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2020

SAMPLE COSTS TO ESTABLISH AN ORCHARD AND PRODUCE EUREKA LEMONS

Ventura County
Micro-sprinkler Irrigation

LEMON ESTABLISHMENT AND PRODUCTION COSTS AND PROFITABILITY ANALYSIS IN VENTURA COUNTY, 2020

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ABSTRACT

We developed this study for growers, prospective growers, agricultural lenders, and all who are involved or have interest with the establishment/reestablishment and production of lemons in Ventura County. We present estimates of per acre financial requirements for establishment a lemon orchard and production. Also, we analyzed enterprise profitability. The production practices are considered typical for lemon production in Ventura and obtained from local growers and Farm Advisor Ben Faber, UCCE in 2019-20. Costs for labor, materials, equipment, and custom services were provided by growers and allied industries in 2019-20.

INTRODUCTION

California lemon acreage was at ~47,000 acres in 2018-19 of which Ventura County accounts for 31%. Acreage in Ventura County was at 14,407 in 2019. There have been some increases in acreage since 2018 and according to the University of California Cooperative Extension (UCCE) Farm Advisor, Ben Faber, growers are planting in previous

lemon ground and even in what used to be vegetable and strawberry crops grounds. The last cost study was published in 1997. Growers asked for new studies to evaluate if more expansion will be feasible. This study provides an estimate of sample costs to establish and produce lemons in Ventura County, California in 2020.

For additional information or an explanation of the calculations used in the study, please call the UCCE, Riverside County, (951) 683-6491, ext. 243 or email at ettakele@ucanr.edu. Sample Costs for many commodities are available on the Department of Agricultural and Resource Economics website; coststudies.ucdavis.edu/en/ and UCCE Riverside County Farm Management website: ucanr.edu/sites/Farm_Management/Costs_and_Returns/

ASSUMPTIONS

Production practices, overhead costs, and methods of calculations used in this study are consistent with, and representative of a well-managed orchard in Ventura County, however, they may not apply to all farms as production practices may vary among growers. The use of trade names and cultural practices in this report do not constitute an endorsement or recommendation by the University of California, nor is any criticism implied of other products or cultural practices that are not discussed in this cost study. *The University is an affirmative action/equal opportunity employer.*

Establishment and Production Practices

Farm Size and Land value: We based this study on 50 adjoining acres; 48 of which will be planted to lemons, 2 acres for roads that are needed for equipment and labor passes and storage sheds. The value of the land is based on Ventura County agricultural land values for 2018 (California Chapter of the American Society of Farm Managers and Rural Appraisers. 2019). Land values in Ventura County for lemons range between $50,000 and $86,000 per acre for an established grove. This study will assume a land value of **$80,000 per acre based on growers' report of current purchases.**

Land Preparation: Land preparation operations include deep ripping (slip plowing) twice of the soil profile 4 to 6 feet deep to break stratified layers that affect root and water penetration. This is generally done with a ripper (field cultivator) pulled by a tractor. To breakup large clods of dirt, a heavy disc is used, taking multiple passes and then leveled using a triplane and a tractor. The field is chiseled and rolled, lightly disced between each chisel pass and the berms are made. Land preparation may be contracted or done by the grower. The orchard layout is surveyed and/marked and the irrigation systems is laid out. Most of the land preparation is done in the year prior to planting. During the land preparation, herbicides may be applied as a strip spray for weed control in the tree rows.

Planting. The planting operation includes digging holes and planting trees in February. Trees are planted at this time to ensure that they establish themselves during the warm season. The trunks of the trees are wrapped with a foam wrap to shield them from sunburn and to reduce sucker development. Some tree replacements may be needed; we estimate that to be 2%~3% in the 2nd year.

Trees. The majority of lemon trees in Ventura County are of either 'Lisbon' or 'Eureka' variety. The variety of lemon that will be used in this study is 'Eureka' on macrophylla rootstock. Tree costs are estimated at $17/tree; generally standard for the varieties given. There are variations of orchard tree spacing in the County. The trees are planted on 20 X 14-foot spacing which is 155 trees per acre. Lemon groves live more than 40 years if they are maintained well. **This study assumes 40 years of life.**

Pruning. During the first two years of establishment, suckers are removed from the trees in April. Pruning methods and frequencies vary widely in the county. Pruning begins year three with hand pruning. The trimmed branches are then stacked in the center of each row and shredded. Topping maintains tree height enabling easy spray coverage and ease of harvest operations. Hedging tree rows minimizes disruption of sprays applied to the orchard as well as reduces fruit damage which could be caused during spraying or other activities. Hand pruning of dead wood and suckering enhances spray deposition which is particularly important in the case of spraying for red scale. In addition, hand pruning often times increases the amount of fruit inside the tree canopy.

Table 1-A. Suckering and pruning operation time per tree and per acre.

Year	Operation	Minutes per tree per year	Hours per acre per year
1	Sucker	2.00	5.00
2	Sucker	2.00	5.00
3	Sucker and Prune	3.00	8.00
4	Prune	4.20	11.00
5	Prune	10.00	26.00
6	Prune	10.00	26.00
7	Prune	10.00	+26.00

Irrigation. The irrigation system is by a micro-sprinkler system. Water costs are highly variable across the county. Irrigation costs include the water and the labor for system operation and monitoring. There will be no assumptions made about the influences on irrigation that could be caused by rainfall, runoff, evaporation, winter water requirements or rainfall stored in the soil profile. **Sources of Irrigation water** vary from surface sources to municipal and well waters. Most growers use well water. We assumed well water irrigation and is delivered to the farm at a cost of $300 per acre-foot or $25.00 per acre-inch. Table 2-A provides the amount of irrigation water commonly applied per acre for lemons.

Labor for operating and monitoring the system includes walking the lines to maintain and repair broken sprinklers and lines is estimated at 15 minutes per acre per irrigation. In the first year, the trees are irrigated in March shortly after planting. Irrigation water is generally applied from April through October **twice a week.**

Table 2-A. Irrigation: Total water applied per acre per year.

Year	Inches per acre
1	4.0
2	12.0
3	18.0
4	20.0
5	25.0
6+	30.0

Frost Protection. Frost protection is generally required from late winter to early spring. Lemons are susceptible to cold temperatures when it gets below freezing. The highest potential for frost in Ventura County are the months of December and January.

There are several techniques to protect against frost damage. In this region, three methods are most frequent.

1. Grove floors are cleared of any vegetation. If cover crops are present in the orchard, they must be trimmed as low as possible. The low vegetation traps heat in the soil during the day and releases it at night, thus raising the air temperature of the orchard. If cover crops are neglected or untrimmed; vegetation reflects solar radiation, ultimately lowering the temperature of the surrounding air.

2. Water is applied to the grove floors through the irrigation system. This technique can work with a micro sprinkler system, but is not successful with drip. Water at 3.13 acre-inches per acre are used for frost protection during November, December and January.
3. Wind machines, tall linear cylindrical structures with a thin propeller attached parallel to the main pole, pull warmer air from above the trees down into grove in order to mix with the colder air and ultimately raise the temperature.

