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UC DAVIS DEPARTMENT OF AGRICULTURAL AND RESOURCE ECONOMICS

2018

**SAMPLE COSTS TO ESTABLISH
AN ORCHARD AND PRODUCE PRUNES**



**French Variety (Dried Plums)
In the Sacramento Valley**

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INTRODUCTION

Sample costs to establish a prune orchard and produce dried prunes, ‘Improved French’ variety, 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 2018 figures. A blank column titled “Your Cost”, is provided in Tables 2 and 3 to enter your estimated costs.

For an explanation of calculations used in the study refer to the section titled Assumptions. For more information, contact University of California Agriculture and Natural Resources, Agricultural Issues Center, Department of Agricultural and Resource Economics, at 530-752-4651 or destewart@ucdavis.edu. You can contact the local UCCE Advisor through the county offices: http://ucanr.edu/County_Offices/

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, California Dried Plum Board, 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 is an affirmative action/equal opportunity employer.*

ASSUMPTIONS

The assumptions refer to Tables 1 through 8 and pertain to sample costs to establish an orchard and produce prunes under drip irrigation in the Sacramento Valley. The cultural practices described represent production operations and materials considered typical for a well-managed farm in the region. Costs, materials, and practices will not apply to all farms. Timing of and types of cultural practices will vary among growers within the region and from season to season due to variables such as weather, soil, insect and disease pressure.

Farm. The hypothetical farm consists of 100 contiguous acres farmed by the owner/manager. Prunes are being established on 100 acres. Smaller non-contiguous parcels may have additional costs for travel time and equipment re-calibration. The land requirement of a cement slab is minimal for the well head, drip system filters and main-line hookups. There are no access roads or farmstead on this property. This orchard would be part of a larger farming operation with additional acreage planted to other tree crops.

Establishment Cultural Practices and Material Inputs

Land Preparation. The orchard is established on ground previously planted to another tree crop. Land preparation by a custom operator begins with tree removal of the previous orchard. The trees are knocked over and pushed to the edge of the field for chipping. Root ripping (2x), breaks the roots up and helps bring the roots to the soil surface. The field is chiseled (2x) to get the roots to the soil surface. Hand crews make three separate passes across the field, between operations to pick up the roots. Of the orchard removal costs, half is shown and the other 50 percent is charged to the previous crop.

The entire field is deep ripped in two opposite directions, at two to three foot depth to break up underlying compaction. The ground is disced three times and floated two to three times to level and smooth the surface. The tree rows are fumigated with Telone II. Berms on which the trees are planted are made by the grower.

Trees. The prune variety ‘Improved French’ on M40 rootstock, in pots are planted on a 17-foot X 14-foot spacing, 183 trees per acre. Orchard life is estimated to be 25 years.

Planting. The trees are planted in November. A planting contractor marks the tree sites, digs the holes, plants, paints and places tree wraps over the tree. Tree wraps are supplied by the nursery and the paint cost is included. In the second year, 2 percent or 4 trees per acre are replanted.

All pre-plant operations, planting, irrigation system installation and cultural practices for the first 15 months are shown in the first year of establishment costs.

Prune/Train. New trees are pruned back to main stem at planting. For the purposes of this publication, a November planting is considered a dormant planting (same timing as a Jan-March planting the next spring). Pruning and training begins in the first dormant season: January-March of the second year. In the fifth year branches are tied with twine to reduce limb breakage. Trees are treated with Topsin-M and Rally 40WSP after pruning to protect pruning wounds from *Cytospora* and/or *Botryosphaeria* canker infection (see disease section). Mechanical topping begins in the sixth year. Prunings are placed in the row middles and chopped using a heavy flail mower.

Fertilizer. Nitrogen (N) and potassium (K), the major nutrients required for proper tree growth and yield, are applied through the irrigation system. Nitrogen (UAN 32) is applied beginning in the first year. It is applied three times in April, May and June. Nitrogen should be applied during the middle third of the irrigation set to avoid nitrate leaching. Annual rates of actual N per acre, assuming good crop set, are shown in Table A. Starting in the fourth year, sulfate of potash (SOP) applications are injected in equal amounts through the drip system, from April through June for a total of 300 pounds of material per acre per year. Crop load determines tree N and K demand, and so should be considered before applying fertilizers.

Leaf Sampling. Beginning in year three, leaf samples are collected in July at one sample per 40 acres. The samples are collected by a pest control adviser (PCA) and the costs shown are for the lab analysis.

Irrigation System. The orchard is irrigated with a pressurized, above ground drip system. Main lines and lateral lines are trenched/installed before planting after the berms are made. The drip lines are laid out and hooked up at the time of planting. The costs for the system including labor for installation is included in the non-cash overhead section.

Water Costs. Water charges will vary depending on the irrigation district, power source, well characteristics, and irrigation setup. Water is pumped from a well assuming a cost of \$100 per acre-foot (\$8.33/acre inch). Applied water for each year is estimated in Table B. Water costs are expected to rise as new regulations on groundwater are implemented in areas with long-term ground water overdraft.

Chemical Buildup/Acid Flush. The drip system requires chemical flushing to retard chemical buildup and emitter clogging. The flushing is performed after harvest with N-pHuric acid applied through the drip system with 0.10 acre-inches of water.

Well Test/Water Analysis. An annual well test is performed during the winter to monitor pumping level and efficiency (gallons/minute). A water analysis should be done annually to determine nitrate availability and to maintain regulatory records. A water sample is taken and analyzed for nitrogen and other minerals. Costs for these tests are allocated over the entire acreage the pump can service.

Pest Management. The pesticides and rates mentioned are listed in UC Integrated Pest Management Guidelines, Prunes. For information on other pesticides available, pest identification, monitoring, and management visit the UC IPM website at ipm.ucanr.edu. For information and pesticide use permits, contact the local county agricultural commissioner's office.

Pest Control Adviser/Certified Crop Advisor (PCA/CCA). An individual who is licensed as a PCA and/or a CCA may monitor the orchard for pests and disease and collect samples for nutrient analyses. A CCA emphasizes nutrient, soil, water and crop management issues. If pest management advice is provided by a PCA, that individual is required to provide the grower written recommendations for pesticides that he/she advises a grower to use. In this region, a written recommendation by a CCA for applying fertilizers is currently not required. An independent PCA, who is not associated with a retail supplier of agricultural chemicals, is hired by the grower to monitor the orchard for disease and insect pests weekly for nine months. The annual per acre fee for monitoring the orchard is less during the establishment years.

Application Methods. Pesticide and fertilizer applications are made by either chemigation (pesticides and/or fertilizers applied through the irrigation water), by ATV mounted ground or spot sprayer or foliar-broadcast by tractor pulled air-blast sprayer. Check individual pesticide labels for compatibility, mixing and usage.

