UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

2009

SAMPLE COSTS TO PRODUCE

MIXED VEGETABLES

Tomatoes, Winter Squash, Melons

Small Farm

SIERRA NEVADA FOOTHILLS
Placer & Nevada Counties

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SAMPLE COSTS TO PRODUCE MIXED VEGETABLES
Sierra Nevada Foothills, Placer/Nevada Counties 2009

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INTRODUCTION

Sample costs to produce mixed vegetables in the Sierra Nevada Foothills, Placer and Nevada Counties are presented in this study. The study is intended as a guide only, and can be used to make production decisions, determine potential returns, prepare budgets, and evaluate production loans. Practices described are based on production practices considered typical for the crop and area, but will not apply to every situation. Sample costs for labor, materials, equipment, and custom services are based on current figures. Blank columns, "Your Costs", in the Costs Per Acre to Produce and the Costs and Returns Per Acre To Produce Tables are provided for entering your farm costs.

The hypothetical farm operation, production practices, overhead, and calculations are described under the assumptions. For additional information or an explanation of the calculations used in the study call the Department of Agricultural and Resource Economics, University of California, Davis, (530) 752-3589 or your local UC Cooperative Extension office.

Sample Cost of Production Studies for many commodities (current and archived) can be downloaded from the Department of Agricultural and Resource Economics' website at http://coststudies.ucdavis.edu. Studies can also be requested through Agricultural and Resource Economics, UC Davis, (530) 752-1515 or obtained from selected county UC Cooperative Extension offices.

ASSUMPTIONS

The assumptions refer to Tables 1 to 18 and pertain to sample costs to produce mixed vegetables (tomatoes, melons, winter squash) in the Sierra Nevada Foothills, Placer and Nevada Counties. The cultural practices described represent production operations and materials considered typical on a well-managed farm in the region. Costs, materials, and practices in this study will not apply to all farms. Timing and types of establishment and cultural practices will vary among growers within the region and from season to season due to variables such as weather, soil, and insect and disease pressure. The study does not represent a single farm and is intended as a guide only. **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.**

Farm. The hypothetical farm consists of 10 contiguous acres purchased for a homesite and small farm. The homeowner grower is producing vegetables on four acres; three are budgeted in this study. The fourth cultivated acre may be planted to another vegetable or a mix of other vegetables. The remaining six acres consist of a home, shop, non-farmable land, and irrigation system. The vegetables are planted on land suitable for vegetable production and with no more than a 5% slope. Much of the farm production in the area is on lesser acreage; total farm production may be as small as an acre or less. This may result in less equipment and more hand labor. **Costs in this study are based on one-acre fields; for smaller acreage, costs can be adjusted accordingly.**

Tomato Production Practices and Material Inputs

Land Preparation. The field is disked in the fall and a cover crop planted. The field is ripped in two directions once every five years and one fifth of the cost is included each year. Soil amendments and fertilizers are applied and incorporated prior to planting.

Cover Crop. A cover crop of mixed legumes and grasses for nutrients and erosion control is planted in the fall (October), mowed, and rototilled in separate operations in February. The ground is left untouched for the next month for the cover crop to decompose.

Plant/Transplant. Plastic mulch is laid down the rows prior to planting. Mixed tomatoes (assorted standard and cherry) are transplanted on 2 x 4 foot spacing. Rows are 4 feet wide and 200 feet long, approximately 54 rows per acre. The seeds are planted in flats in the greenhouse starting in February and the transplants taken to the field in April or May. Planting is normally done over several weeks to extend the harvest season, except above 2,500 feet in elevation.

Fertilizer/Soil Amendments. In April, compost at 10 tons per acre, blood meal (13-0-0) at 800 pounds per acre, and oyster shell lime at 400 pounds per acre are individually applied. Compost is not applied every year, but every other year on average; therefore, one-half of the cost is included each year. Potassium sulfate is hand applied at 50 pounds per acre. Rock phosphate at one ton per acre is hand applied once every three years. One third of the material/cost is shown as an expense each year.