A Wind machine serves 10 acres. Wind machines with good maintenance are assumed to have a similar life cycle as the lemon grove. The value of the wind machine includes the labor for installation. Fuel for wind machines could be propane, diesel, or natural gas. On average, fuel requirement could run 10-15 gallons per hour depending on the type of fuel used. The wind machines will operate on propane gas at an approximate rate of 14 gallons per hour and at a cost of $3.25 per gallon. Wind machines are used in November, December and January. We assumed that there will be at least 10 days use of wind machines during those months and each time the machines will be used for 12 hours.

Fertilization. Nitrogen (N) is the major nutrient required for proper tree growth and optimum yields. Beginning in the first year, UAN-32 (Urea Ammonium Nitrate) is applied once a month from March through October. Beginning in the third year, a mixture of UAN32 and Urea (46-0-0) can be used. This study used UAN32 as the source of N for all years. N is applied through the irrigation system. The amount of N application is shown in Table 3-A. Potassium thiosulfate (0-0-25) is also used at 50 gallons per acre per year via the sprinkler system. Growers may use sulpomag instead of potassium thiosulfate.

Soil Amendments. Depending on the situation, gypsum is applied for improving water infiltration and sulfur to correct soil pH, based on soil and water tests. Compost may also be added to enhance soil organic matter. This study does not include any soil amendments.

Table 3-A. Nitrogen (N) application per acre per year.

Year	Per Tree	Application through irrigation system
	Lbs. N	Lbs. N
1	0.09	14.00
2	0.20	31.00
3	0.31	48.00
4	0.48	74.00
5	0.69	107.00
6	0.92	143.00
7+	1.20	186.00

Pest Management. The pesticide/fungicide and rates mentioned in this study are listed in the; *UC Integrated Pest Management Guidelines, Citrus*. For more 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; check with your farm advisor, PCA and/or the UC IPM website for current recommendations. Pesticide costs may vary by location, brand, and volume of purchase.

Pest control in Ventura lemons has been confounded by the need to control Asian Citrus Psyllid (ACP). The lemon growing area has been isolated into Area Wide Spray Zones, where growers are asked to treat during a similar time frame in order to depress the ACP locally. The spray periods are winter, summer and fall. The ACP sprays for the

most part include control of other pests as much as possible. The other major citrus pests here are citrus thrips, bud mite, mealybug and scales. The spray materials are rotated to reduce resistance, as well as to deal with the changing pest population. There is no standard protocol, but a range and variation of materials and combinations used by growers. All pest management strategies need to be tailored to meet specific orchard requirements and should be discussed with a certified pest control adviser (PCA) or local farm advisor. There is also more information at; www2.ipm.ucanr.edu/agriculture/citrus/ regarding pest management treatment.

Applications can be by helicopter (15-20 gallons per acre) if the winter is inclement or by ground rig. For the most part growers apply materials with a speed sprayer by ground at 200-500 gallons per acre. The grower can make the applications with their own equipment or by contracting with a pest control company which is most common. Timing and materials are directed/recommended by licensed Pest Control Advisers.

The PCA provides written recommendations. In addition, the PCA/CCA can monitor the field for agronomic problems including nutrition. Growers may hire a private PCA/CCA or receive the service as part of a service agreement with an agricultural chemical and fertilizer company. The cost of PCA/CCA used is $38 per acre.

Citrus Pest and Disease Prevention Program (CPDPP). The CPDPP was created to advise the Agricultural Secretary of California and the agricultural industry about efforts to combat serious pests and diseases that threaten California's citrus crop. Growers must pay a mandatory fee of $0.08 per 37.5-pound carton, to support the disease prevention program.

Disease. Brown rot is the primary fruit disease. Brown Rot control may begin in the third year with an application of 3 lbs. of copper sulfate. The same fungicide mixture also controls Septoria spot. Brown rot develops in the fall initially on fruit that is close to the ground. The pathogen is normally found in the soil and is splashed onto the low hanging fruit by rain. Symptoms usually appear during cool, wet periods on mature or nearly mature fruit. Brown Rot control is done to protect the fruit from fungal spores that are splashed onto fruit during the rainy season.

Nematodes and Phytophthora. Nematodes can cause significant problems in lemon groves. These microscopic invertebrate pests interfere with the tree's nutrient absorption by burrowing into, and living in, the lemon tree's root system. Chronic infection leads to decreased fruit size and retarded growth. Nematodes (Tylenchulus semipenetrans), phytophthora root rot (Phytophthora citrophthora and P. parasitica) and phytophthora gummosis (Phytophthora ssp) can be severe problems, if the field was previously planted to citrus. Samples for phytophthora and nematodes should be taken to detect the presence and population levels of the organisms prior to planting. Management strategies for phytophthora and nematodes problems include planting resistant rootstocks, irrigation management, and chemical applications for control. Nematodes can be diagnosed by taking soil samples from around suspected infected trees. Treatment involves using a nematicide, such as Nemacur, which can be applied through the irrigation system. Nematodes are assumed to not be a problem; therefore, no cost is included in the study.

Weeds-Vegetation Management. During the summer and spring months of the first year, weeds in the center of the tree rows are maintained by chemical sprays. Additionally, a residual/pre-emergent herbicide, (such as simazine) is applied to the orchard floor in the fall and in the spring. Surviving weeds are controlled with occasional spot sprays and hand-weeding during the year. These operations are done at the same time during irrigation.

Growth Regulators. Gibberellic acid (ProGib) and 2, 4-D (Citrus Fix) treatments are made on mid-to-late harvested lemons. Gibberellic acid is not applied to early ripening lemons, those picked in October and November. Gibberellic acid maintains a juvenile rind and 2, 4-D applied in October/November minimizes pre-harvest fruit drop. Use of gibberellic acid and/or 2, 4-D sprays may cause fruit drop, therefore in most cases growers do not use these materials.

Harvest, Yields and Returns

Harvest. Fruit bearing begins in the third year of establishment, typically full production is reached by the eighth year. Full production is reached at an earlier date with higher density plantings. The crop is handpicked and hauled by a contracted harvesting company.

Typically, there will be three picks/harvests in each season, although the season is year-round. The most significant pick is usually in the winter. Lemons are handpicked and put into field bins that hold approximately 900lbs (24 carton equivalent) of fruit. The lemons are hauled from the field to a packinghouse where they are washed, graded, sized, and packed into cartons. Picking, hauling, packing, and marketing costs from the field to the packinghouse are paid by the grower. Current rates for these services vary - picking and hauling costs are $3.34 per carton (37.5 lbs. weight) and the packing house costs are $5.19 per carton. Delivering outside the local area will increase hauling costs. The packing house costs includes costs for the carton, packing, marketing and some miscellaneous fees charged by the packer. The costs in this study are based on typical costs received from packinghouses and growers in the region.