Weeds. Roundup is applied to tree rows after planting. In the first year, Prowl H2O, Roundup and Rely 280 are

applied in November. Gramoxone is applied twice per season to control broadleaf weeds during the summer of the first year. Beginning in the second year, Prowl H2O, Goal XL, Roundup and Rely 280 are applied as a dormant strip spray. Roundup plus Shark EW is applied in May or as necessary as a spot or summer strip spray. Vegetation in the row middles is managed by mowing five times - one time per month from April through August.

NOTE: Keep herbicide spray off green bark of young trees by use of nursery wraps or grow tubes.

Insects/Mites. Aphids, peach twig borer (PTB), and spider mites are the primary insects considered. PTB is treated in May of the first and second years with Intrepid 2F. Aphids and mites are treated as needed.

Beginning in the fourth year, the pest management program varies in response to pest pressure (Table D). Rotation of materials and selection of least toxic pesticides is encouraged. Supreme 440 oil plus Asana are applied as a dormant application in January to control aphids, low-moderate levels of scale, European red and brown almond mites, and PTB. Alternatively, Asana (alone) is applied in November as a pre-dormant spray to control aphids the following year. Dipel is added to the two March bloom disease sprays for PTB control. Spider mites may occur in any year, but not necessarily every year. An in-season (June) miticide spray of Agri-Mek (abamectin) is applied every-other year to represent the occasional need to control spider mites. For operations or materials not applied every year, a percentage of that cost is charged each year.

Diseases. Beginning in the second year, Topsin M and Rally 40WSP are applied to protect pruning wounds from Cytospora and/or Botryosphaeria canker infection. Russet scab is not a disease, but a physiological condition affecting the fruit skin. Application of certain fungicides at full bloom can reduce russet scab, so scab management practices and costs are included with diseases. Treatments begin in the fourth year. Bloom sprays, one with Vanguard at green-tip in early March and one with Bravo and Tilt approximately 10 days later at full bloom are applied to control blossom brown rot and reduce the incidence of russet scab. Wettable or spray sulfur is applied in May for rust control ahead of forecast rain. Rain at harvest can occur occasionally but not every year, so Luna Experience with an oil spray is included once every five years to control fruit brown rot.

Vertebrate Pests. During the first three establishment years, gophers are managed in the spring (March) with the use of poison bait placed underground using a mechanical bait applicator. It is assumed that the gopher population is under control by the end of the third year and only spot treatments are necessary. Beginning in the fourth year, squirrels are baited from May through October using anti-coagulants in bait stations on the field perimeter.

Endangered Species. It is important to know if your orchard is located in an area where endangered species reside. Trapping and killing endangered species can result in fines. Contact your County Agricultural Commissioner or visit this website for additional information.

<https://ecos.fws.gov/ecp0/reports/species-listed-by-state-report?state=CA>

Pollination. Bees are essential for setting a marketable crop. Beginning in the fourth establishment year, first harvest year, one hive per acre is placed in the orchard during bloom.

Bees: Bees are sensitive to pesticides and timing of applications must coordinate with bee pollinating activity. **See the individual pesticide labels, environmental hazards section, for these requirements in the following publication:** Oregon State University, “How to Reduce Bee Poisonings from Pesticides”:
<https://catalog.extension.oregonstate.edu/pnw591>

Harvest. Prunes begin economic production in the fourth year and reach full production in the seventh year. The crop is harvested and hauled by a custom operator. Custom harvest operations are charged on a fresh or green

ton basis. Dehydration reduces the weight of fresh prunes by approximately 3:1. This analysis assumes a 3:1 dry ratio and the grower pays the drying costs.

Yields and Revenue. See Harvest/Yields/Revenue in Production section. Typical yields from the fourth year of orchard establishment to maturity are shown in Table C.

Table A.	Applied N	Table B.	Applied Water	Table C.	Annual Yields (tons/ac)	
Year	Lbs./Ac	Year	AcIn/Yr.	Year	*Green	Dry
1	10	1	9	4	2.40	0.80
2	25	2	18	5	4.00	1.33
3	40	3	24	6	8.00	2.67
4	75	4+	30	7+	12.00	4.00
5	100			*3 tons green = 1 ton dry		
6	110					
7+	120					

Production Cultural Practices and Material Inputs

Pruning. Trees are hand pruned every other year and tipped mechanically (topping) in alternate years. These operations are performed during the winter months, (November - early March). Mechanical pruning is done in the early fall because machines are heavy and cannot operate on wet soils. One-half of this cost is charged to the orchard each year. Prunings are placed in the row middles and chopped using a heavy flail mower.

Irrigation. The orchard is irrigated an average of twice weekly using drip irrigation from April through September. A total of 30 acre inches are applied annually. Irrigation costs are based on grower pumping costs and estimated labor. Water costs will vary depending on the irrigation district, power source, well characteristics, and irrigation setup. No assumption is made regarding effective rainfall.

Fertilizer. Nitrogen (N) as (UAN 32) is injected through the drip irrigation system in equal amounts, three times between April and June for a seasonal total of 150 pounds of N per acre. Adjustments for nitrogen contributions from groundwater should be accounted for in the season total. Potassium levels are maintained with sulfate of potash (SOP) applications injected in equal amounts through the drip system, also from April through June/July for a total of 300 pounds of material per acre per year.

Fruit Thinning. In some years, trees may over-crop and mechanical thinning is necessary. It is assumed that over the life of the orchard, thinning will be needed every other year. Therefore, one half of the fruit thinning cost is charged to the orchard each year.

Prop Boards. Planks of wood are used to hold up branches with heavy loads of fruit. The planks are usually 1" x 6", five to six feet long. If the trees are thinned properly, these boards are not needed. No costs are shown.

Pest Management. Pesticides and rates suggested are listed in *UC Integrated Pest Management Guidelines, Prunes*. Additional information on other pesticides, pest identification, monitoring, and management can be found at the UC IPM website ipm.ucanr.edu. Written recommendations are required for many pesticide applications and are made by licensed PCAs. For information and pesticide use permits, contact the local county agricultural commissioner's office. Pesticides mentioned in this study are used to calculate rates and costs. Although the pesticides mentioned are commonly used by growers, many other pesticides are available. Adjuvants or surfactants may be recommended for use with some pesticides, but the costs are not included.

Weeds. Prowl H2O, Goal 2XL, Roundup and Rely 280 are applied in November as a dormant strip spray. Roundup plus Shark EW is applied as a summer strip or spot treatment in May. Vegetation in the row middles is managed by mowing five times, one time per month from April through August.