String (string weaving). Seven-foot T-posts at eight foot spacing are placed in the row at planting and the labor is included in the planting cost. One month after planting, the first set of strings are woven around posts and plants down the row. String weaving is done weekly thereafter, taking 50 hours per acre for the first four weeks and 37.5 hours for the next three weeks.

Irrigation. T-Tape is laid down the rows prior to planting. The crop is irrigated every other day for one week beginning right after planting in April; thereafter the crop is irrigated once per week. Water is gravity-fed from the irrigation district canal through a drip system. Water in the district is sold by the miner's inch, which is a continuous flow of water throughout the season through an approved measuring device, equivalent to 11.25 gallons per minute. The water cost is paid monthly or bimonthly by the grower regardless of the amount used on the crop. The water cost of $35 per acre is an average monthly cost based on the participating growers' data. The district delivers water for 6 months, April 15 to October 15. Labor hours for irrigation are calculated at one hour per acre per irrigation. The irrigation hours include time to clean the water box twice a week, flush the filters and walk the irrigation lines. No assumption is made about effective rainfall, evaporation, or runoff.

Pest Management. The pesticides, rates, and application practices mentioned in this cost study are listed on the UC IPM website at www.ipm.ucdavis.edu. Pesticides mentioned in this study are not recommendations, but those commonly used in the region. For information and pesticide use permits, contact the local county Agricultural Commissioner's office. For information on other pesticides available, pest identification, monitoring, and management, visit the UC IPM website or contact your county farm advisor. Pest control costs can vary considerably each year depending upon local conditions and pest populations in any given year. Adjuvants are recommended for many pesticides for effective control and are an added cost. The adjuvants are not included in this study.

Weeds. The field is hoed three times, twice in May and once in June at 50 hours per weeding.

Insects. Tomato hornworms are the primary caterpillar pest, although tomato fruit worms occasionally cause damage. Bacillus thuringiensis, commonly called Bt, is applied for tomato hornworm control. Commonly used brand names include Biobit, Dipel, Javelin, Safer, Thuricide, and others. It is applied with a backpack sprayer when there are signs of caterpillar damage. Application takes two hours and is typically made twice a season, usually in June or July. Other materials such as spinosad (Success or Entrust) may be more effective on fruit worms, but may be more expensive.

Diseases. No diseases are treated.

Rodents. Gophers are controlled by trapping from the last week of April through May, and thereafter periodically, as needed. It takes one-half hour per day to monitor the three traps in each crop.

Harvest. Tomatoes are picked two to three times per week (three times in this study) from mid-July to mid-October (12-14 weeks). The tomatoes are picked into five gallon buckets and dumped into boxes for sorting. Picking during peak yield takes approximately 120 man-hours per acre; early and late pickings require about one-half of peak yield hours. Picking time varies by variety and yield, ranging from 40 to 140 hours per acre. Picking time is based on picking 90 feet of row per hour. Cherry tomatoes are at the upper end of the picking range and may be picked directly into baskets. The tomatoes are delivered to the onsite packing shed.

Yields. Based on grower information, yields are estimated at 30,000 pounds per acre.

Packing. The grower has a small packing shed/area on site. Packing costs include the sorting, packing and carton costs (where applicable). Cartons are assumed to be reusable except for those delivered to the wholesale markets.

Returns. According to growers in the area, average returns over the season for tomatoes sold at the farmers' market are $2.25 per pound and wholesale markets at $1.70 per pound. Returns, using a weighted average based on 80% retail and 20% wholesale over various yields, are used in the Ranging Analysis Table.

Marketing/Selling. Growers in the area market and sell their own produce. Selling and marketing costs include advertising, delivery, and/or shipping costs, bookkeeping and other related costs such as a scale for weighing. These costs are shown under Cash Overhead. Approximately 20% of the crop is delivered to stores and restaurants for resale. The remaining 80% is sold at farmers' markets. Four crops are grown on the farm and at any one time, three of the four crops are being marketed; therefore, one-third of the costs are allocated to each crop.

Wholesale. The grower uses his/her pickup to deliver to the markets, stores, or other sales outlets. It is assumed that one trip per week is made to all locations taking a total of two hours which includes travel (1.5 hours), loading and unloading time (0.5 hours).

