
UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

2006

**SAMPLE COSTS TO PRODUCE
ENGLISH WALNUTS**

**ON
100, 20, AND 5 ACRE ORCHARDS**

**IN THE
SACRAMENTO VALLEY
SUTTER AND YUBA COUNTIES**

Janine K. Hasey

Karen M. Klonsky

Richard L. De Moura

UC Cooperative Extension Farm Advisor, Sutter and Yuba Counties

Extension Specialist, Department of Agricultural and Resource Economics, UC
Davis

Staff Research Associate, Department of Agricultural and Resource Economics UC
Davis

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

SAMPLE COST TO PRODUCE WALNUTS ON 100, 20 and 5 ACRE ORCHARDS SACRAMENTO VALLEY - Sutter and Yuba Counties 2006

CONTENTS

INTRODUCTION.....	2
ASSUMPTIONS	3
REFERENCES.....	9
Table 1. TOTAL WALNUT COSTS & RETURNS FOR 100, 20, & 5 ACRE ORCHARDS.....	10
Table 2. PER ACRE WALNUT COSTS & RETURNS FOR 100, 20, & 5 ACRE ORCHARDS	11
Table 3. LABOR & FUEL COSTS FOR 100, 20, & 5 ACRE ORCHARDS	12
Table 4. WHOLE FARM EQUIPMENT, INVESTMENTS & BUSINESS OVERHEAD COSTS.....	12

INTRODUCTION

Sample costs to produce English walnuts on 100, 20, and 5 acre farms in the Sacramento Valley – Sutter and Yuba counties are presented in this study. It is assumed that the entire acreage is planted to walnuts. The five and 20 acre farms are contiguous and referred to as homesites or ranchettes. These sites are priced per site rather than per acre as is done for farm land. The large or in this case the 100 acre farm may be contiguous or non-contiguous consisting of fields of various sizes, such as 20 acres or larger and/or smaller. Production operations in this study are based on the 2002 study, *Sample Costs to Establish a Walnut Orchard and Produce Walnuts, Sacramento Valley*. The study was updated with current information. Additional information was collected from small growers (those owning and producing walnuts on 20 acres of land or less), custom equipment operators, farm managers/consultants, handlers, and processors. Interviews were conducted by telephone with approximately 20 individuals in these groups. Another 10 were contacted but were not available at the time or did not return the calls. Most of the sources wanted to remain anonymous and also not have their information disclosed. Grower listings were provided by the Agricultural Commissioner’s office. Growers contacted were from Sutter and Yuba counties. Handlers, processors and custom operators contacted were from the Sutter-Yuba area, the Central Coast, and northern San Joaquin Valley.

The question presented to the small grower of 20 acres and less is “How is your orchard work done?”. All of the small growers interviewed stated that the farm was not their main source of income and that the work on the farm was done by the grower and/or the family. The growers were either retired or had full time off-farm jobs. In cases where the grower may be getting behind, local or contract labor may be hired for a few days. One of the reasons stated for not having direct hired labor is to avoid workman’s compensation costs. Operations normally done by the small grower (20 acres or less) are planting, pruning, hauling the prunings out of the orchard and burning, weed spraying by hand or with a homemade or purchased weed sprayer. Otherwise, operations are coordinated with a neighbor (larger farmer) and done by borrowing the neighbor’s equipment or hiring the neighbor to do the job. Some small growers may have an old tractor and a few implements to do a few cultural operations, but most do not have spray or harvest equipment. Therefore, pesticide spraying and harvesting are commonly coordinated with the neighbor who has spray and maybe harvest equipment. If the neighbor uses custom operators for services such as spraying and harvesting, the small grower or the spraying and/or harvesting company coordinates the operations with the neighbor. A couple of growers, having approximately 20 acres, purchased used equipment, to do their cultural operations, including spraying.