Insects/Mites. Aphids, peach twig borer (PTB), scale and spider mites are the primary insects considered. (Mites are not insects but are included in this section). Orchards should be monitored weekly and pests treated accordingly when levels exceed thresholds per UC IPM website. Supreme Oil and Asana are applied as a dormant application in January to control aphids, low levels of scale, European red and brown almond mites and PTB in year 1. In alternate years, Asana is applied as a pre-dormant spray in November for aphid control the following year and Dipel is added to the two March bloom disease sprays for PTB control. Spider mites may occur in any year, but not necessarily every year; therefore in this study, an in-season miticide spray of Agri-Mek (abamectin) in June is applied every-other year to account for the occasional need to control spider mites. Applications not made every year are shown as a percentage of the annual costs and included each year.

Diseases. Topsin M and Rally 40WSP are applied to protect pruning wounds from Cytospora and/or Botryosphaeria canker infection. Bloom sprays, one with Vanguard and Topsin at green tip in early March and a second with Bravo and Tilt approximately 10 days later at full bloom, control blossom brown rot and reduce russet scab. Wettable or spray sulfur is applied in May in wet springs for rust control, so listed as every other year in Table D. Rain at harvest will occur occasionally, so Luna Experience plus oil spray is included once every five years for possible fruit brown rot infections. One fifth of the cost is included each year.

Table D. Alternating Disease/Insect Spray Program

Month	Mature Year 1		Mature Year 2	
	Pest	Material	Pest	Material
January	Aphids, PTB, Mites, Scale*	Oil**+Asana**	-	-
January	Cytospora, BOT	Topsin+Rally‡	Cytospora, BOT	Topsin+Rally‡
Early-March	Blossom brown rot	Vanguard	Blossom brown rot, PTB	Vanguard+Dipel
Mid-March	Blossom brown rot, Scab	Bravo+Tilt	Blossom brown rot, Scab, PTB	Bravo+Orbit+Dipel
May	Rust	Sulfur	-	-
June	Spider mites	Agri-Mek**	-	-
August	Fruit brown rot	Luna E*** + Oil	-	-
November	-	-	Aphid	Asana*

*European red mites and brown almond mites

**Oil, Asana + Agri-Mek + oil = one time per two years

‡Topsin + Rally = every year following pruning or hedging

***Luna Experience + oil = one time per five years

Vertebrate Pests. Gophers are assumed to be well managed in the mature orchard and March bait treatments are only made as necessary. Squirrels are managed using anti-coagulant bait stations on the field perimeter and the stations are maintained during May, June, September and October.

Pollination. Bees are considered essential for setting a marketable crop. One hive per acre is rented during bloom for the mature orchard. Hives are placed together in an area where they can pollinate multiple acres of trees without movement and are workable by the bee keeper.

Harvest/Yields/Revenue

Harvest. The crop is harvested and hauled by custom operators. Custom harvest operations are charged on a fresh or green ton basis. The custom harvester shakes, catches and dumps fruit into bins which are left in

the field. The bins are picked up by self-propelled bin carriers that deliver fruit to the staging area where bins are fork lifted onto flatbed trucks and driven to dehydrators. The custom operator furnishes the forklift. If fruit size is excessively small, bar sizing on the harvester is available for an additional cost. Sizing is assumed to be needed every year and the cost will vary depending on how much it slows down the harvesting operation. The grower pays the hauling and drying costs.

Yields/Drying. Dehydration reduces the weight of fresh prunes by approximately 3:1 (dry ratio). Annual yields for prunes are measured in dry tons per acre. This high density cost study assumes production over the life of the orchard to be four dry tons per acre.

Revenue. A return of \$1,800 is based on grower information and annual crop reports. The estimated return also provides a basis for a range of yields and prices shown in Table 5. Returns are based on prune size with large size prunes receiving a higher price than small prunes.

Ranging Analysis. Table 5 shows a range of yields, 2.5 – 5.5 tons per acre over a range of prices, \$1,500 – \$2,100 per ton. Dried fruit producers target yields and prices such that in general, lower yields tend to be associated with higher prices. Therefore, the ranging analysis does not show the cases of very high yields with very high return prices or very low yields with very low return prices.

Assessments. Under a state marketing order, the California Prune Board (California Dried Plum Board) <http://Californiadriedplums.org>, collects mandatory assessment fees. This assessment is charged to the grower to fund prune marketing, advertising, and research programs administered by the California Prune Board. The portion of the assessment paid by the grower is \$35 per dry ton.

Pickup/4WD All-Terrain Vehicle, (ATV). The study assumes business use of one-hour per acre per year for the pickup. The (ATV) is used for weed spraying, vertebrate pest control and is included in those costs. Additional (ATV) uses for checking the orchard, monitoring diseases and the irrigation system are shown as a line item. The travel is estimated and not taken from any specific data.

Labor, Equipment and Interest

Labor. Hourly wages for workers are \$14.00 for machine operators and \$12.00 per hour non-machine labor. Adding 48.33 percent for the employer's share of federal and state payroll taxes, workers compensation insurance, for fruit crops and other possible benefits gives the labor rates shown of \$20.76 and \$17.79 per hour for machine labor and non-machine labor, respectively. Workers' compensation costs will vary among growers. The cost is based upon the average industry final rate as of January, 2018. Labor for operations involving machinery are 20 percent higher than the actual operation time given to account for the extra labor involved in equipment set up, moving, maintenance, work breaks, and field repair. Labor cost are expected to rise with reduced labor availability, increases in minimum wage rates and new overtime rules to be implemented starting in 2018.

Supervisor/Management Salaries. Management salaries are not included as a cash cost. Any returns above total costs are considered returns on investment or management.

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. Prices for on-farm delivery of diesel and gasoline are \$2.92 and \$3.46 per gallon, respectively. The cost includes a 13.0 percent local sales tax on diesel fuel and 10.17 percent sales tax on gasoline. Gasoline also includes federal and state excise tax, which are refundable for on-farm use

when filing your income tax.

Fuel/Lube/Repair. The fuel, lube, and repair cost per acre for each operation in Table 2 is determined by multiplying the total hourly operating cost in Table 7 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 5.0 percent per year. A nominal interest rate is the typical market cost of borrowed funds. The interest cost of post-harvest operations is discounted back to the last harvest month using a negative interest charge. The rate will vary depending upon various factors, but the rate in this study is considered a typical lending rate by a farm lending agency as of January 2018.

Risk. The risks associated with crop production should not be minimized. 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 tree fruit production. Because of so many potential risk factors, effective risk management must combine specific tactics in a detailed manner, in various combinations for a sustainable operation. Moreover, Table 5 of this study reflects a ranging analysis of returns based on various assumptions which is therefore hypothetical in nature. It is important to realize that actual results may differ from the returns contained in this study. Any returns above total costs are considered returns on risk and investment to management (or owners).

Cash Overhead

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

Property Taxes. Counties charge a base property tax rate of 1 percent on the assessed value of the property. In some counties special assessment districts exist and charge additional taxes on property including equipment, buildings, and improvements. County taxes are calculated as 1 percent of the average value of the property. Average value equals new cost plus salvage value divided by 2 on a per acre basis.