Farmers' Market. The grower rents a stall at a farmers' market three times per week at $30 per market ($90 per week). Average travel time per week to the three markets is 3.5 hours and then the grower spends 6 hours at each market or 18 hours per week to set up, breakdown and staff the booth. For the purposes of this study, it is assumed that each customer will purchase three pounds of tomatoes in a plastic bag. In reality, not every customer will require a bag or some may need more than one. The bags are included as a marketing cost.

Winter Squash Production Practices and Material Inputs

Land Preparation. The field is disked in the fall and cover crop planted. The field is ripped in two directions once every five years. One fifth of the cost is included each year. Soil amendments and fertilizers are applied and incorporated prior to planting.

Cover Crop. A cover crop of legumes and grasses for nutrients and erosion control is planted in the fall (October), mowed and rototilled in separate operations in February. The ground is left untouched for the next month for the cover crop to decompose.

Plant. Plastic mulch (and T-Tape) is laid on the rows prior to planting. Mixed winter squash (acorn, butternut, Delicata, Hubbard, kabocha) are planted on 2 x 6 foot spacing in early May. Rows are 6 feet wide and 200 feet long, approximately 36 rows per acre. Two to three seeds are planted in each hole with the use of a hand jab planter taking 18 man hours per acre.

Fertilizer/Soil Amendments. In April, compost at 10 tons per acre, blood meal (13-0-0) at 800 pounds per acre, and oyster shell lime at 400 pounds per acre are individually applied. Compost is not applied every year, but every other year on average; therefore, one-half of the cost is included each year. Potassium sulfate is hand applied at 50 pounds per acre. Rock phosphate at one ton per acre is hand applied once every three years. One third of the material/cost is shown as an expense each year.

Irrigation. T-Tape is laid down the rows prior to planting. The crop is irrigated every other day beginning right after planting and continuing for two weeks, thereafter the crop is irrigated once per week through September. Water is gravity fed from the irrigation district through a drip system. Water in the district is sold by the miner's inch, which is a continuous flow of water throughout the season through an approved measuring device, equivalent to 11.25 gallons per minute. The water cost of $35 per acre is an average monthly cost based on the participating growers' data. The water cost is paid monthly by the grower regardless of the amount used on the crop. The district delivers water for 6 months, April 15 to October 15. Labor hours are calculated at one-half hour per acre per irrigation. The cost (hours) includes time to clean the water box twice a week, flush the filters, and walk the irrigation lines. No assumption is made about effective rainfall, evaporation, or runoff.

Pest Management. The pesticides, rates, and application practices mentioned in this cost study are listed on the UC IPM website at www.ipm.ucdavis.edu. Pesticides mentioned in this study are not recommendations, but those commonly used in the region. For information and pesticide use permits, contact the local county Agricultural Commissioner's office. For information on other pesticides available, pest identification, monitoring, and management, visit the UC IPM website or contact your county farm advisor. Pest control costs can vary considerably each year depending upon local conditions and pest populations in any given year. Adjuvants are recommended for many pesticides for effective control and are an added cost. The adjuvants are not included in this study.

Weeds. The field is hoed twice, once in May and once in June at 72 hours per weeding.

Insects. Neemix is applied for aphids and/or white flies once in July and once in August, at two hours per application using a backpack sprayer.

Diseases. Powdery mildew is assumed to be controlled with the Neemix application.

Rodents. Gophers are controlled by trapping from the last week of April through May, and periodically as needed. It takes one-half hour per day to monitor the three traps in each crop.

Harvest. The mixed squash are picked two to three times (three in this study) per week from mid-September to mid-October (4-6 weeks). The squash are picked into fruit lugs, which when full, are set on a trailer pulled by a tractor for delivery to the on site packing area. It takes approximately 30 man-hours per week to pick a weekly average of 6,000 pounds of squash.

Yields. Based on grower information, yields are estimated at 30,000 pounds per acre. Although yields are lighter at the beginning and end of the season, yields are assumed to be 6,000 pounds per week.