Many small farms have been around a long time and the custom operators, handlers, and processors are willing to continue working with these growers, but refuse new five acre growers. The operators, handlers, and processors indicate that it is not profitable for them to deal with the five acre grower. For 20 acre growers, the problems are pretty similar as the five acre, except that the handler or processor in most cases will review each situation separately. The grower with average or above yields and well maintained orchards has a good chance to be accepted by the handler. Some of the concerns or issues with the small grower are that the grower is depending upon others for services; therefore, the orchard is not taken care of properly, resulting in many sticks in the harvested nuts, decreased yields, high cleanout because of poor quality, and extra handling. The orchard may not be of primary concern because it doesn't provide the grower's main income. A common issue expressed by the custom sprayers, custom harvesters, and those doing cultural operations, is that these farms usually do not have enough open space for turning the equipment around in the yard or row ends, loading and unloading the equipment (tractors, sprayers, mowers, shakers, etc.), parking and loading the bulk trailers for harvesting, and for general equipment movement. The trees may be planted too close to a fence or building to work around.

Handlers, processors, and custom operators maintain certain standards for accepting growers based on economic considerations. Most will continue to deal with long time small growers, but prefer or will not accept work from a new five acre grower. Currently, the 20 acre grower is a case by case basis. Also, most custom operators have a minimum charge for the operation, which can be prohibitive to a small grower including the 20 acre grower. In addition to minimum charges, some have a minimum acreage limitation. For the custom operator, there is the cost to deliver and setup the equipment, application or operation and cleanup time. In this report, we assume a minimum charge by a custom operator of \$500 per farm for all operations except harvest which is \$1,500. Handlers, because of the extra work in dealing with small lots, typically charge a higher fee for small acreage and/or low total farm tonnage. Each handler had their own pricing structure for this situation.

It appears that as new small growers come on line, the economics to own equipment, hire custom work, and market their product through processors will be nearly impossible. The minimum charges for custom work and the refusal by handlers and processors to accept their product may make it impossible to have a viable economic unit in 20 acres or less. Different custom operators have different minimums; some base it on minimum charges only and some on a combination of minimum charges and minimum acreage. Minimum acreages mentioned in this survey were 25 acres and 35 acres. One handler even mentioned that 50 acres was considered small, but did not list it as a minimum.

ASSUMPTIONS

The following assumptions refer to tables 1, 2 and 3 and pertain to sample costs to produce walnuts on 100, 20, and 5 acre farms in Sutter and Yuba counties. Production practices in this report are based on the *Sample Costs to Establish a Walnut Orchard and Produce Walnuts in the Sacramento Valley, 2002*. The production practices described represent production practices considered typical for a well managed farm in the region. Timing of and types of cultural practices will vary among growers within the regions and from season to season due to variables such as weather, soil and insect and disease pressure. The practices and inputs used in the cost study serve as a guide only.

Farm. The hypothetical farms consist of 100, 20, and 5 contiguous acres farmed by the owner and/or family. It is assumed that the entire acreage is planted to walnut orchards. Roads and homestead are not taken into account.

Trees. No specific variety of English walnuts is planted in this study. Cultivars typically planted in the Sacramento Valley include Chandler, Hartley, Tulare, and Howard. Most orchards will include a small percentage of a second variety to insure pollen shedding and bloom period overlaps. Paradox is the common rootstock on these varieties. The variety planted determines spacing. In this study, the 5/8 inch 2 year old trees are planted on 28' X 28' spacing, 56 trees per acre. The life of the orchard at planting is estimated to be 35 years.

Pruning. Pruning to open the canopy, maintain healthy buds, lower tree height, remove dead and undesired limbs is done during the winter months.

100 Acres: Pruning is done in alternate years using hand crews and a pruning tower. Prunings are placed in the row middles, pushed to the orchard edge with a tractor and brush rake and burned. One-half of the pruning costs are charged to the orchard each year.

20 and 5 Acres: The pruning is done in alternate years or on alternate halves of the orchard each year. The pruning is done mainly by the grower, using pruners on long poles. The prunings are hauled to edge of the orchard. In this report, we assume the grower uses an ATV and trailer to haul the prunings out for burning. One-half of the pruning costs are charged to the orchard each year.

Fertilization. Tree nutrient status is determined by leaf analysis by the sampling done in July. One sample per 25 acres is taken in the 100 acre orchard and one each in the 20 and 5 acre orchards. The nitrogen as UN 32 is applied through the sprinkler irrigation system in equal amounts in April and August.