Yields. Typical annual yields for lemons are measured by per-acre field bins that weigh approximately 900 lbs. (24 cartons), but are typically sold by packed cartons weighing **40 or 37.5 lbs.** Packed cartons represent 80**%** of the fruit picked for fresh. The remaining 20% may go to juices or a small percentage may be culls. No additional revenue is shown.

Table 4-A. Estimated Lemon Yields Per Acre in Ventura County.

	Field Bins			Packed Cartons
Year	900 lbs. each	lbs./acre	Total Cartons 37.5 lbs. each	37.5 lbs. each (80% of yield)
3	14.5	13,050	244.80	195.84
4	24.2	21,780	408.00	326.40
5	38.4	34,560	648.00	518.40
6	53.0	47,700	895.20	716.16
Production	60.3	54,270	1,017.60	814.08

State Marketing Order. Commercial lemon growers pay assessment fees. Under a state marketing order, mandatory assessment fees are collected and administered by the Citrus Research Board (CRB). This assessment, currently $0.03 per 37.5-pound carton, is used to fund industry research programs.

Grower Returns: Returns are calculated as total cartons per acre multiplied by price per carton. In this study the average price per carton for 2019 according to USDA-NASS date is $16.42 per carton.

Labor, Equipment and Interest

Labor wages (including payroll overhead/benefits of 48.33%) of $26.70 per hour for equipment operators and $19.28 for manual labor. The basic hourly wages are $18.00 for equipment operators and $13.00 for manual labor. The overhead includes the employers' share of federal and California state payroll taxes, workers' compensation insurance for orchard/fruit crops (code 0016), and a percentage for other possible benefits. Workers' compensation costs will vary among growers, but for this study the cost is based upon the Occupational Employment Statistics (OES) survey results, January 2020.

Management/Supervisor Salaries. Wages for management are not included. The grower farms the orchard, so no cost is allocated to management. Returns above all costs is considered a return to management and profit.

Equipment Operating Costs. Tractor time is calculated at 10% higher than actual time to account for setup, travel and down time.

Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by the American Society of Agricultural and Biological Engineers (ASABE). On average, a majority of repair costs are 2% of the initial purchase price. Fuel and lubrication costs are also determined by ASABE equations based on

maximum Power Take-Off (PTO) horsepower, and fuel type. Prices for on-farm delivery of red dye diesel and gasoline are $2.92 (excludes excise tax) and $3.20 per gallon, respectively. Fuel costs are derived from the Energy Information Administration, averaging January to October 2020 fuel prices. The cost includes a 13% local sales tax on diesel fuel and 2.25% sales tax on gasoline. Gasoline also includes federal and state excise tax, which are refundable for on-farm use when filing for income tax.

Growers use a ½ ton pickup for business and a utility vehicle (UTV) for checking and monitoring the field, irrigating and checking the irrigation.

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 5.25% per year, (rate during June, 2020). A nominal interest rate is the typical market cost of short term borrowed funds.

Cash Overhead

Property Taxes. Counties charge a base property tax rate of 1 percent on the assessed value of the property. In some counties special assessment districts exist and charge additional taxes on property including equipment, buildings, and improvements. For this study, 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. This is due to how it is annually calculated and then compared to its Proposition 13 (factored base year value). The lower of the two is used for their annual assessment.
boe.ca.gov/proptaxes/pdf/lta19029.pdf

boe.ca.gov/proptaxes/faqs/changeinownership.htm

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

Property insurance coverage for property loss is charged at 0.886% of the average value of the assets over their useful life.

Liability insurance policies cover the expenses for damages and bodily injury claims on their property and damages to another person's property done by the insured. The charges are $1,092 for the entire farm or $21.84 per acre for a basic policy for a farm of this size. Different levels of coverage will increase the costs.

Crop Insurance is available to citrus growers for any unavoidable loss of production, damage or poor quality resulting from adverse weather conditions such as cool wet weather, freeze, frost, hail, heat, rain, wind and damage from birds, drought, earthquakes and fire. Coverage levels are from 50-85 percent of the approved average yield as established by verifiable production records from the orchard. Actual insurance coverage is by unit, not by acre. A significant number of growers purchase crop insurance in this region. Due to variability in coverages, crop insurance is not included in this study. For policy and information, visit the USDA Risk Management Agency, 2020 Crop Insurance Policies link: rma.usda.gov/policies/.

Office Expense. Office and business expenses are estimated at $150 per acre. These expenses include office supplies, telephone/internet, bookkeeping, accounting, office utilities, and miscellaneous administrative charges.

Sanitation Services. Sanitation services provide one portable toilet for the farm of 48 acres. We estimate the cost at $840 annually for a double toilet unit with washbasin, delivery and 4 months of weekly services.

Investment Repairs. Annual maintenance is calculated as 2% of the purchase price of assets such as irrigation system, wind machines, building and shop tools.

Non-Cash Overhead

Capital Recovery Costs: Non-cash overhead costs are calculated as the capital recovery cost for equipment and other farm investments. Capital recovery cost is the annual depreciation and interest on investment for capital assets. It is the amount of money required each year to recover the difference between the purchase prices and salvage value (unrecovered capital) of the asset. It is equivalent to the annual payment on a loan for the investment (asset) 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 interest on investment, but more accurately represents the annual costs of ownership because it takes the time value of money into account the formula for the calculation of the annual capital recovery costs is ((Purchase Price – Salvage Value) x Capital Recovery Factor) + (Salvage Value x Interest Rate); (Boehlje and Eidman).

Salvage Value. Salvage value is an estimate of the remaining value of an investment at the end of its useful life. For farm machinery (tractors and implements) the remaining value is a percentage of the new cost of the investment. 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 (Boehlje and Eidman). 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.

Long Term Interest Rate. An interest rate of 5.5% is used to calculate capital recovery (based on 2020 rates). This rate is the long-term rate of return to agricultural assets in California.

Irrigation System. The system includes a low-volume irrigation system with emitters discharging 10 gallons per hour and are spaced at one emitter per tree. The cost for the low-volume irrigation system includes the pump, filtration system, hoses, emitters, and installation. The life of the irrigation system is estimated at 40 years. The above ground portion of the irrigation system will probably have to be replaced once per ten years.

Building/Barn. We assume the farm has a metal shop building of 1,800 square feet, built on a cement slab with a fence area for equipment storage.

Shop/Field Tools. Shop tools include, hand tools, and miscellaneous field tools such as for pruning use. Vertebrate traps are included in this inventory.

Fuel Tanks. Farms have one or two fuel tanks. We included two 500-gallon fuel tanks using gravity feed that are on metal stands. The tanks are setup in a cement containment pad that meets federal, state, and county regulations.

Risk. There are several risk factors that impact the production and profitability of crop production. 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.