Packing. The grower has a small packing shed/area on site. Packing costs include the sorting, packing and carton costs. Cartons are assumed to be reusable (shown under Non-Cash Overhead) except those delivered to the wholesale markets.

Returns. According to growers in the area, returns for squash sold at the farmers' market average $1.00 per pound and wholesale markets at $0.75 per pound.

Marketing/Selling. Growers in the area market and sell their own produce. Selling and marketing costs include advertising, delivery, and/or shipping costs, bookkeeping and other related costs such as a scale for weighing and are included in Cash Overhead. Approximately 20% of the crop is sold wholesale or delivered to stores for resale. The remaining 80% is sold at farmers' markets. Four crops are grown on the ranch and at any one time, three of the crops are being sold wholesale and at the markets. Therefore, one-third of the marketing costs are allocated to each crop.

Wholesale. The grower uses his/her pickup to deliver to markets, stores, or other sales outlets. It is assumed that one trip per week is made and takes two hours which includes travel (1.5 hours), loading and unloading (0.5 hours).

Farmers' Market. The grower rents a stall at a farmers' market three times per week at $30 per market ($90 per week). Average travel time per week to the three markets is 3.5 hours per week and then the grower spends 6 hours at each market or 18 hours per week which includes set up, breakdown and staffing the booth.

Melon Production Practices and Material Inputs

Land Preparation. The field is disked in the fall and a cover crop planted. The crop is mowed and rototilled in the winter/spring. The field is ripped in two directions once every five years and one-fifth of the cost is included each year. Soil amendments and fertilizers are applied and incorporated prior to planting.

Cover Crop. A cover crop of legumes and grasses for nutrients and erosion control is planted in the fall (October); mowed and rototilled in separate operations in February. The ground is left untouched for the next month for the cover crop to decompose.

Plant. Mixed melons (cantaloupe, honeydew, watermelon, specialty melon) are planted from late April through late May on 2 x 6 foot spacing. Rows are 6 feet wide and 200 feet long, approximately 36 rows per acre. Seeds are planted in each hole with the use of a hand jab planter taking 18 man hours per acre.

Fertilizer/Soil Amendments. In April, compost at 10 tons per acre, blood meal (13-0-0) at 800 pounds per acre, and oyster shell lime at 400 pounds per acre are individually applied. Compost is not applied every year, but every other year on average; therefore, one-half of the cost is included each year. Potassium sulfate is hand applied at 50 pounds per acre. Rock phosphate at one ton per acre is hand applied once every three years. One third of the material/cost is shown as an expense each year.

Irrigation. T-Tape is laid down the rows prior to planting. The crop is irrigated every other day beginning right after planting in May and continuing for two weeks, thereafter the crop is irrigated once per week through September. Water is gravity fed from the irrigation district canal through a drip system. Water in the district is sold by the miner's inch, which is a continuous flow of water throughout the season through an approved measuring device, equivalent to 11.25 gallons per minute. The water cost of $35 per acre is an average monthly cost based on the participating growers' data. The water cost is paid monthly by the grower regardless of the amount used on the crop. The district delivers water for 6 months, April 15 to October 15. Labor hours are calculated at one-half hour per acre per irrigation. The cost (hours) includes time to clean the water box twice a week, flush the filters, and walk the irrigation lines. No assumption is made about effective rainfall, evaporation, or runoff.

Pest Management. The pesticides, rates, and application practices mentioned in this cost study are listed on the UC IPM website at www.ipm.ucdavis.edu. Pesticides mentioned in this study are not recommendations, but those commonly used in the region. For information and pesticide use permits, contact the local county Agricultural Commissioner's office. For information on other pesticides available, pest identification, monitoring, and management, visit the UC IPM website or contact your county farm advisor. Pest control costs can vary considerably each year depending upon local conditions and pest populations in any given year. Adjuvants are recommended for many pesticides for effective control and are an added cost. The adjuvants are not included in this study.

*Weeds***.** The field is hoed twice, once in May and once in June at 72 hours per weeding.

Insects. Neemix is applied for aphids once in July and once in August, at two hours per application using a backpack sprayer.

Diseases. Powdery mildew is assumed to be controlled with the Neemix application.