Irrigation. The crop uses 42-acre inches of water which the grower applies. In this study, water is calculated to cost \$56.04 per acre-foot or \$4.67 per acre-inch based on current PG&E pumping charges.

Pest Management. Written recommendations are required for many pesticides and are made by licensed pest control advisors (PCA). In addition, the PCA monitors the field for pests and nutrition. Growers may hire private PCA's or receive the service as part of a service agreement with an agricultural chemical and fertilizer company. A cost for a PCA is included in the study. Pesticide prices used in this report are taken from a single dealer and shown as full retail. The 100 acre grower would most likely receive a volume discount, but this is not taken into account.

Vertebrate Pests. Gophers are controlled with rodent bait applied by moving around the field on the ATV.

Weeds. Weeds are controlled in the tree row with winter and in-season strip sprays. Goal, Surflan and Roundup are applied in November (winter strip spray). Roundup is applied during the growing season (inseason strip spray). Row middles are mowed five times from April through August.

100 acres: 100 acre grower applied the herbicides with a tractor and sprayer and also uses his own equipment for mowing.

20 and 5 acres: All herbicides are applied by the grower using an ATV with sprayer. The growers use custom services for mowing. A minimum charge of \$500 per mowing or \$2,500 for the five mowings applies.

Insects and Diseases. Two treatments are assumed for codling moth, Lorsban is applied in June and Asana in July. Husk Fly, aphids, scale, and mites will not occur every year, but for purposes of this study, one

treatment per year is considered necessary. Different materials are required to control each pest. Omite is applied in July for mites and represents an average cost for controlling the above insects or mites. Walnut Blight is a spring disease that infects the nutlets and is the only disease treated in this study. Three treatments, two in April and one in May, with Kocide, a copper compound, and Manex are applied.

100 acres: Materials are applied with grower owned equipment.

20 and 5 acres: The materials are custom applied. Minimum charges apply to all application services. Minimum charges will vary, but for this study \$500 per application plus materials is used.

Harvest. The walnuts are shaken from the trees, harvested and hauled to the huller/dryer by custom operators. Hand raking is needed to windrow walnuts missed by the sweeper. In this study, the grower or harvester company furnishes the hand rakers and the grower is charged accordingly.

Shake, sweep and pickup: Custom operators may charge by the pound or hour. In this study we assume that the charges are by the hour. Charges for shaking are \$100 per hour, sweeping \$45 per hour, and pickup \$120 per hour. We assume that at a yield of 2.5 tons per acre will take one-half hour to shake, one-half hour to sweep, and an hour to pickup.

100 and 20 acres: The cost per acre is \$193.

5 acres: Without a minimum charge the cost would be \$965. However, a minimum charge will exist for all custom harvesting although they vary. For this study the charge is \$1,500 per acre. This results in an additional charge of \$535 for the five acres or \$107 per acre.

Hand rake: The charge is \$16 per acre for labor and does not vary with size of operation in this study.

Hulling and Drying. Hulling and drying costs vary based on farm size or total farm yield. The basic hulling and drying costs were similar among dryers, but the price structure for low total farm tonnage and small farms varied. For this study, a slight differential is used to calculate the hulling and drying costs.

100 acres: The cost used is \$110 per ton for 250 tons (2.5 tons per acre).

20 acres: The cost used is \$115 per ton for 50 tons (2.5 tons per acre).

5 acres: The cost used is \$120 per ton for 10 tons (2.5 tons per acre).

Yields. Annual yields for English varieties are measured in clean, dry, in-shell tons or pounds per acre. The yield in this study is taken from the Sutter County Annual Crop Report. The yield used in this study, 2.5 tons per acre, is a five year average increased by 50% to represent yields from a well managed orchard.

Returns. Actual price depends on a number of factors such as demand, size of the state crop, variety, nut size, and quality. A five year average price of \$0.61 per pound based on the Sutter County Annual Crop Report is used in this study to determine income.

