WD HC	300 Gallon Saddle Tanks Cultivator 3-Row Fertilizer Bar 15"	Equipment Operator Labor 8-24-5, 6.5% Zn	0.14 4.41	Hour Gal
Transplant Tomatoes	Apr	Custom		Transplanting in Field Tomato Seed/Thousand Seeds Greenhouse Transplants/Thousand	0.50 4.60 4.60	Acre Thou Thou
	May	Custom		Transplanting in Field Tomato Seed/Thousand Seeds Greenhouse Transplants/Thousand	0.50 4.60 4.60	Acre Thou Thou
Weeds: Spray	Apr	#1 130 HP 4WD HC	#1 200 Gal Saddle Tank #1 Spray Boom-15'	Equipment Operator Labor Matrix SG Charge SOC	0.11 1.00 1.00	Hour Oz Pint
	May	#1 130 HP 4WD HC	#2 200 Gal Saddle Tank #2 Spray Boom-15'	Equipment Operator Labor Matrix DF Charge SOC	0.11 1.00 1.00	Hour Oz Pint
Irrigate: Sprinklers	Apr		#1 Irrigation-Booster Pump #1 Irrigation Pipe Trailer #3 Irrigation Pipe Trailer	Equipment Operator Labor Water SacVal Irrigation Labor Overtime-Irrigation Labor	0.70 0.50 0.78 0.39	Hour AcIn Hour Hour
	May		#2 Irrigation Booster Pump #2 Irrigation Pipe Trailer #4 Irrigation Pipe Trailer	Equipment Operator Labor Water SacVal Irrigation Labor Overtime-Irrigation Labor	0.70 0.50 0.78 0.39	Hour AcIn Hour Hour

UC COOPERATIVE EXTENSION  
UC DAVIS AGRICULTURAL AND RESOURCE ECONOMICS  
**TABLE 7. CONTINUED**  
Sacramento Valley & northern Delta-2023

Operation	Operation		Implement	Labor Type/ Material	Rate/					
	Month	Tractor			Acres	Unit				
Insects: Beetles/Worms	Apr	#1 75HP 4WD Tractor	Bait Applicator	Equipment Operator Labor	0.11	Hour				
				Sevin 5 Bait	15.00	Lbs.				
Irrigate: Drip	Apr	#1 75HP 4WD Tractor	Bait Applicator	Irrigation Labor	0.78	Hour				
				Water SacVal	1.50	AcIn				
	Apr			Overtime-Irrigation Labor	0.20	Hour				
				Irrigation Labor	0.78	Hour				
	May			Water SacVal	1.50	AcIn				
				Overtime-Irrigation Labor	0.20	Hour				
	May			Irrigation Labor	0.78	Hour				
				Water SacVal	1.50	AcIn				
	June			Overtime-Irrigation Labor	0.20	Hour				
				Irrigation Labor	0.78	Hour				
	July			Water SacVal	5.50	AcIn				
				Overtime-Irrigation Labor	0.50	Hour				
	Aug			Irrigation Labor	0.78	Hour				
				Water SacVal	3.00	AcIn				
	Weeds: Cultivate			Apr	#1 110HP 4WD HC Tractor	Cultivator- #1 Sled 3 Row	Overtime-Irrigation Labor	0.40	Hour	
							Equipment Operator Labor	0.14	Hour	
May	Cultivator- #2 Sled 3 Row	0.14	Hour							
	Equipment Operator Labor	0.14	Hour							
Fertigation: UAN32	Apr	UAN32	50.00	Lb. N						
	May	UAN32	50.00	Lb. N						
	June	UAN32	50.00	Lb. N						
	July	UAN32	50.00	Lb. N						
Weeds: Hand Weeding	May	Hand Weeding	0.50	Acre						
	June	Hand Weeding	0.50	Acre						
Bed Shape at Layby	May	#2 155HP 4WD Tractor	#1 Incorporator-Tunnels 15'	Equipment Operator Labor			0.14	Hour		
	June	#3 155HP 4WD Tractor	#1 Incorporator-Tunnels 15'	Equipment Operator Labor			0.14	Hour		
Weeds: Cultivation Late	May	#1 110HP 4WD HC Trac	Cultivator- #1 Sled 3 Row	Equipment Operator Labor			0.12	hour		
	June	#1 110HP 4WD HC Trac	Cultivator- #2 Sled 3 Row	Equipment Operator Labor			0.14	hour		
Disease: Bacteria	June	#3 155HP 4WD Tractor	#3 200 Gal Saddle Tank	Equipment Operator Labor			0.08	Hour		
				#1 Spray Boom 25'			Kocide DF	0.53	Lb.	
Insects: Aphids	June			#1 130HP 4WD HC Tractor	#1 200 Gal Saddle Tank	Equipment Operator Labor	0.02	Hour		
						#1 Spray Boom 25'	Warrior II	0.38	FLOz	
Disease: Late Blight	June			#1 130HP 4WD HC Tractor	#3 200 Gal Saddle Tank	Equipment Operator Labor	0.01	Hour		
						#1 Spray Boom 25'	Bravo Weatherstik	0.10	Pint	
Train/Trim Vines	July			#1 110HP 4WD HC Tractor	#1 Vine Trimmer	Equipment Operator Labor	0.13	Hour		
	Aug			#1 110HP 4WD HC Tractor	#1 Vine Trimmer	Equipment Operator Labor	0.13	Hour		
Mildew/Mites 40% Ac	July			#1 130HP 4WD HC Tractor	#3 200 Gal Saddle Tank	Dusting Sulfur 98%	10.00	Lb.		
						Custom Ground Application	0.40	Acre		
	Aug					Dusting Sulfur 98%	10.00	Lb.		
						Custom Ground Application	0.40	Acre		
Disease: Mildew 30% Ac	Aug					#1 130HP 4WD HC Tractor	#3 200 Gal Saddle Tank	Equipment Operator Labor	0-08	Hour
								Quadris Top	2.64	FLOz
Disease: Fruit Rot 15% Ac	Sept					#1 130HP 4WD HC Tractor	#3 200 Gal Saddle Tank	Equipment Operator Labor	0.01	Hour
								#1 Spray Boom 25'	Bravo Weatherstik	0.30
Insects: Worms	Sept	#1 130HP 4WD HC Tractor	#3 200 Gal Saddle Tank			Equipment Operator Labor	0.07	Hour		
						#1 Spray Boom 25'	Confirm	6.40	FLOz	