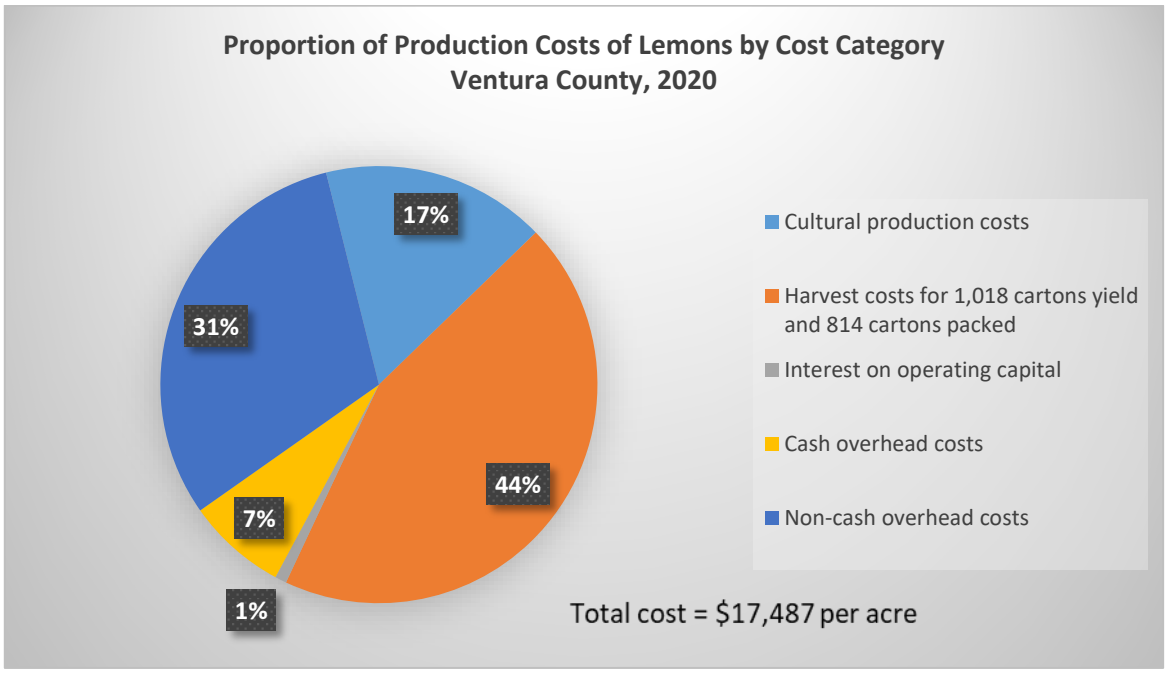
Establishment Cost. Costs to establish the grove are used to determine capital recovery expenses, depreciation, and interest on investment for the production years. Establishment cost is the sum of the costs for land preparation, planting, trees, cash overhead and production expenses for growing the trees through the first year that lemons are harvested minus any returns from production. The Total *Accumulated Net Cash Cost* on Table 1, in the third year represents the establishment cost. The cost is $11,623 per acre or $557,904 for the 48-acre orchard. The establishment cost is amortized beginning in the fourth year over the remaining 37 years the grove is in production.

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

Summary of Costs and Returns

Our estimates of total establishment cost based on the assumptions we stated above of a typical lemon grove in Ventura County is $ 36,669 per acre. Establishment is a cumulative of the first 6 years costs and returns. We amortized the establishment cost over the life of the grove and included in the annual production cost to reflect the replacement cost of the investment.

The annual production cost estimate according to our assumptions is $ 17,487 (tables 3 and 4). Table 3 shows costs by type of activity and table 4 shows costs by type of input. The pie graphs that follows shows the proportion of costs by category. Most of the cultural production cost is accounted for by frost protection, pest control and irrigation. The use of well water than municipal water has helped to lower the irrigation water cost in Ventura County as compared to other subtropical crops producing regions such as San Diego that are dependent on municipal water use. Lemon harvesting is labor intensive; hence it accounts for almost half of the total lemon production cost.



Land lease or the opportunity cost of using land in lemon production accounts for a major part of non-cash costs. Based on $80,000 per acre land value, which reflects the current price growers are paying for land in Ventura County, the lemon enterprise is charged $4,400 per acre for land use. Land lease accounts for 25% of the total cost.

Profitability Analysis

1. Gross margin: Gross margin (or returns above cash costs) is what growers often refer to as profit if there is no debt on the farming operation. It approximates the returns to management and investment. If you deduct depreciation, it also approximates taxable income. Gross margin is calculated as gross returns (price times yield) minus cash costs of production. Based on our estimate, the enterprise shows a gross margin of $4,620 per acre.
2. Economic profit (or returns above total cost) is a very useful measure of how attractive the enterprise is for potential investors and entrants into the business. Economic profit can be positive or zero. A zero economic profit should not be alarming if all costs, including the owners' labor and management fees are included in the production cost. In this study, returns to management is negative by $779 per acre. The returns to management should be evaluated in perspective of the land value. In this study, the current trend of planting has caused the land value to reach $80,000 per acre, hence the opportunity cost or land lease accounted for 25% of the total cost. We suggest that growers evaluate their returns to management based on their specific land value appraisals.

3. Break-even and Range Analyses: Given our yield assumption of 1,018 cartons per acre, the break-even price needed for gross margin is $11.88 per carton. However, the break-even price needed for the total cost of production is $17.18 per carton; $0.76 less than the market price ($16.42 per carton) we used in this study. In order to accommodate yield and price variations that may exist in the County, we provided a range analyses of gross margin and returns to management at various yield and price combinations (table 6). Growers can identify their gross margin and returns to management based on their yield and prices received.

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TABLE 1. COSTS PER ACRE BY YEAR TO ESTABLISH EUREKA LEMONS

Ventura County-2020

Operation	Yr. 1	Yr.2	Yr.3	Yr. 4	Yr. 5	Yr. 6	Your Costs
Pre-Plant:							
Ripping 2x	150						
Disc-heavy 4x	140						
Level-Triplane 4x	100						
Chisel & Roll 2x	52						
Disc-light 4x	112						
Berms	200						
Survey/Mark Orchard Site	125						
Irrigation: System Layout	55						
TOTAL PRE-PLANT COSTS	934						
Planting:							
Plant Trees: Dig/Plant/Wrap/Stake	3,379	65					
TOTAL PLANTING COSTS	3,379	65					
Cultural:							
Frost Protection 3x		546	546	546	546	546	
Irrigation: Water & Labor	387	587	593	643	768	893	
Fertilizer: UAN 32	5	10	16	25	36	48	
Fertilizer: Urea & Potassium Thiosulfate	64	67	70	75	82	88	
Insects: Winter Pesticide Application		62	62	62	62	62	
Weeds: Spot Spray	24	24	24	24	24	24	
Insects: Summer Pesticide Application	323	323	323	323	323	323	
Weeds: Pre-emergence	44	44	44	44	44	44	
Insects: Fall Pesticide Application	76	76	76	76	76	76	
Disease: Brown Rot/Septoria			38	38	38	38	
Pruning & Suckering	96	96	154	212	501	501	
Truck: Pickup	88	88	88	88	88	88	
UTV	42	42	42	42	42	42	
Vertebrate Pests: Gophers	37	37	37	37	37	37	
PCA Services	38	38	38	38	38	38	
TOTAL CULTURAL COSTS	1,222	2,040	2,151	2,272	2,702	2,847	
Harvest:							
Pick and Haul			818	1,363	2,164	2,989	
Sort and Pack			1,017	1,692	2,690	3,717	
Assessments: CPDPP/CRB			22	45	71	98	
TOTAL HARVEST COSTS			1,857	3,099	4,926	6,805	
Interest on Operating Capital at 5.25%	180	67	90	106	136	156	
TOTAL OPERATING COSTS/ACRE	5,716	2,172	4,098	5,478	7,764	9,808	