Pickup/ATV. It is assumed that all growers own an ATV, although this question was not asked in the survey. The ATV is used for weed control on the small farms and is included in those costs when applicable. It

is also used to collect leaf samples, bait gophers on all farms and is included in those costs. The line item is for general use such as checking the orchard and irrigation system. A pickup is used for business on the ranch and for some off ranch business except on the five acre farm. Estimated costs are shown for the 100 and 20 acre farms only.

Labor. Hourly wages for workers are \$10.50 for skilled labor and \$7.50 per hour for unskilled. Adding 38% for the employer's share of federal and state payroll taxes, insurance, and other possible benefits gives the labor rates shown of \$14.49 per hour for skilled labor, and \$10.35 per hour for unskilled labor.

Equipment Operating Costs. Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by ASAE. Fuel and lubrication costs are also determined by ASAE equations based on maximum PTO horsepower, and fuel type. Prices for on-farm delivery of diesel and gasoline are \$2.00 and \$2.55 per gallon, respectively. On farm delivery prices vary by volume and delivery – bobtail truck or tanker truck. Discount fuel prices may not be available for the five and 20 acre farms.

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 9.25% 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 for this study is considered a typical lending rate by a farm lending agency as of January 2006.

Overhead

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, and equipment repairs. Employee benefits, insurance, and payroll taxes are included in labor costs and not in overhead (see Labor).

Property Taxes. Counties charge a base property tax rate of 1% on the assessed value of the property. In some counties special assessment districts exist and charge additional taxes on property including equipment, buildings, and improvements. For this study, county taxes are calculated as 1% 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 provides coverage for property loss and is charged at 0.70% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs vary by farm size.

Office Expense. Office and business expenses are estimated. These expenses include office supplies, telephones, bookkeeping, accounting, legal fees, road maintenance, shop and office utilities and miscellaneous administrative costs.

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 walnut trees through the first year nuts are harvested less returns from production. Establishment costs are amortized beginning in the fifth year over the remaining 31 years of production. No establishment costs are calculated in this study. Due to minimum charges by custom operators, the per acre establishment cost would be considerably higher for the 5 and 20 acre farms than the 100 acre farm.

Investment Repairs. Costs are calculated as 2% of the purchase price on investments.

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

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

Salvage Value. Salvage value is an estimate of the remaining value of an investment at the end of its useful life. For farm machinery (tractors and implements) the remaining value is a percentage of the new cost of the investment (Boehlje and Eidman). The percent remaining value is calculated from equations developed by the American Society of Agricultural Engineers (ASAE) based on equipment type and years of life. The life in years is estimated by dividing the wear out life, as given by ASAE by the annual hours of use in this operation. For other investments including irrigation systems, buildings, and miscellaneous equipment, the value at the end of its useful life is zero. The salvage value for land is the purchase price because land does not depreciate. The purchase price and salvage value for equipment and investments are shown in Table 5.

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

Interest Rate. The interest rate of 6.25% used to calculate capital recovery cost. The rate will vary depending upon the loan amount and other lending agency conditions, but is the basic suggested rate by a farm lending agency as of January 2006.

Land. Values for bare land (vegetable and field crop land) ranges from \$2,500 to \$6,500 per acre. For this study, the land value used for the 100 acre farm is \$3,250 per acre. Rural residential ranged from \$200,000 to \$500,000 per site. A 20 acre site at \$350,000 per site equals \$17,500 per acre and a five acre site at \$250,000 per site equals \$50,000 per acre. Five acre sites are not zoned in Sutter and Yuba counties, so no official prices are available (per real estate agent).

Buildings. Metal building(s) on a cement slab total approximately 2,400 square feet. The buildings are used for shops and equipment storage. The building is located on the 100 acre farm. The small growers that owned some equipment had a small (small not defined) building for a shop. No cost is shown for buildings on the small farms.

Irrigation System. The irrigation system is a micro irrigation system commercially installed in the orchard. Some of the small growers indicated that they attempted all or a portion of the installation; but for this

study a commercial installation is assumed. Water is pumped to the orchard, after running through a filtration station, into the micro sprinkler system. For this study, a pump and well already existed.