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 0.846 percent of the average value of the assets over their useful life.

Liability Insurance. A standard farm liability insurance policy of \$653 is included as a cost for the entire farm. A standard farm liability insurance policy will help cover the expenses for which the grower 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. Common liability expenses covered under a policy include attorney fees and court costs, medical expenses for people injured on this farm, or injury or damage to another's property.

Crop Insurance. A significant number of growers purchase crop insurance in this region. Due to variability in coverages, none is purchased. This is available to dried plum growers for unavoidable loss of production, damage or poor quality resulting from adverse weather conditions such as excessive heat, cool wet weather, freeze, frost, hail, 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 farm. Actual insurance coverage is by unit, not by acre. <http://www.rma.usda.gov/policies/2017policy.html>.

Office Expense. Office and business expenses are estimated at \$100 per acre. These expenses include office supplies, telephones/internet, bookkeeping, accounting, office utilities and miscellaneous administrative costs.

Sanitation Services. Sanitation services provide single portable toilets with wash basins for 5 months. The cost includes delivery and weekly cleaning service. The number of sanitation facilities will vary depending upon local regulations and size of labor force. In many cases labor contractors furnish the sanitation facilities for their crews and it is included in the contractor's labor overhead.

Non-Cash Overhead

Non-cash overhead, shown on an annual per acre basis is calculated as the capital recovery cost for equipment and other farm investments.

Capital Recovery Costs. Capital recovery cost is the annual depreciation and interest costs for a capital investment. It is the amount of money required each year to recover the difference between the purchase prices 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 (e.g., 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 this operation. For other investments including irrigation systems, buildings, and miscellaneous equipment, the value at the end of its useful life is zero. The salvage value for land is the purchase price because land does not depreciate. The purchase price and salvage value for equipment and investments are shown in Table 6.

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

Interest Rate. An interest rate of 5.5 percent is used to calculate capital recovery. The rate will vary depending upon loan amount and other lending agency conditions, but is the basic suggested rate by a farm lending agency as of January 2018.

Building. The 2,500 sqft metal shop building is on a cement slab with an attached pole barn that is used for equipment storage. The shop is located at another site and no charges are shown.

Irrigation System. The estimated costs are based on one 75 horsepower electric pump lifting 30 acre-inches from a water level depth of 120 feet. The pump and 300-foot deep well already existed on the site. The 45 horsepower booster pump is connected to and used for pressurizing the drip system. The cost of the irrigation system is for the filtration/fertilizer injection station, connectors, main lines, lateral lines and drip lines. The labor to install the system is included in these costs. The life of the irrigation system is estimated to be 25 years.

Fuel Tanks. Two fuel tanks, one for diesel and one for gasoline are placed on stands in cement containment areas that meet Federal, State, and local regulations.

Shop/Field Tools. Includes shop tools/equipment, hand tools and field tools such as pruning equipment. The cost is estimated and not based on any specific inventory.

Land. Prunes are grown on class I, II and III soils. Crop or bare land values of class I & II soils range from \$10,000 to \$30,000 per acre. The orchard site is assumed to be on previously farmed orchard ground. The basic land value used in this analysis is \$20,000 per acre. (TRENDS®).

Establishment Cost. Costs to establish the orchard are used to determine the non-cash overhead expenses, capital recovery, 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 prune trees through the first year fruit is harvested less returns from production. The *Accumulated Net Cash Cost* in the fourth year shown in Table 1 represents the establishment cost per acre. The cost is \$8,856 per acre or \$885,600 for the 100-acre orchard. The establishment costs added to the bare land value is consistent with the value of an established mature orchard, ($\$20,000 + \$8,856 = \$28,856$). Establishment cost is amortized beginning in the fifth year over the remaining 21 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. Annual ownership costs for equipment and other investments are shown in Table 6. 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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UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER

Table 1. COSTS PER ACRE TO ESTABLISH A PRUNE ORCHARD

Sacramento Valley French Variety (Dried plums)-2018

	Year:	Cost Per Acre					
		1st	2nd	3rd	4th	5th	6th
Dry Tons Per Acre:		0	0	0	0.8	1.33	2.67
Pre-Planting Costs:							
Orchard Removal (50%)		500					
Rip, Disk, Float		450					
Fumigate: (Telone II)		500					
Build Berms		60					
TOTAL PRE-PLANTING COSTS		1,510					
Planting Costs:							
Layout Orchard: Dig, Plant, Wrap, Paint		587	12				
Trees: 183 Per Acre (2% replant in 2nd year)		1,409	31				
Weeds: Strip Spray post-planting (Roundup)		12	0				
TOTAL PLANTING COSTS		2,009	43				
Cultural Costs:							
Well Test/Water Analysis		15	15	15	15	15	15
Prune: Pruning and/or Suckering		112	280	418	445	445	445
Prune: Mechanical, Hedging/Topping		0	0	0	0	0	30
Disease: Dormant-Cytospora, BOT (Topsin M, Rally 40WSP)		0	48	48	48	48	48
Vertebrate Pests: (bait)		18	17	13	28	28	28
Fertilize: (UAN32)		6	14	23	43	58	64
Irrigate: (water & labor)		128	203	249	303	303	303
Irrigate: Acid Flush		11	11	11	11	11	11
Weeds: Mow Middles 5x		42	42	42	42	42	42
Insects: PTB (Intrepid)		59	59	0	0	0	0
Weeds: Summer Spray (Yr1GramoxoneSL 2x/Yr2Roundup+SharkEW)		25	22	21	24	23	24
Weeds: Dormant Strip Spray (tank mix)		108	144	144	147	147	147
Fertilize: Leaf Sampling Analysis (1/40ac)		0	0	4	4	4	4
Prune: Brush Disposal (in field chopping)		0	11	11	15	15	19
Insects: Dormant-Scale, PTB, Mites (Oil, Asana) Alt Yrs.					30	30	30
Insects: Aphid (Asana) Alt Yrs.					16	16	16
Disease: Brown rot, Scab (Vanguard). Insect: PTB (Dipel*) @ green-tip					68	68	68
Disease: Brown rot, Scab (Bravo, Tilt). Insect: PTB (Dipel*) @ bloom					72	72	72
Fertilize: (SOP)					147	147	147
Insect: Mites (Agri-Mek) Alt Yrs.					26	26	26
Pollination: Bee Hives					20	20	20
Disease: Rust (Sulfur) Alt Yrs.					23	23	23
Disease: Brown rot (Luna Experience, Oil) 1x/5 Yrs.					22	21	21
PCA/CCA Services		20	20	20	30	30	30
Tie Trees		0	0	0	0	249	0
Pickup Truck Use		50	50	50	56	56	56
ATV Use		56	56	56	56	56	56
TOTAL CULTURAL COSTS		651	993	1,126	1,692	1,952	1,743
Harvest Costs:							
Shake/Catch/Size					70	117	233
Haul To Dryer					31	52	104
Dry Fruit					336	560	1,120
California Prune Board					28	47	93
TOTAL HARVEST COSTS					465	775	1,550
Interest On Operating Capital @ 5.0%		230	31	35	31	37	37
TOTAL OPERATING COSTS/ACRE		4,399	1,066	1,161	2,188	2,764	3,331