UC COOPERATIVE EXTENSION AND AGRICULTURAL ISSUES CENTER

TABLE 1. CONTINUED

Ventura County-2020

Operation	Yr. 1	Yr.2	Yr.3	Yr. 4	Yr. 5	Yr. 6	Your Costs
CASH OVERHEAD:							
Office Expense	150	150	150	150	150	150	
Liability Insurance	22	22	22	22	22	22	
Field Sanitation	18	18	18	18	18	18	
Food Safety/GAP	26	26	36	36	36	38	
Leaf Analysis	9	9	9	9	9	9	
Soil Analysis	10	10	10	10	10	10	
Irrigation Waiver Fee	16	16	16	16	16	16	
Property Taxes	821	821	821	879	879	879	
Property Insurance	73	73	73	78	78	78	
Investment Repairs	73	73	73	73	73	73	
TOTAL CASH OVERHEAD COSTS/ACRE	1,217	1,217	1,227	1,291	1,291	1,291	
TOTAL CASH COSTS/ACRE	6,932	3,389	5,325	6,769	9,054	11,100	
INCOME/ACRE FROM PRODUCTION			**4,023**	**6,699**	**10,640**	**14,696**	
NET CASH COSTS/ACRE FOR THE YEAR	6,932	3,389	1,302	70			
PROFIT/ACRE ABOVE CASH COSTS					**1,586**	**3,596**	
ACCUMULATED NET CASH COSTS/ACRE	6,932	10,321	**11,623**	11,693	10,107	6,511	
NON-CASH OVERHEAD: (Capital Recovery):							
Wind Machines	64	64	64	64	64	64	
Shop Building	12	12	12	12	12	12	
Shop Tools	13	13	13	13	13	15	
Drip Irrigation (48 Acres)	127	127	127	127	127	127	
Land (50 Acres)	4,400	4,400	4,400	4,400	4,400	4,400	
Fuel Tanks	13	13	13	13	13	13	
Grove Establishment (48 acres)				742	742	742	
Equipment	26	26	26	26	26	26	
TOTAL NON-CASH OVERHEAD COSTS	4,655	4,655	4,655	5,397	5,397	5,397	
TOTAL COST/ACRE FOR THE YEAR	11,588	8,044	9,981	12,166	14,451	16,497	
INCOME/ACRE FROM PRODUCTION			**4,023**	**6,699**	**10,640**	**14,696**	
TOTAL NET COST/ACRE FOR THE YEAR	11,588	8,044	5,958	5,467	3,811	1,801	
NET PROFIT/ACRE ABOVE TOTAL COST							
TOTAL ACCUMULATED NET COST/ACRE	11,588	19,632	25,590	31,057	34,868	36,669	

UC COOPERATIVE EXTENSION AND AGRICULTURAL ISSUES CENTER

TABLE 2. MATERIAL AND CUSTOM COSTS-ESTABLISHMENT YEARS

Ventura County-2020

			Est/Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Your Costs
							Total Per Acre								
	Unit	$/Unit	units	$	units	$	units	$	units	$	units	$	units	$	
OPERATING COSTS															
Pre-Planting:				**754**											
Deep Tillage/Ripping	Pass	75.00	2.00	150											
Disc (heavy)	Pass	35.00	4.00	140											
Land Level (Triplane)	Pass	25.00	4.00	100											
Chisel & Roll	Pass	26.00	2.00	52											
Disc (light)	Pass	28.00	4.00	112											
Berms	Acre	200.00	1.00	200											
Frost Protection:						**546**		**546**		**546**		**546**		**546**	
Wind Machine	Acre	546.00			1.00	546	1.00	546	1.00	546	1.00	546	1.00	546	
Planting:				**3,379**		**65**									
Plant Trees: Dig/Plant/Wrap/Stake	Tree	4.80	155	744	3.00	14									
Trees: Eureka Lemon	Tree	17.00	155	2,635	3.00	51									
Fertilizer:				**68**		**77**		**86**		**100**		**117**		**136**	
UAN-32	lb. N	0.56	8.37	5	18.60	10	28.83	16	44.64	25	64.17	36	85.56	48	
Urea-Low Biuret (46%)	lb. N	0.48	5.58	3	12.40	6	19.22	9	29.76	14	42.78	21	57.04	27	
Potassium Thiosulfate (0-0-25)	Gal	1.22	50.00	61	50.00	61	50.00	61	50.00	61	50.00	61	50.00	61	
Herbicides:				**33**		**33**		**33**		**33**		**33**		**33**	
Roundup PowerMax	Pint	3.45	5.60	19	5.60	19	5.60	19	5.60	19	5.60	19	5.60	19	
Simazine	Quart	4.68	3.00	14	3.00	14	3.00	14	3.00	14	3.00	14	3.00	14	
Insecticides:				**338**		**370**		**370**		**370**		**370**		**370**	
Danitol 2.4 EC	FlOz	4.06		-	2.00	8	2.00	8	2.00	8	2.00	8	2.00	8	
Esteem	FlOz	9.92	15.00	149	15.00	149	15.00	149	15.00	149	15.00	149	15.00	149	
Abamectin	FlOz	1.19	20.00	24	20.00	24	20.00	24	20.00	24	20.00	24	20.00	24	
Omni Supreme Oil	Gal	12.00	12.00	144	14.00	168	14.00	168	14.00	168	14.00	168	14.00	168	
Actara	FlOz	4.33	5.00	22	5.00	22	5.00	22	5.00	22	5.00	22	5.00	22	