Rodents. Gophers are controlled by trapping from the last week of April through May, and periodically as needed. It takes one-half hour per day to monitor the three traps in each crop.

Harvest. The mixed melons are picked three times per week from mid-July to early September. It takes an average of 20 hours per week to pick the melons. The melons are picked into fruit lugs and when filled set on the bin trailer for delivery to the on site packing area. Yields are assumed to be 7,285 pounds per week and it takes 20 hours per week at peak season with fewer hours at the beginning and end of the season.

Yields. Yields based on grower information are estimated at 51,000 pounds per year (watermelons, 15,000 pounds; cantaloupe, 12,000 pounds, honeydew, 12,000 pounds, and specialty melons 12,000 pounds). Yields are lighter at the beginning and end of season.

Returns. Twenty percent of the crop is sold wholesale: watermelons, $0.60 per pound; cantaloupe, $0.94 per pound; honeydew, $0.75 per pound and specialty melons, $1.20 per pound. The remaining melons are sold at farmers' markets: watermelons, $0.80 per pound; cantaloupe, $1.25 per pound; honeydew, $1.00 per pound and specialty melons, $1.50 per pound.

Marketing/Selling. Growers in the area market and sell their own produce. Selling and marketing costs include advertising, delivery, and/or shipping costs, bookkeeping and other related costs such as a scale for weighing and are included in Cash Overhead. Approximately 20% of the crop is delivered to stores and restaurants for resale. The remaining 80% is sold at farmers' markets. Four crops are produced on the ranch and at any one time three crops are being sold at the markets. Therefore, one third of the wholesale and market prices are divided among the four crops. Melons are priced prior to delivery to the farmers' markets.

Wholesale. The grower uses his/her pickup to deliver to markets, stores, or other sales outlets. It is assumed that one trip per week is made and takes two hours (1.5 hours travel time plus 0.5 hours for loading and unloading).

Farmers' Market. The grower rents a stall at a farmers' market three times per week at $30 per market ($90 per week). Average travel time per week to the three markets is 3.5 hours per week and then the grower spends 6 hours at each market or 18 hours per week which includes set up, breakdown and staffing the booth.

Labor, Equipment and Interest

Labor. Hourly wages for workers are $11.50 for machine operators and $10.00 per hour non-machine labor. Adding 34% for the employer's share of federal and state payroll taxes, workers' compensation insurance for truck crops (code 0172) and a percentage for other possible benefits give the labor rates shown of $15.41 and $13.40 per hour for machine labor and non-machine labor, respectively. Workers' compensation costs will vary among growers, but for this study the cost is based upon the average industry final rate as of January 1, 2009 (personal email from California Department of Insurance, March 2009, unreferenced). Labor for operations involving machinery are 20% higher than the operation time given in Tables 1, 7 and 12 to account for the extra labor involved in equipment set up, moving, maintenance, work breaks, and field repair.

Equipment Operating Costs. Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by American Society of Agricultural Engineers (ASAE). Fuel and lubrication costs are also determined by ASAE equations based on maximum power takeoff (PTO) horsepower, and fuel type. Prices for on-farm delivery of red-dye diesel and gasoline are $3.70 (excludes excise taxes) and $3.36 per gallon, respectively. The fuel prices are the average costs from July 2008 through December 2008 derived from American Automobile Association (AAA) and Energy Information Administration monthly data. The diesel fuel cost includes a 2.5% local sales tax and gasoline includes federal and state excise taxes and 8% sales tax. Gasoline also includes federal and state excise tax, which are refundable for on-farm use when filing

your income tax. The fuel, lube, and repair cost per acre for each operation in Tables 1, 7 and 12 is determined by multiplying the total hourly operating cost in Table 18 for each piece of equipment used for the selected operation by the hours per acre. Tractor time is 10% higher than implement time for a given operation to account for setup, travel and down time.

Interest on Operating Capital. Interest on operating capital is based on cash operating costs and is calculated monthly until harvest at a nominal rate of 5.75% 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 2009.

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, market, and weather risks, which affect profitability and economic viability.

Cash Overhead Costs

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.