UC COOPERATIVE EXTENSION  
UC DAVIS AGRICULTURAL AND RESOURCE ECONOMICS

**TABLE 7. CONTINUED**  
Sacramento Valley & northern Delta-2023

Operation	Operation Month	Tractor	Implement	Labor Type/ Material	Rate/ Acre	Unit	
Ripener: Ethephon	Sept	#1 110HP 4WD HC Tractor	#3 200 Gal Saddle Tank	Equipment Operator Labor	0.01	Hour	
			#1 Spray Boom 25'	Ethephon-Ethrel	0.20	Pint	
½-Ton Pickup Trucks	Sept	#1 110HP 4WD HC Tractor	#2 1/2 Ton Pickup	Equipment Operator Labor	0.60	Hour	
	Sept		#1 1/2 Ton Pickup	Equipment Operator Labor	0.60	Hour	
¾-Ton Pickup Trucks	Sept		#1 3/4 Ton Pickup	Equipment Operator Labor	0.60	Hour	
	Sept		#2 3/4 Ton Pickup	Equipment Operator Labor	0.60	Hour	
ATV (2)	Sept	#1 110HP 4WD HC Tractor	#1 ATV	Equipment Operator Labor	0.40	Hour	
	Sept		#2 ATV	Equipment Operator Labor	0.40	Hour	
Service Truck	Sept		Service Truck	Equipment Operator Labor	0.60	Hour	
Water Truck	Sept		Water Truck	Equipment Operator Labor	0.40	Hour	
Back Hoe	Sept	Back Hoe	Equipment Operator Labor	0.24	Hour		
Road Grader	Sept	Road Grader	Equipment Operator Labor	0.20	Hour		
Vertebrate: Gophers	Sept	#2 ATV		Equipment Operator Labor	0.24	Hour	
				Zinc Phosphide	0.50	Lb.	
				Gopher Trap	0.25	Each	
Open Harvest Lanes Harvest: Self 100% Ac	Sept	#1 130HP 4WD HC Tractor	#1 Vine Diverter	Equipment Operator Labor	0.20	Hour	
	Sept			#1 Harvester-Tomato	Equipment Operator Labor	1.10	Hour
	Sept				Non-Machine Labor	4.40	Hours
					Overtime Harvesting Labor	1.10	Hour
In Field Hauling (2)	Sept	#1 155HP 4WD Tractor	#1 Trailer Dolly	Overtime Equipment Operator	0.27	Hour	
				Equipment Operator Labor	1.10	Hour	
				Equipment Operator Labor	1.10	Hour	
				Equipment Operator Labor	1.10	Hour	
Irrigation: Drip Acid Flush	Sept	#2 155HP 4WD Tractor	#2 Trailer Dolly	N-pHURIC Acid	1.51	Lbs.	
				Water SacVal	0.50	AcIn	
Drip Tape Extraction	Sept	#1 440 HP Rubber-Track	Drip Tape Extractor	Equipment Operator Labor	0.10	Hour	
				Rollup Sled-Drip Tape 15'	Non-Machine Labor	1.00	Hour