UC COOPERATIVE EXTENSION AND AGRICULTURAL ISSUES CENTER

Table 2. CONTINUED

Ventura County-2020

			Est/Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Your Costs
									Total Per Acre						
	Unit	$/Unit	units	$	units	$	units	$	units	$	units	$	units	$	
Fungicides:				**-**		**-**		**8**		**8**		**8**		**8**	
Copper Sulfate	Lbs.	2.68		-		-	3.00	8	3.00	8	3.00	8	3.00	8	
Vertebrate:				**37**		**37**		**37**		**37**		**37**		**37**	
Vertebrate Pest Control	Acre	37.14	1.00	37	1.00	37	1.00	37	1.00	37	1.00	37	1.00	37	
Irrigation:				**100**		**300**		**450**		**500**		**625**		**750**	
Water	AcIn	25.00	4.00	100	12.00	300	18.00	450	20.00	500	25.00	625	30.00	750	
Custom:				**313**		**163**		**2,028**		**3,247**		**5,047**		**6,899**	
Survey/Mark Grove	Acre	125.00	1.00	125		-		-		-		-		-	
Irrigation System Layout	Acre	55.00	1.00	55		-		-		-		-		-	
Contract: Pesticide Application	Acre	30.00	3.00	90	4.00	120	5.00	150	5.00	150	5.00	150	5.00	150	
Contract: Spot Spray	Acre	4.60	1.00	5	1.00	5	1.00	5	1.00	5	1.00	5	1.00	5	
Pick/Haul	Carton	3.34		-		-	245.00	818	408.00	1,363	648.00	2,164	894.99	2,989	
Sort/Pack	Carton	5.19		-		-	196.00	1,017	325.99	1,692	518.40	2,690	716.16	3,717	
PCA Services	Acre	38.00	1.00	38	1.00	38	1.00	38	1.00	38	1.00	38	1.00	38	
Assessments:				**-**		**-**		**22**		**45**		**71**		**98**	
CPDPP	Carton	0.08		-		-	196.00	16	408.00	33	648.00	52	895.00	72	
State Marketing Order	Carton	0.03		-		-	196.00	6	408.00	12	648.00	19	895.00	27	
Labor:				**479**		**479**		**393**		**451**		**740**		**740**	
Equipment Operator Labor	Hr.	26.70	3.60	96	3.60	96	3.60	96	3.60	96	3.60	96	3.60	96	
Irrigation Labor	Hr.	19.28	14.87	287	14.88	287	7.42	143	7.42	143	7.42	143	7.42	143	
Pruning Labor	Hr.	19.28	5.00	96	5.00	96	8.00	154	11.00	212	26.00	501	26.00	501	
Machinery:				**34**		**34**		**34**		**34**		**32**		**34**	
Fuel-Gas	Gal	3.20	7.50	24	7.50	24	7.50	24	7.50	24	7.63	24	7.50	24	
Fuel-Diesel	Gal	2.92	0.00	-	-	-	-	-	0.00	-	0.00	-	0.00	-	
Lube				4		4		4		4		4		4	
Machinery Repair				6		6		6		6		4		6	
Interest on Operating Capital @ 5.25%				180		67		90		106		136		154	
TOTAL OPERATING COSTS/ACRE				**5,716**		**2,172**		**4,098**		**5,478**		**7,764**		**9,808**	

UC COOPERATIVE EXTENSION AND AGRICULTURAL ISSUES CENTER

TABLE 3. COSTS PER ACRE TO PRODUCE EUREKA LEMONS

Ventura County-2020

Operation	Equipment Time (Hrs./Ac)	Cash and Labor Costs per Acre: Labor Cost	Fuel	Lube & Repairs	Material Cost	Custom/ Rent	Total Cost	Your Cost
Cultural:								
Frost Protection	0.00	0	0	0	546	0	546	
Winter Pesticide Application	0.00	0	0	0	105	30	135	
Fertilizer: UAN32 3x	0.00	0	0	0	62	0	62	
Fertilizer: Urea/Potassium	0.00	0	0	0	97	0	97	
Prune	0.00	501	0	0	0	0	501	
Irrigation: Water & labor	0.00	143	0	0	750	0	893	
Summer Pesticide Application	0.00	0	0	0	293	30	323	
Weeds: Spot Spray	0.00	0	0	0	19	5	24	
Fall Pesticide Application	0.00	0	0	0	46	30	76	
Weeds: Pre-emergence	0.00	0	0	0	14	30	44	
Truck: Pick-Up	2.08	67	17	8	0	0	91	
UTV	1.00	32	8	2	0	0	42	
Vertebrate Pests: Gophers	0.00	0	0	0	37	0	37	
PCA Services	0.00	0	0	0	0	38	38	
TOTAL CULTURAL COSTS	3.08	743	25	10	1,969	163	2,909	
Harvest:								
Pick and Haul	0.00	0	0	0	0	3,399	3,399	
Sort and Pack	0.00	0	0	0	0	4,225	4,225	
Assessments: CPDPP/CRB	0.00	0	0	0	112	0	112	
TOTAL HARVEST COSTS	0.00	0	0	0	112	7,624	7,736	
Interest on Operating Capital at 5.25%							150	
TOTAL OPERATING COSTS/ACRE	3.08	743	25	10	2,081	7,786	10,797	
CASH OVERHEAD:								
Office Expense							150	
Liability Insurance							22	
Field Sanitation							18	
Food Safety/GAP							38	
Leaf Analysis							9	
Soil Analysis							10	
Irrigation Waiver Fee							16	
Property Taxes							879	
Property Insurance							78	
Investment Repairs							73	
TOTAL CASH OVERHEAD COSTS/ACRE							1,292	
TOTAL CASH COSTS/ACRE							12,089	
NON-CASH OVERHEAD:		Per Producing Acre		Annual Cost Capital Recovery				
Wind Machines		1,042		64			64	
Shop Building		200		12			12	
Shop Tools		160		13			13	
Drip Irrigation (48 Acres)		2,052		127			127	
Land (50 Acres)		80,000		4,400			4,400	
Fuel Tanks		210		13			13	
Grove Establishment (48 Acres)		11,623		742			742	
Equipment		244		27			27	
TOTAL NON-CASH OVERHEAD COSTS		95,531		5,398			5,398	
TOTAL COSTS/ACRE							17,487	

UC COOPERATIVE EXTENSION AND AGRICULTURAL ISSUES CENTER

TABLE 4. COSTS AND RETURNS PER ACRE TO PRODUCE EUREKA LEMONS

Ventura County-2020

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Eureka Lemon (Packed)	1,018	Carton	16.42	16,709	
TOTAL GROSS RETURNS				16,709	
OPERATING COSTS					
Frost Protection:				**546**	
Wind Machine	1.00	Acre	546.00	546	
Fertilizer:				**159**	
UAN-32	111.60	lb. N	0.56	62	
Potassium Thiosulfate (0-0-25)	50.00	Gal	1.22	61	
Urea-Low Biuret (46%)	74.40	lb. N	0.48	36	
Herbicides:				**33**	
Roundup PowerMax	5.60	Pint	3.45	19	
Simazine	3.00	Quart	4.68	14	
Insecticides:				**443**	
Danitol 2.4 EC	20.00	FlOz	4.06	81	
Omni Supreme Oil	14.00	Gal	12.00	168	
Esteem	15.00	FlOz	9.92	149	
Abamectin	20.00	FlOz	1.19	24	
Actara	5.00	FlOz	4.33	22	
Vertebrate:				**37**	
Vertebrate Pest Control	1.00	Acre	37.14	37	
Irrigation:				**750**	
Water	30.00	AcIn	25.00	750	
Custom:				**7,786**	
Contract: Pesticide Application	4.00	Acre	30.00	120	
Contract: Spot Spray	1.00	Acre	4.60	5	
Pick and Haul	1,018.00	Carton	3.34	3,399	
Sort and Pack	814.00	Carton	5.19	4,225	
PCA Services	1.00	Acre	38.00	38	
Assessments:				**112**	
CPDPP	1,018.00	Carton	0.08	81	
State Marketing Order (CRB)	1,018.00	Carton	0.03	31	
Labor:				**743**	
Equipment Operator Labor	3.70	Hrs.	26.70	99	
Pruning Labor	26.00	Hrs.	19.28	501	
Irrigation Labor	7.42	Hrs.	19.28	143	
Machinery:				**34**	
Fuel-Gas	7.71	Gal	3.20	25	
Fuel-Diesel	0.00	Gal	2.92	0	
Lube				4	
Machinery Repair				6	
Interest on Operating Capital @ 5.25%				152	
TOTAL OPERATING COSTS/ACRE				10,797	
TOTAL OPERATING COSTS/CARTON				10.61	
NET RETURNS ABOVE OPERATING COSTS				5,912	