Fuel Tanks. Two 500-gallon fuel tanks are placed on stands in cement containment meeting Federal, State, and local regulations on the 100 acre farm. Fuel is delivered to the equipment by gravity feed. No fuel is delivered to the 5 and 20 acre farms.

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

Equipment Costs. 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.

REFERENCES

- Agricultural Commissioner. 2006. Annual Crop Reports, 2001, 2002, 2003, 2004, 2005. Sutter County, Yuba, CA.
- American Society of Agricultural Engineers. (ASAE). 1992. *American Society of Agricultural Engineers Standards Yearbook*. St. Joseph, MO.
- Boehlje, Michael D., and Vernon R. Eidman. 1984. *Farm Management*. John Wiley and Sons. New York, NY.
- Buchner, Richard, John Edstrom, Janine Hasey, Bill Krueger, Bill Olson, Wilbur Reil, Karen Klonsky, and Richard L. De Moura. 2002. *Sample Costs to Establish and Produce Walnuts, Sacramento Valley*. University of California, Cooperative Extension. Department of Agricultural and Resource Economics. Davis, CA.
- California Chapter of the American Society of Farm Managers and rural Appraisers. *Trends In Agricultural Land and Lease Values*. 2005. Woodbridge. CA
- Integrated Pest Management Education and Publications. "UC IPM Pest Management Guidelines: Walnut". In M. L. Flint (ed.) *UC IPM Pest Management Guidelines*. University of California. Division of Agriculture and Natural Resources. Oakland, CA. Publication 3339.
- Ramos, David E. (ed.). *Walnut Production Manual*. University of California, Division of Agricultural and Natural Resources. Oakland, CA. Publication 3373.
- Reil, Wilbur. 2001. *Walnut Production in Yolo and Solano Counties of California*. University of California Cooperative Extension. Woodland, CA.
- Schwankl, Larry, Terry Prichard, Blaine Hanson, Ilene Wellman. 2000. *Costs of Pressurized Irrigation Systems for Tree Crops*. University of California, Division of Agriculture and Natural Resources. Oakland, CA. Publication 21585.
-

UC COOPERATIVE EXTENSION

Table 1. TOTAL WALNUT COSTS AND RETURNS FOR 100, 20, AND 5 ACRE ORCHARDS

Sutter and Yuba Counties 2006

	Farm Size in acres:		
	100	20	5
	\$/Farm		
Walnuts: Returns 5,000 lbs x \$0.61	305,000	61,000	15,250
Prune: Alternate Years 1/2 cost	10,100	4,140	1,035
Brush Disposal	1,800	900	225
Rodents: Gopher Control	300	60	15
Weed: Mow Tree Row Middles 5X	3,600	2,500	2,500
Irrigate: (water & labor)	20,600	4,120	1,030
Disease: Spray Walnut Blight 3X	15,600	4,640	2,135
Fertilize: Nitrogen	10,000	2,000	500
Insect: Spray Codling Moth 2X	6,300	2,240	1,210
Fertilize: Leaf Analysis	200	60	45
Weed: Spray Tree Row (inseason)	1,300	220	55
Insect: Mites/Miscellaneous	5,100	1,520	705
Harvest Aide: Spray 50% of orchard	2,500	0	0
Weed: Spray Tree Row (dormant season)	5,900	1,160	295
ATV Miscellaneous Use	5,600	1,120	280
Pickup Business Use	8,200	2,300	0
PCA Service	3,000	600	150
TOTAL CULTURAL	100,100	27,580	10,180
Harvest: Shake, Sweep, Pickup	19,200	3,840	1,505
Harvest: Haul	3,800	760	190
Harvest: Hand Rake	1,600	320	80
Harvest: Dry, Hull	27,500	5,760	1,500
TOTAL HARVEST	52,100	10,680	3,275
Interest on Operating Capital @ 9.25%	4,200	1,240	450
TOTAL OPERATING COSTS/ACRE	156,400	39,500	13,905
NET RETURNS ABOVE OPERATING COSTS	148,600	21,500	1,345
Cash Overhead:			
Office Expense	5,000	1,500	1,000
Liability Insurance	500	420	430
Property Taxes	4,600	3,760	2,565
Property Insurance	900	180	45
Investment Repairs	6,100	400	95
TOTAL CASH OVERHEAD COSTS/ACRE	17,100	6,260	4,135
TOTAL CASH COSTS PER ACRE	173,500	45,760	18,040
NET RETURNS ABOVE CASH COSTS	131,500	15,240	-2,790
Non-Cash Overhead:			
Buildings 2400 sqft	7,100		
Fuel Tanks Above Ground	500		
Shop/Field Tools	1,600	520	105
Micro Sprinkler Irrigation System	5,600	1,200	300
Land	20,300	21,880	15,625
Equipment	8,700	2,720	770
TOTAL NON-CASH OVERHEAD COSTS	43,800	26,320	16,800
TOTAL COSTS PER FARM	217,300	72,080	34,840
NET RETURNS ABOVE TOTAL COSTS	87,700	-11,080	-19,590