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER

Table 1. Continued

Sacramento Valley French Variety (Dried plums)-2018

	Cost Per Acre					
	Year:	1st	2nd	3 rd	4th	5th
Dry Tons Per Acre:	0	0	0	0.80	1.33	2.67
Cash Overhead Costs:						
Office Expense	100	100	100	100	100	100
Liability Insurance	7	7	7	7	7	7
Field Sanitation Costs	9	9	9	9	9	9
Property Taxes	213	213	212	214	258	258
Property Insurance	1	1	1	1	5	5
Investment Repairs	41	41	41	41	41	41
TOTAL CASH OVERHEAD COSTS	370	370	369	371	419	419
TOTAL CASH COSTS/ACRE	4,770	1,436	1,531	2,559	3,183	3,750
INCOME/ACRE FROM PRODUCTION	0	0	0	1,440	2,394	4,806
NET CASH COSTS/ACRE FOR THE YEAR	4,770	1,436	1,531	1,119	789	0
PROFIT/ACRE ABOVE CASH COSTS	0	0	0	0	0	1,056
ACCUMULATED NET CASH COSTS/ACRE	4,770	6,206	7,737	8,856	9,645	8,589
Non-Cash Overhead (Capital Recovery Cost):						
Fuel Storage Tanks and Pumps	7	7	1	7	7	7
Shop/Field Tools	12	12	12	12	12	12
Land	1,100	1,100	1,100	1,100	1,100	1,100
45 HP Booster/Pressurizing Pump	13	13	13	13	13	13
Drip Irrigation System	119	119	119	119	119	119
Orchard Establishment	0	0	0	0	721	721
Equipment	51	42	34	68	67	68
TOTAL CAPITAL RECOVERY COST	1,303	1,294	1,287	1,320	2,041	2,041
TOTAL COST/ACRE FOR THE YEAR	6,072	2,730	2,817	3,879	5,224	5,791
INCOME/ACRE FROM PRODUCTION	0	0	0	1,440	2,394	4,806
TOTAL NET COST/ACRE FOR THE YEAR	6,072	2,730	2,817	2,439	2,830	985
NET PROFIT/ACRE ABOVE TOTAL COST	0	0	0	0	0	0
TOTAL ACCUMULATED NET COST/ACRE	6,072	8,802	11,619	14,058	16,888	17,873

*Dipel applied alternate years.

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER

Table 2. COSTS PER ACRE TO PRODUCE PRUNES

Sacramento Valley French Variety (Dried plums)-2018

Operation	Equipment	Cash and Labor Costs per Acre					Total Cost	Your Cost
	Time (Hrs/A)	Labor Cost	Fuel	Lube & Repairs	Material Cost	Custom/Rent		
Cultural:								
Well Test/Water Analysis	0.00	0	0	0	0	15	15	
Pruning & Sucker	0.00	445	0	0	0	0	445	
Prune: Top Mechanical (AltYrs)	0.00	0	0	0	0	30	30	
Brush Disposal (in field chopping)	0.42	10	5	4	0	0	19	
Disease: Cytospora/BOT Canker	0.43	11	5	3	29	0	48	
Insect: Dormant (AltYrs)	0.25	6	3	2	19	0	30	
Disease: Greentip/BR/Scab/PTB	0.50	12	6	4	46	0	68	
Disease: Bloom: BR/Scab/PTB	0.50	12	6	4	49	0	72	
Pollinate: Bee Hives	0.00	0	0	0	20	0	20	
Vertebrate Pests: (bait) 5x	0.00	11	0	0	17	0	28	
Fertigate: (UAN 32) 3x	0.00	0	0	0	70	0	70	
Fertigate: (SOP) 3x	0.00	0	0	0	147	0	147	
Irrigate: (water& labor)	0.00	53	0	0	250	0	303	
Weeds: Mow Middles 5x	0.92	23	11	8	0	0	42	
Thin Fruit: Shake Trees (AltYrs)	0.00	0	0	0	0	78	78	
Weeds: Strip Spray (Summer)	0.25	6	3	1	15	0	23	
Disease: Rust (Sulfur)	0.50	12	6	4	1	0	23	
Insects: Mites (AltYrs)	0.25	6	3	2	15	0	26	
Leaf Samples: Analysis (1/40 acres)	0.00	0	0	0	0	4	4	
Insect: PM (1x/5Yrs)	0.13	3	2	1	15	0	21	
Irrigate: Acid Flush	0.00	4	0	0	7	0	11	
Weeds: Strip Spray (Dormant)	0.33	8	3	1	137	0	147	
Insect: Aphid (AltYrs)	0.25	6	3	2	5	0	16	
Pickup Truck Use	1.50	37	13	5	0	0	56	
ATV Use	2.00	50	5	2	0	0	56	
PCA/CCA Service	0.00	0	0	0	0	30	30	
TOTAL CULTURAL COSTS	8.23	718	68	42	842	157	1,827	
Harvest:								
Shake/Catch/Size	0.00	0	0	0	0	350	350	
Haul To Dryer	0.00	0	0	0	0	156	156	
Dry Fruit	0.00	0	0	0	0	1,680	1,680	
California Prune Board	0.00	0	0	0	140	0	140	
TOTAL HARVEST COSTS	0.00	0	0	0	140	2,186	2,326	
Interest on Operating Capital at 5.00%							42	
TOTAL OPERATING COSTS/ACRE	8.23	718	68	42	982	2,343	4,194	

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Table 2. Continued

Sacramento Valley French Variety (Dried plums)-2018

Operation	Equipment	Cash and Labor Costs per Acre					Total Cost	Your Cost
	Time (Hrs/A)	Labor Cost	Fuel	Lube & Repairs	Material Cost	Custom/ Rent		
CASH OVERHEAD:								
Liability Insurance							7	
Office Expense							100	
Sanitation Fee							9	
Property Taxes							258	
Property Insurance							21	
Investment Repairs							41	
TOTAL CASH OVERHEAD COSTS/ACRE							435	
TOTAL CASH COSTS/ACRE							4,630	
NON-CASH OVERHEAD:								
		Per Producing Acre		Annual Cost Capital Recovery				
Fuel Storage Tanks & Pumps		110		7			7	
45HP Booster Pump		180		13			13	
Land-Prunes		20,000		1,100			1,100	
Drip Irrigation System		1,600		119			119	
Shop/Field Tools		150		12			12	
Establishment		8,856		721			721	
Equipment		567		68			68	
TOTAL NON-CASH OVERHEAD COSTS		31,463		2,041			2,041	
TOTAL COSTS/ACRE							6,671	