UC COOPERATIVE EXTENSION AND AGRICULTURAL ISSUES CENTER

TABLE 4. CONTINUED

Ventura County-2020

Operation	Cost/Acre ($)	Your Costs
CASH OVERHEAD COSTS		
Office Expense	150	
Liability Insurance	22	
Field Sanitation	18	
Food Safety/GAP	38	
Leaf Analysis	9	
Soil Analysis	10	
Irrigation Waiver Fee	16	
Property Taxes	879	
Property Insurance	78	
Investment Repairs	73	
TOTAL CASH OVERHEAD COSTS/ACRE	1,292	
TOTAL CASH OVERHEAD COSTS/CARTON	1.27	
TOTAL CASH COSTS/ACRE	12,089	
TOTAL CASH COSTS/CARTON	11.88	
NET RETURNS ABOVE CASH COSTS	4,620	
NON-CASH OVERHEAD COSTS (Capital Recovery)		
Wind Machines	64	
Shop Building	12	
Shop Tools	13	
Drip Irrigation (48 Acres)	127	
Land (50 Acres)	4,400	
Fuel Tanks	13	
Grove Establishment (48 Acres)	742	
Equipment	27	
TOTAL NON-CASH OVERHEAD COSTS/ACRE	5,398	
TOTAL NON-CASH OVERHEAD COSTS/CARTON	5.30	
TOTAL COST/ACRE	17,487	
TOTAL COST/CARTON	17.18	
NET RETURNS ABOVE TOTAL COST	-779	

UC COOPERATIVE EXTENSION AND AGRICULTURAL ISSUES CENTER

TABLE 5. MONTHLY COSTS PER ACRE TO PRODUCE EUREKA LEMONS

Ventura County-2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Cultural:													
Frost Protection	186										180	180	546
Winter Pesticide Application	135												135
Fertilizer: UAN32 3x			21	21	21								62
Fertilizer: Urea/Potassium				97									97
Prune				501									501
Irrigation: Water & labor				128	128	128	128	128	128	128			893
Summer Pesticide Application							323						323
Weeds: Spot Spray								24					24
Fall Pesticide Application										76			76
Weeds: Pre-emergence											44		44
Truck: Pick-Up	8	8	8	8	8	8	8	8	8	8	8	8	91
UTV	3	3	3	3	3	3	3	3	3	3	3	3	42
Vertebrate Pests: Gophers	3	3	3	3	3	3	3	3	3	3	3	3	37
PCA Services	3	3	3	3	3	3	3	3	3	3	3	3	38
TOTAL CULTURAL COSTS	338	17	38	764	166	145	468	169	145	221	242	198	2,909
Harvest:													
Pick and Haul										1,133	1,133	1,133	3,399
Sort and Pack										1,408	1,408	1,408	4,225
Assessments: CPDPP/CRB												112	112
TOTAL HARVEST COSTS	0	0	0	0	0	0	0	0	0	2,541	2,541	2,653	7,736
Interest on Operating Capital @5.25%	1.48	1.56	1.72	5.06	5.79	6.42	8.47	9.21	9.84	21.92	34.10	46.57	152.14
TOTAL OPERATING COSTS/ACRE	340	19	40	769	172	151	476	178	155	2,784	2,817	2,897	10,797
CASH OVERHEAD													
Office Expense	13	13	13	13	13	13	13	13	13	13	13	13	150
Liability Insurance	2	2	2	2	2	2	2	2	2	2	2	2	22
Field Sanitation												18	18
Food Safety/GAP												38	38
Leaf Analysis									9				9
Soil Analysis									10				10
Irrigation Waiver Fee									16				16
Property Taxes		440					440						879
Property Insurance		39					39						78
Investment Repairs	6	6	6	6	6	6	6	6	6	6	6	6	73
TOTAL CASH OVERHEAD COSTS	20	499	20	20	20	20	499	20	55	20	20	76	1,292
TOTAL CASH COSTS/ACRE	360	518	60	789	192	172	975	198	210	2,804	2,837	2,973	12,089

UC COOPERATIVE EXTENSION AND AGRICULTURAL ISSUES CENTER

TABLE 6. RANGING ANALYSIS

Ventura County-2020

COSTS PER ACRE AND PER CARTON AT VARYING YIELDS TO PRODUCE EUREKA LEMON

	YIELD (CARTONS)						
	643	768	893	1,018	1,143	1,268	1,393
OPERATING COSTS/ACRE:							
Cultural	2,909	2,909	2,909	2,909	2,909	2,909	2,909
Harvest	4,885	5,835	6,786	7,736	8,686	9,636	10,587
Interest on Operating Capital @ 5.25%	127.38	135.64	143.89	152.14	160.40	168.65	176.91
TOTAL OPERATING COSTS/ACRE	7,921	8,880	9,838	10,797	11,755	12,714	13,672
TOTAL OPERATING COSTS/CARTON	12.33	11.57	11.02	10.61	10.29	10.03	9.82
CASH OVERHEAD COSTS/ACRE	1,292	1,292	1,292	1,292	1,292	1,292	1,292
TOTAL CASH COSTS/ACRE	9,214	10,172	11,131	12,089	13,048	14,006	14,965
TOTAL CASH COSTS/CARTON	14.34	13.25	12.47	11.88	11.42	11.05	10.75
NON-CASH OVERHEAD COSTS/ACRE	5,398	5,398	5,398	5,398	5,398	5,398	5,398
TOTAL COSTS/ACRE	14,611	15,570	16,528	17,487	18,445	19,404	20,362
TOTAL COSTS/CARTON	22.74	20.28	18.52	17.18	16.14	15.31	14.62

Net Return per Acre Above Operating Costs for Eureka Lemon

PRICE ($/carton)	YIELD (carton/acre)						
Eureka Lemon (Packed)	643	768	893	1,018	1,143	1,268	1,393
10.42	-1,226	-882	-538	-194	150	494	838
12.42	60	654	1,248	1,842	2,436	3,030	3,624
14.42	1,345	2,189	3,033	3,877	4,721	5,565	6,409
16.42	2,630	3,724	4,818	5,912	7,006	8,100	9,194
18.42	3,915	5,259	6,603	7,947	9,291	10,635	11,979
20.42	5,200	6,794	8,388	9,982	11,576	13,170	14,764
22.42	6,486	8,330	10,174	12,018	13,862	15,706	17,550