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 two 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 0.82% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs $504 per farm.

Watershed Fees. Growers are required to belong to a watershed coalition or get their own discharge permit from the Regional Water Quality Control Board, which is extremely costly**.** The local subwatershed coalition, charges an annual fee of $65 per farm plus $1.00 per irrigated acre for watershed management and planning.

Office Expense. Office and business expenses are estimated at $350 per acre. These expenses include office supplies, telephones, bookkeeping, accounting, legal fees, shop and office utilities, and miscellaneous administrative charges.

Advertising/Marketing. The grower belongs to several local organizations to promote the farm and products. Costs for website maintenance and for miscellaneous advertising and marketing are estimated at $300 ($75 per acre).

Management/Supervisor Salaries. The grower farms the land; therefore no salaries are included for management. Returns above costs are considered a return to management.

Investment Repairs. Annual maintenance is calculated as two percent of the purchase price.

Non-Cash Overhead Costs

Non-Cash overhead 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 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, 1984.). 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).

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, 1984.). 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 17.

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 4.75% 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 2009.

Greenhouse. The greenhouse is used to grow transplants for tomato production. The plastic greenhouse has a useful life of five years. Size is 24 x 48 feet.

Greenhouse Planting Flats. The grower owns 76 planting seed flats for growing tomato transplants. The 10-inch x 20 inch flats have an expected useful life of three years.

T-Posts. Seven foot T-Posts are used for staking or tying up the tomatoes. The posts are amortized over 20 years based on grower input. The grower owns 1,404 T-Posts.

T-Tape. T-Tape use varies by grower ranging from one to several years. Tomatoes use 10,800 feet and the melons and squash each use 7,200 feet with a useful life of two years.

Deer Fence. A fence to protect the crop from the deer is installed around the plantings. The fence (2,142 feet) is installed around the four acres.

Land. Land in this study is valued at $100,000 per acre, based on grower input from recent sales. The land value is based on being a homesite. Land designated for agricultural value would most likely be considerably less.

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Pack Boxes/Pack Cartons. Unwaxed 15 pound cartons are used for the sorted tomatoes. Forty pound lug boxes (hold 30 pounds of product) are used for picking the melons and squash. The cartons delivered to the farmers' market are reused whereas the cartons delivered to the wholesale market are not returned and the cost is expensed accordingly.

Tools – Shop/Field. This includes shop and packing shed equipment and tools, hand tools, and miscellaneous field tools - pruning, picking, gopher traps, backpack sprayer, hoes, picking buckets, lug boxes, scale for use at farmers' markets. The value is an approximation and not based on a specific inventory.

Equipment. Farm equipment is purchased new or used, but the study shows the current purchase price for new equipment. The new purchase price is adjusted to 60% to indicate a mix of new and used equipment. 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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For information concerning the above mentioned University of California publications contact UC DANR Communications Services (1-800-994-8849) or your local county Cooperative Extension office.

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Table 1. COSTS PER ACRE TO PRODUCE FRESH MARKET TOMATO