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER
Table 3. COSTS & RETURNS PER ACRE TO PRODUCE PRUNES
 Sacramento Valley French Variety (Dried plums)-2018

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Dried Plums	4.0	Ton	1,800.00	7,200	
TOTAL GROSS RETURNS				7,200	
OPERATING COSTS					
Herbicide:					152
Roundup PowerMax	3.50	Pt	2.45		9
Shark EW	1.00	FlOz	10.56		11
Prowl H2O	4.00	Qt	12.00		48
Goal 2 XL	3.00	Pt	12.18		37
Rely 280	3.50	Pt	13.92		49
Insecticide:					87
Supreme 440 Oil	2.80	gal	7.00		20
Asana XL	14.00	FlOz	0.69		10
Dipel DF	2.00	Lb	20.95		42
Agri-Mek 0.15EC	5.00	FlOz	3.07		15
Fungicide:					92
Topsin M70 WSB	0.75	LB	10.39		8
Rally 40WSP	6.00	Oz	3.49		21
Vanguard WG	5.00	FlOz	4.95		25
Bravo Weather Stik	4.00	Pt	6.36		25
Tilt	4.00	FlOz	0.77		3
Sulfur – Wetttable	5.00	LB	0.21		1
Luna Experience	1.60	FlOz	5.90		9
Rodenticide:					17
Bait	10.00	LB	1.70		17
Fertilizer:					217
UAN 32	120.00	Lbs. N	0.58		70
SOP Fines 0-0-50	300.00	lb	0.49		147
Pollination:					20
Pollination Fee	1.00	Hive	20.00		20
Water:					257
Water: Pumped	30.11	AcIn	8.33		251
N-pHuric Acid	0.12	Gal	47.54		6
Custom:					2,343
Well Test/Water Analysis	1.00	Acre	15.00		15
Top Trees	0.50	Tree	60.00		30
Thin Fruit	1.00	Acre	78.00		78
Leaf Analysis	0.10	Each	40.00		4
Harvest: Shake/Catch	12.00	Ton	27.50		330
Size Fruit	6.00	Ton	3.25		20
Haul Fruit	12.00	Ton	13.00		156
Dry Fruit (fresh ton)	12.00	Ton	140.00		1,680
PCA/CCA Production	1.00	Acre	30.00		30
Assessment:					140
California Prune Board	4.00	Ton	35.00		140
Labor:					718
Equipment Operator Labor	9.88	hrs	20.76		205
Pruning Labor	25.00	hrs	17.79		445
Non-Machine Labor	0.60	hrs	17.79		11
Irrigation Labor	3.25	hrs	17.79		58
Machinery:					110
Fuel-Gas	5.47	gal	3.46		19
Fuel-Diesel	16.81	gal	2.92		49
Lube					10
Machinery Repair					32
Interest on Operating Capital @ 5.00%					42
TOTAL OPERATING COSTS/ACRE				4,194	
TOTAL OPERATING COSTS/TON				1,049	
NET RETURNS ABOVE OPERATING COSTS				3,006	

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Table 3. Continued

Sacramento Valley French Variety (Dried plums)-2018

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
CASH OVERHEAD COSTS					
Liability Insurance				7	
Office Expense				100	
Sanitation Fee				9	
Property Taxes				258	
Property Insurance				21	
Investment Repairs				41	
TOTAL CASH OVERHEAD COSTS/ACRE				435	
TOTAL CASH OVERHEAD COSTS/TON				109	
TOTAL CASH COSTS/ACRE				4,630	
TOTAL CASH COSTS/TON				1,157	
NET RETURNS ABOVE CASH COSTS				2,570	
NON-CASH OVERHEAD COSTS (Capital Recovery)					
Fuel Storage Tanks & Pumps				7	
45HP Booster Pump				13	
Land-Prunes				1,100	
Drip Irrigation System				119	
Shop/Field Tools				12	
Establishment				721	
Equipment				68	
TOTAL NON-CASH OVERHEAD COSTS/ACRE				2,041	
TOTAL NON-CASH OVERHEAD COSTS/TON				510	
TOTAL COST/ACRE				6,671	
TOTAL COST/TON				1,668	
NET RETURNS ABOVE TOTAL COST				529	

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER
Table 4. MONTHLY CASH COSTS PER ACRE TO PRODUCE PRUNES
 Sacramento Valley French Variety (Dried plums)-2018

	JAN 18	FEB 18	MAR 18	APR 18	MAY 18	JUN 18	JUL 18	AUG 18	SEP 18	OCT 18	NOV 18	Total
Cultural:												
Well Test/Water Analysis	15											15
Pruning & Sucker	445											445
Prune: Top Mechanical (AltYrs)	30											30
Brush Disposal	19											19
Disease: Cytospora/BOT Canker	48											48
Insects: Dormant (AltYrs)	30											30
Disease: Greentip/BR/Scab/PTB			68									68
Disease: Bloom: BR/Scab/PTB			72									72
Pollinate: Hives			20									20
Vertebrate Pests: (bait) 5x		6			6	6			6	6		28
Fertigate: (UAN 32) 3x				23	23	23						70
Fertigate: (Potassium) 3x				49	49	49						147
Irrigate: (water & labor)				33	45	59	65	56	45			303
Weeds: Mow Middles 5x				8	8	8	8	8				42
Thin Fruit: Shake Trees (AltYrs)					78							78
Weeds: Strip Spray (Summer)					23							23
Disease: Rust (Sulfur)					23							23
Insects: Mites (AltYrs)						26						26
Leaf Samples: 1/25 acre							4					4
Insects: PM (1x/5Yrs)								21				21
Irrigate: Acid Flush									11			11
Weeds: Strip Spray (Dormant)											147	147
Insects: Aphid (AltYrs)											16	16
Pickup Truck Use	5	5	5	5	5	5	5	5	5	5	5	56
ATV Use	5	5	5	5	5	5	5	5	5	5	5	56
PCA/CCA Service									30			30
TOTAL CULTURAL COSTS	597	10	175	124	266	181	88	96	101	16	173	1,827
Harvest:												
Harvest & Size								350				350
Haul To Dryer								156				156
Dry Fruit								1,680				1,680
California Prune Board								140				140
TOTAL HARVEST COSTS	0	0	0	0	0	0	0	2,326	0	0	0	2,326
Interest on Operating Capital @ 5.00%	2	3	3	4	5	6	6	16	-1	-1	-1	42
TOTAL OPERATING COSTS/ACRE	599	13	179	127	271	187	94	2,438	100	15	172	4,194
CASH OVERHEAD												
Liability Insurance			7									7
Office Expense	9	9	9	9	9	9	9	9	9	9	9	100
Sanitation Fee									9			9
Property Taxes		129				129						258
Property Insurance		11				11						21
Investment Repairs	4	4	4	4	4	4	4	4	4	4	4	41
TOTAL CASH OVERHEAD COSTS	13	152	19	13	13	152	13	13	22	13	13	435
TOTAL CASH COSTS/ACRE	612	165	198	140	283	340	107	2,450	122	28	185	4,630