Net Return per Acre Above Cash Costs for Eureka Lemon

PRICE ($/carton)	YIELD (carton/acre)						
Eureka Lemon (Packed)	643	768	893	1,018	1,143	1,268	1,393
10.42	-2,518	-2,174	-1,830	-1,486	-1,142	-798	-454
12.42	-1,233	-639	-45	549	1,143	1,737	2,331
14.42	53	897	1,741	2,585	3,429	4,273	5,117
16.42	1,338	2,432	3,526	4,620	5,714	6,808	7,902
18.42	2,623	3,967	5,311	6,655	7,999	9,343	10,687
20.42	3,908	5,502	7,096	8,690	10,284	11,878	13,472
22.42	5,193	7,037	8,881	10,725	12,569	14,413	16,257

Net Return per Acre Above Total Costs for Eureka Lemon

PRICE ($/carton)	YIELD (carton/acre)						
Eureka Lemon (Packed)	643	768	893	1,018	1,143	1,268	1,393
10.42	-7,916	-7,572	-7,228	-6,884	-6,540	-6,196	-5,852
12.42	-6,630	-6,036	-5,442	-4,848	-4,254	-3,660	-3,066
14.42	-5,345	-4,501	-3,657	-2,813	-1,969	-1,125	-281
16.42	-4,060	-2,966	-1,872	-778	316	1,410	2,504
18.42	-2,775	-1,431	-87	1,257	2,601	3,945	5,289
20.42	-1,490	104	1,698	3,292	4,886	6,480	8,074
22.42	-204	1,640	3,484	5,328	7,172	9,016	10,860

UC COOPERATIVE EXTENSION AND AGRICULTURAL ISSUES CENTER

TABLE 7. ANNUAL EQUIPMENT, INVESTMENT AND BUSINESS OVERHEAD COSTS

Ventura County-2020

ANNUAL EQUIPMENT COSTS

					Cash Overhead		
Description	Price	Yrs. Life	Salvage Value	Capital Recovery	Insurance	Taxes	Total
Pickup Truck ½-Ton	35,000	10	10,338	3,840	20	227	4,087
UTV	8,500	10	3,249	875	5	59	939
TOTAL	43,500	-	13,588	4,716	25	285	5,026
60% of New Cost*	26,100	-	8,153	2,829	15	171	3,016

*Used to reflect a mix of new and used equipment

ANNUAL INVESTMENT COSTS

					Cash Overhead			
Description	Price	Yrs. Life	Salvage Value	Capital Recovery	Insurance	Taxes	Repairs	Total
INVESTMENT								
Wind Machines	50,000	40	3,500	3,090	24	268	1,000	4,382
Shop Building	10,000	40	700	618	5	54	200	876
Shop Tools	8,000	20	560	653	4	43	160	860
Drip Irrigation (48 Acres)	98,500	40	6,895	6,088	47	527	1,970	8,632
Land (50 Acres)	4,000,000	40	4,000,000	220,000	3,544	40,000	0	263,544
Fuel Tanks (2)	10,500	40	735	649	5	56	210	920
Grove Establishment (48 Acres)	557,904	37	0	35,594	247	2,790	0	38,631
TOTAL INVESTMENT	4,734,904	-	4,012,390	266,693	3,875	43,736	3,540	317,845

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Price/ Unit	Units	Total Cost
Office Expense	48	Acre	150.00	7,200
Liability Insurance	48	Acre	21.84	1,092
Field Sanitation	48	Arce	17.50	840
Food Safety/GAP	48	Acre	38.00	1,824
Leaf Analysis	48	Acre	8.66	416
Soil Analysis	48	Acre	9.50	456
Irrigation Waiver Fee	48	Acre	16.26	780

UC COOPERATIVE EXTENSION AND AGRICULTURAL ISSUES CENTER

TABLE 8. OPERATIONS WITH EQUIPMENT & MATERIALS

Ventura County-2020

Operation	Operation Month	Implement	Labor Type/ Material	Rate/ acre	Unit
Frost Protection	Jan		Wind Machine	0.34	Acre
	Nov		Wind Machine	0.33	Acre
	Dec		Wind Machine	0.33	Acre
Winter Pesticide Application	Jan		Danitol 2.4 EC	20.00	FlOz
			Omni Supreme Oil	2.00	Gal
			Contract Application	1.00	Acre
Fertilizer: UAN32	Mar		UAN-32	37.20	lb. N
	Apr		UAN-32	37.20	lb. N
	May		UAN-32	37.20	lb. N
Fertilizer: Urea/Potassium	Apr		Potassium Thiosulfate (0-0-25)	50.00	Gal
			Urea-Low Biuret (46%)	74.40	lb. N
Prune	Apr		Pruning Labor	26.00	Hours
Irrigation	Apr		Irrigation Labor	1.06	Hours
			Water	4.29	AcIn
	May		Irrigation Labor	1.06	Hours
			Water	4.29	AcIn
	June		Irrigation Labor	1.06	Hours
			Water	4.29	AcIn
	July		Irrigation Labor	1.06	Hours
			Water	4.29	AcIn
	Aug		Irrigation Labor	1.06	Hours
			Water	4.29	AcIn
	Sept		Irrigation Labor	1.06	Hours
			Water	4.29	AcIn
	Oct		Irrigation Labor	1.06	Hours
			Water	4.29	AcIn
Summer Pesticide Application	July		Esteem	15.00	FlOz
			Abamectin	20.00	FlOz
			Omni Supreme Oil	10.00	Gal
			Contract Application	1.00	Acre
Weeds: Spot Spray	Aug		Roundup PowerMax	5.60	Pint
			Contract: Spot Spray	1.00	Acre
Fall Pesticide Application	Oct		Actara	5.00	FlOz
			Omni Supreme Oil	2.00	Gal
			Contract Application	1.00	Acre
Weeds: Pre-emergence	Nov		Simazine	3.00	Quart
			Contract Application	1.00	Acre
Truck: Pick-Up	Nov	Pickup Truck ½-Ton	Equipment Operator Labor	2.50	Hours
UTV	Nov	UTV	Equipment Operator Labor	1.20	Hours
Vertebrate Pests: Gophers	Nov		Vertebrate Pest Control	1.00	Acre
PCA Services	Nov		PCA Services	1.00	Acre
Pick and Haul	Oct		Pick and Haul	339.20	Carton
	Nov		Pick and Haul	339.20	Carton
	Dec		Pick and Haul	339.20	Carton
Sort and Pack	Oct		Sort and Pack	271.36	Carton
	Nov		Sort and Pack	271.36	Carton
	Dec		Sort and Pack	271.36	Carton