UC COOPERATIVE EXTENSION

Table 2. WALNUT PER ACRE COSTS AND RETURNS FOR 100, 20 and 5 ACRE ORCHARDS

Sutter - Yuba Counties 2006

	Farm Size in acres:		
	100	20	5
	\$/acre		
Walnuts: Returns 5,000 lbs x \$0.61	3,050	3,050	3,050
Prune: Alternate Years 1/2 cost	101	207	207
Brush Disposal	18	45	45
Rodents: Gopher Control	3	3	3
Weed: Mow Tree Row Middles 5X	36	125	500
Irrigate: (water & labor)	206	206	206
Disease: Spray Walnut Blight 3X	156	232	427
Fertilize: Nitrogen	100	100	100
Insect: Spray Codling Moth 2X	63	112	242
Fertilize: Leaf Analysis	2	3	9
Weed: Spray Tree Row (in season)	13	11	11
Insect: Miscellaneous	51	76	141
Harvest Aide: Spray 50% of orchard	25		
Weed: Spray Tree Row (dormant season)	59	58	59
ATV Miscellaneous Use	56	56	56
Pickup Business Use	82	115	
PCA Service	30	30	30
TOTAL CULTURAL	1,001	1,379	2,036
Harvest: Shake, Sweep, Pickup	192	192	301
Harvest: Haul	38	38	38
Harvest: Hand Rake	16	16	16
Harvest: Dry, Hull	275	288	300
TOTAL HARVEST	521	534	655
Interest on Operating Capital @ 9.25%	42	62	90
TOTAL OPERATING COSTS/ACRE	1,564	1,975	2,781
Cash Overhead:			
Office Expense	50	75	200
Liability Insurance	5	21	86
Property Taxes	46	188	513
Property Insurance	9	9	9
Investment Repairs	61	20	19
TOTAL CASH OVERHEAD COSTS/ACRE	171	313	827
TOTAL CASH COSTS PER ACRE	1,735	2,288	3,608
Non-Cash Overhead:			
Buildings 2400 sqft	71		
Fuel Tanks Above Ground	5		
Shop/Field Tools	16	26	21
Micro Sprinkler Irrigation System	56	60	60
Land	203	1,094	3,125
Equipment	87	136	154
TOTAL NON-CASH OVERHEAD COSTS	438	1,316	3,360
TOTAL COSTS PER ACRE	2,173	3,604	6,968

UC COOPERATIVE EXTENSION

Table 3. LABOR AND FUEL COSTS FOR 100, 20, AND 5 ACRE ORCHARDS
SUTTER - YUBA REGION 2006

Farm Size in Acres	100				20			5		
	\$/hr*	Hrs/Acre	\$/Acre	\$/Farm	Hrs/Acre	\$/Acre	\$/Farm	Hrs/Acre	\$/Acre	\$/Farm
Labor - Machine	14.49	15.20	220	22,025	9.92	144	2,875	5.98	87	433
Labor - Non Machine	10.35	6.21	64	6,427	27.05	280	5,599	24.10	249	1,247

	\$/gal	Gal/Acre	\$/Acre	\$/Farm	Gal/Acre	\$/Acre	\$/Farm	Gal/Acre	\$/Acre	\$/Farm
Fuel - Gas	2.55	17.39	44	4,434	9.74	25	497	3.11	8	40
Fuel - Diesel	2.00	17.07	34	3,414	0.00	0	0	0.00	0	0