UC COOPERATIVE EXTENSION-AGRICULTURAL ISSUES CENTER
Table 5. RANGING ANALYSIS
 Sacramento Valley French Variety (Dried plums)-2018

	YIELD (TONS)						
	2.50	3.00	3.50	4.00	4.50	5.00	5.50
OPERATING COSTS/ACRE:							
Cultural	1,827	1,827	1,827	1,827	1,827	1,827	1,827
Harvest	1,453	1,744	2,035	2,326	2,616	2,907	3,198
Interest on Operating Capital @ 5.00%	38	40	41	42	43	44	46
TOTAL OPERATING COSTS/ACRE	3,318	3,610	3,902	4,194	4,486	4,778	5,070
TOTAL OPERATING COSTS/TON	1,327.37	1,203.44	1,114.92	1,048.53	996.89	955.58	921.78
CASH OVERHEAD COSTS/ACRE	435	435	435	435	435	435	435
TOTAL CASH COSTS/ACRE	3,754	4,046	4,338	4,630	4,921	5,213	5,505
TOTAL CASH COSTS/TON	1,501.55	1,348.59	1,239.34	1,157.39	1,093.66	1,042.67	1,000.96
NON-CASH OVERHEAD COSTS/ACRE	2,041	2,041	2,041	2,041	2,041	2,041	2,041
TOTAL COSTS/ACRE	5,795	6,087	6,379	6,671	6,963	7,255	7,547
TOTAL COSTS/TON	2,318.00	2,029.00	1,823.00	1,668.00	1,547.00	1,451.00	1,372.00

Net Return per Acre above Operating Costs for Prunes

PRICE (\$/ton)	YIELD (tons/acre)						
Dried Plums	2.50	3.00	3.50	4.00	4.50	5.00	5.50
1500.00	432	890	1,348	1,806	2,264	2,722	3,180
1600.00	682	1,190	1,698	2,206	2,714	3,222	3,730
1700.00	932	1,490	2,048	2,606	3,164	3,722	4,280
1800.00	1,182	1,790	2,398	3,006	3,614	4,222	4,830
1900.00	1,432	2,090	2,748	3,406	4,064	4,722	5,380
2000.00	1,682	2,390	3,098	3,806	4,514	5,222	5,930
2100.00	1,932	2,690	3,448	4,206	4,964	5,722	6,480

Net Return per Acre above Cash Costs for Prunes

PRICE (\$/ton)	YIELD (tons/acre)						
Dried Plums	2.50	3.00	3.50	4.00	4.50	5.00	5.50
1500.00	-4	454	912	1,370	1,829	2,287	2,745
1600.00	246	754	1,262	1,770	2,279	2,787	3,295
1700.00	496	1,054	1,612	2,170	2,729	3,287	3,845
1800.00	746	1,354	1,962	2,570	3,179	3,787	4,395
1900.00	996	1,654	2,312	2,970	3,629	4,287	4,945
2000.00	1,246	1,954	2,662	3,370	4,079	4,787	5,495
2100.00	1,496	2,254	3,012	3,770	4,529	5,287	6,045

Net Return per Acre above Total Costs for Prunes

PRICE (\$/ton)	YIELD (tons/acre)						
Dried Plums	2.50	3.00	3.50	4.00	4.50	5.00	5.50
1500.00	-2,045	-1,587	-1,129	-671	-213	245	703
1600.00	-1,795	-1,287	-779	-271	237	745	1,253
1700.00	-1,545	-987	-429	129	687	1,245	1,803
1800.00	-1,295	-687	-79	529	1,137	1,745	2,353
1900.00	-1,045	-387	271	929	1,587	2,245	2,903
2000.00	-795	-87	621	1,329	2,037	2,745	3,453
2100.00	-545	213	971	1,729	2,487	3,245	4,003

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Table 6. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS
Sacramento Valley French Variety (Dried plums)-2018

ANNUAL EQUIPMENT COSTS

Yr.	Description	Price	Yrs. Life	Salvage Value	Capital Recovery	Cash Overhead		Total
						Insurance	Taxes	
18	75HP 4WD Tractor	63,242	15	12,312	5,751	32	378	6,161
18	ATV 4WD	8,350	6	3,443	1,172	5	59	1,236
18	Mower - Flail 16'	13,900	10	2,458	1,653	7	82	1,742
18	Air Blast-PTO 500Gal	26,000	6	7,495	4,117	14	167	4,298
18	Weed Sprayer 100Gal	3,400	10	601	404	2	20	426
18	Pickup Truck 1/2 Ton	32,000	8	11,168	3,903	18	216	4,137
TOTAL		146,892	-	37,477	17,000	78	922	18,000
60% of New Cost*		88,135	-	22,486	10,200	47	553	10,800

*Used to reflect a mix of new and used equipment

ANNUAL INVESTMENT COSTS

Description	Price	Yrs. Life	Salvage Value	Capital Recovery	Cash Overhead			Total
					Insurance	Taxes	Repairs	
INVESTMENT								
Fuel Storage Tanks & Pumps	10,975	30	768	745	5	59	220	1,028
45HP Booster Pump	18,000	25	1,260	1,317	8	96	360	1,782
Land-Prunes	2,000,000	25	2,000,000	110,000	1,692	20,000	0	131,692
Drip Irrigation System	160,000	25	0	11,928	0	800	3,200	15,928
Shop/Field Tools	15,000	20	1,050	1,225	7	80	300	1,612
Establishment	885,600	21	0	72,145	375	4,428	0	76,948
TOTAL INVESTMENT	3,089,575	-	2,003,078	197,360	2,087	25,463	4,080	228,900

ANNUAL BUSINESS OVERHEAD COSTS

Description	Farm	Units/ Unit	Price/ Unit	Total Cost
Liability Insurance	100	acre	6.53	653
Office Expense	100	acre	100.00	10,000
Sanitation Fee	100	acre	8.75	875

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Table 7. HOURLY EQUIPMENT COSTS
Sacramento Valley French Variety (Dried plums)-2018

Yr.	Description	Hours Used	Capital Recovery	Cash Overhead		Operating		Total Oper.	Total Costs/Hr.
				Insurance	Taxes	Lube & Repairs	Fuel		
18	75HP 4WD Tractor	456	4.31	0.02	0.28	2.80	10.75	13.55	18.17
18	ATV 4WD	258	2.11	0.01	0.11	0.96	2.31	3.27	5.50
18	Mower - Flail 16'	134	4.96	0.02	0.25	5.80	0.00	5.80	11.03
18	Air Blast-PTO 500Gal	281	7.48	0.03	0.30	4.53	0.00	4.53	12.35
18	Weed Sprayer 100Gal	58	1.62	0.01	0.08	0.91	0.00	0.91	2.62
18	Pickup Truck 1/2 Ton	150	9.37	0.04	0.52	3.64	8.65	12.29	22.22