*includes payroll overhead

UC COOPERATIVE EXTENSION

Table 4. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS
SUTTER-YUBA COUNTIES 2006

100 ACRE			Cash Overhead						
Yr	Description	Price	Yrs. Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Total	
06	Tractor 75HP MFWD	43,500	15	8,469	4,195	182	260	4,637	
06	ATV	5,790	12	1,448	616	25	36	677	
06	Brush Rake	2,000	25	57	159	7	10	176	
06	Loader Forks	810	15	78	81	3	4	88	
06	Mower-Flail	5,000	10	500	650	19	28	697	
06	Air Blast Sprayer	21,000	10	3,714	2,609	86	124	2,819	
06	Pickup 1/2 ton	28,000	10	8,271	3,229	127	181	3,537	
06	Pruning Tower	18,324	10	1,832	2,382	71	101	2,554	
06	Weed Sprayer	4,000	10	707	497	16	24	537	
TOTAL		128,424		25,076	14,418	536	768	15,722	
60% of New Cost		77,054		15,046	8,651	322	461	9,433	

20 ACRE			Cash Overhead						
Yr	Description	Price	Yrs. Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Total	
06	ATV	5,790	12	1,448	616	25	36	677	
06	Pickup 1/2 ton	28,000	10	8,271	3,229	127	181	3,537	
06	Trailer	2,000	20	104	175	7	11	193	
06	Weed Sprayer	4,000	10	707	497	16	24	537	
TOTAL		39,790	52	10,530	4,517	175	252	4,944	
60% of New Cost		23,874		6,318	2,710	105	151	2,966	

5 ACRE			Cash Overhead						
Yr	Description	Price	Yrs. Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Total	
06	ATV	5,790	12	1,448	616	25	36	677	
06	Trailer	2,000	20	104	175	7	11	193	
06	Weed Sprayer	4,000	10	707	497	16	24	537	
TOTAL		11,790	42	2,259	1,288	48	71	1,407	
60% of New Cost		7,074		1,355	773	29	43	844	

UC COOPERATIVE EXTENSION

Table 4. continued

ANNUAL INVESTMENT COSTS

100 ACRE					<u>Cash Overhead</u>			
Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur- ance	Taxes	Repairs	Total
Buildings 2400 sqft	80,000	20		7,117	280	400	1,600	9,397
Fuel Tanks	6,514	35	1,295	452	27	39	130	648
Micro Irrigation System	70,000	25		5,607	245	350	1,400	7,602
Land	325,000	35	325,000	20,313	0	3250	0	23,563
Shop/Field Tools	15,000	15		1,570	53	75	3,000	4,698
TOTAL INVESTMENT	496,514		326,295	35,059	605	4,114	6,130	45,908

20 ACRE					<u>Cash Overhead</u>			
Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur- ance	Taxes	Repairs	Total
Micro Irrigation System	15,000	25		1,201	53	75	300	1,629
Land	350,000	35	350,000	21,875	0	3,500	0	25,375
Shop/Field Tools	5,000	15		523	18	25	100	666
TOTAL INVESTMENT	370,000		350,000	23,599	71	3,600	400	27,670

5 ACRE					<u>Cash Overhead</u>			
Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur- ance	Taxes	Repairs	Total
Micro Irrigation System	3,750	25		300	13	19	75	407
Land	250,000	35	25,000	15,625	0	2,500	0	18,125
Shop/Field Tools	1,000	15		105	4	5	20	134
TOTAL INVESTMENT	254,750		25,000	16,030	17	2,524	95	18,666

ANNUAL BUSINESS OVERHEAD COSTS

100 ACRE				
Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Liability Insurance	100	acre	5.29	529
Office Expense	100	acre	50.00	5,000

20 ACRE				
Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Liability Insurance	20	acre	21.45	429
Office Expense	20	acre	75.00	1,500

5 ACRE				
Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Liability Insurance	5	acre	85.80	429
Office Expense	5	acre	200.00	1,000