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Table 8. OPERATIONS WITH EQUIPMENT AND MATERIALS
 Sacramento Valley French Variety (Dried plums)-2018

Operation	Operation Month	Tractor	Implement	Labor Type/ Material	Rate/ acre	Unit
Well Test/Water Analysis	Jan			Well Test/Water Analysis	1.00	Acre
Pruning & Sucker	Jan			Pruning Labor	25.00	hours
Prune: Top Mechanical	Jan			Top Trees	0.50	Tree
Brush Disposal	Jan	75HP 4WD Tractor	Mower - Flail 16'	Equipment Operator Labor	0.50	hour
Disease: Cytospora, BOT	Jan	75HP 4WD Tractor	Air-Blast-PTO 500Gal	Equipment Operator Labor	0.52	hour
				Topsin M70 WSB	0.75	Lb
				Rally 40WSP	6.00	Oz
Insects: Aphids	Jan	75HP 4WD Tractor	Air-Blast-PTO 500Gal	Equipment Operator Labor	0.30	hour
				Supreme 440Oil	2.00	Gal
				Asana XL	7.00	FIOz
				Asana (AltYrs)		
Disease: Green tip	Mar	75HP 4WD Tractor	Air-Blast-PTO 500Gal	Equipment Operator Labor	0.60	hour
				Vanguard WG	5.00	FIOz
				Dipel DF	1.00	Lb
				Dipel 1/2 rate		
Disease: Bloom	Mar	75HP 4WD Tractor	Air-Blast-PTO 500Gal	Equipment Operator Labor	0.60	hour
				Bravo Weather Stik	4.00	Pt
				Tilt	4.00	FIOz
				Dipel DF	1.00	Lb
				Dipel 1/2 rate		
Pollinate: Bee Hives	Mar			Pollination Fee	1.00	Hive
Vertebrate Pests	Mar			Non-Machine Labor	0.12	hour
				Bait	2.00	Lb
	May			Non-Machine Labor	0.12	hour
				Bait	2.00	Lb
	June			Non-Machine Labor	0.12	hour
				Bait	2.00	Lb
	Sept			Non-Machine Labor	0.12	hour
				Bait	2.00	Lb
	Oct			Non-Machine Labor	0.12	hour
				Bait	2.00	Lb
Fertigate: (UAN 32)	Apr			UAN 32	40.00	Lbs. N
	May			UAN 32	40.00	Lbs. N
	June			UAN 32	40.00	Lbs. N
Fertigate: (Potassium)	Apr			SOPotashFine0-0-50	100.00	Lb
	May			SOPotashFine0-0-50	100.00	Lb
	June			SOPotashFine0-0-50	100.00	Lb
Irrigate	Apr			Irrigation Labor	0.50	hour
				Water - Pumped	2.86	AcIn
	May			Irrigation Labor	0.50	hour
				Water - Pumped	4.38	AcIn
	June			Irrigation Labor	0.50	hour
				Water - Pumped	5.98	AcIn
	July			Irrigation Labor	0.50	hour
				Water - Pumped	6.79	AcIn
	Aug			Irrigation Labor	0.50	hour
				Water - Pumped	5.71	AcIn
	Sept			Irrigation Labor	0.50	hour
				Water - Pumped	4.29	AcIn
Weeds: Mow Middles 5x	Apr	75HP 4WD Tractor	Mower - Flail 16'	Equipment Operator Labor	0.22	hour
	May	75HP 4WD Tractor	Mower - Flail 16'	Equipment Operator Labor	0.22	hour
	June	75HP 4WD Tractor	Mower - Flail 16'	Equipment Operator Labor	0.22	hour
	July	75HP 4WD Tractor	Mower - Flail 16'	Equipment Operator Labor	0.22	hour
	Aug	75HP 4WD Tractor	Mower - Flail 16'	Equipment Operator Labor	0.22	hour
Thin Fruit: Shake Trees	May			Thin Fruit	1.00	Acre
Weeds: Strip Spray	May	ATV 4WD	Weed Sprayer 100Gal	Equipment Operator Labor	0.30	hour
				Roundup PowerMax	2.00	Pt
				Shark EW	1.00	FIOz
Disease: Rust (Sulfur)	May	75HP 4WD Tractor	Air-blast-PTO 500Gal	Equipment Operator Labor	0.60	hour
				Sulfur - Wettable	5.00	Lb
Insects Mites (AltYrs)	June	75HP 4WD Tractor	Air-blast-PTO 500Gal	Equipment Operator Labor	0.30	hour
				Agri-Mek 0.15EC	5.00	FIOz
Leaf Analysis (1/40ac)	July			Leaf Analysis	0.10	Each
Insect: PM (Luna E+Oil)	Aug	75HP 4WD Tractor	Air-blast-PTO 500Gal	Equipment Operator Labor	0.16	hour
				Luna Experience	1.60	FIOz
				Supreme Oil	0.80	gal
Irrigate: Acid Flush	Sept			Irrigation Labor	0.25	hour
				Water - Pumped	0.10	AcIn
				N-pHuric Acid	0.12	Gal

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Table 8. CONTINUED

Sacramento Valley French Variety (Dried plums)-2018

Operation	Operation Month	Tractor	Implement	Labor Type/ Material	Rate/ acre	Unit
Weeds: Strip Spray	Nov	ATV 4WD	Weed Sprayer 100Gal	Equipment Operator Labor	0.40	hour
				Prowl H2O	4.00	Qt
				Goal 2 XL	3.00	Pt
				Roundup PowerMax	1.50	Pt
				Rely 280	3.50	Pt
Insect: Aphid (Alt. yrs.)	Nov	75HP 4WD Tractor	Air-Blast-PTO 500Gal	Equipment Operator Labor	0.30	hour
				Asana XL	7.00	FLOz
Pickup Truck Use	Nov	ATV 4WD	Pickup Truck 1/2 Ton	Equipment Operator Labor	1.80	hours
ATV Use	Nov			Equipment Operator Labor	2.40	hours
PCA/CCA Services	Sept			PCA/CCA Production	1.00	Acre
Harvest/Catch/Size	Aug			Harvest-Shake/Catch	12.00	Ton
Haul To Dryer	Aug			Size Fruit	6.00	Ton
				Haul Fruit	12.00	Ton
Dry Fruit	Aug			Dry Fruit (fresh ton)	12.00	Ton
California Prune Board	Aug			California Prune Board	4.00	Ton