SIERRA NEVADA - Placer/Nevada Counties 2009

Operation	Operation Time (Hrs/A)	Cash and Labor Costs per Acre					
		Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/ Rent	Total Cost	Your Cost
Cultural:							
Land Prep: Disk	0.29	5	3	0	0	8	
Cover Crop: Plant	0.39	7	4	75	0	87	
Cover Crop: Mow	1.00	18	10	0	0	29	
Cover Crop: Rototill	2.00	37	20	0	0	57	
Fertilize: (Blood Meal)	0.65	12	6	800	0	818	
Fertilize: 1X/2 Yr (Compost)	0.20	4	2	90		96	
Fertilize: 1X/3 Yr (Rock Phosphate)	0.22	4	2	213	0	219	
Amendment: (Lime)	0.65	12	6	32	0	50	
Fertilize: Hand Application (Potassium Sulfate)	2.00	27	0	33	0	59	
Land Prep: Rip 1X/5 Yr (two directions)	0.31	6	3	0	0	8	
Fertilize: Incorporate	2.00	37	20	0	0	57	
Irrigate: Lay Drip Tape (labor). Weed: Lay Mulch (labor, mulch)	1.00	59	9	432	0	500	
Rodent: Gopher Control	14.50	194	0	0	0	194	
Plant: Transplant (labor) (see Greenhouse). Install T-Posts (labor)	304.00	4,074	0	0	0	4,074	
Irrigate: (water & labor)	26.00	348	0	210	0	558	
Weed: Hand Hoe	150.00	2,010	0	0	0	2,010	
String: String Plants	312.50	4,188	0	408	0	4,596	
Insect: Worms (Dipel) Hand Applied	2.00	27	0	17	0	44	
TOTAL CULTURAL COSTS	819.72	11,069	85	2,310	0	13,464	
Greenhouse:							
Plant: Seed (seed, soil)	13.00	174	0	395	0	569	
Irrigate: Water Flats (labor)	22.50	302	0	0	0	302	
TOTAL GREENHOUSE COSTS	35.50	476	0	395	0	870	
Harvest:							
Pick: 3X per week (picking hours labor see Table 6)	6.00	48,351	54	0	0.00	48,405	
TOTAL HARVEST COSTS	6.00	48,351	54	0	0	48,405	
Market:							
Packing/Sort	54.00	724	0	0	0	724	
Wholesale: (delivery)	6.00	138	72	498	0	707	
Farmers' market (delivery, labor, see Table 6))	14.00	1,224	169	216	360	1,968	
TOTAL MARKET COSTS	74.00	2,085	241	713	360	3,399	
Interest on operating capital @ 5.75%						1,054	
TOTAL OPERATING COSTS/ACRE		61,981	380	3,418	360	67,192	
Cash Overhead:							
Liability Insurance						126	
Office Expense						350	
Watershed Fees						17	
Advertisement/Marketing						75	
Property Taxes						1,091	
Property Insurance						75	
Investment Repairs						318	
TOTAL CASH OVERHEAD COSTS						2,052	
TOTAL CASH COSTS/ACRE						69,245	

UC COOPERATIVE EXTENSION

Table 1. CONTINUED

SIERRA NEVADA - Placer/Nevada Counties 2009

Operation	Operation Time (Hrs/A)	Cash and Labor Costs per Acre: Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/ Rent	Total Cost	Your Cost
NON-CASH OVERHEAD (Capital Recovery):		Per producing Acre		Annual Costs Capital Recovery			
Greenhouse		3,500		803		803	
Land		100,000		4,750		4,750	
Deer Fence		1,607		206		206	
Cartons		100		23		23	
T-Posts		9,126		717		717	
Tools - Shop/Field		1,250		160		160	
T-Tape		212		114		114	
Planting Flats		114		42		42	
Equipment		9,183		1,080		1,080	
TOTAL NON-CASH OVERHEAD COSTS		125,091		7,894		7,894	
TOTAL COSTS/ACRE						77,138	

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

Table 2. COSTS and RETURNS PER ACRE to PRODUCE FRESH MARKET TOMATOES

SIERRA NEVADA - Placer/Nevada Counties 2009

	Quantity Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Tomatoes (wholesale)	6,000.00	lb	1.70	10,200	
Tomatoes (farmers market)	24,000.00	lb	2.25	54,000	
TOTAL GROSS RETURNS	30,000.00	lb		64,200	
OPERATING COSTS					
Seed:					
Tomato Seed (mixed varieties)	5.45	thou	10.01	55	
Potting Soil (for greenhouse flats)	50.00	cuft	6.00	300	
Propagation Material (for greenhouse)	2.00	mnth	20.00	40	
Cover Crop Seed	100.00	lb	0.75	75	
Fertilizer:					
Blood Meal (13-0-0)	800.00	lb	1.00	800	
Compost (10 tons 1X/2 Yr, one-half rate shown)	5.00	ton	18.00	90	
Rock Phosphate (1X/3 Yr, one-third of rate shown)	667.00	lb	0.32	213	
Oyster Shell Lime	400.00	lb	0.08	32	
Potassium Sulfate	50.00	lb	0.65	33	
Herbicide:					
Mulch Black (4' width)	10,800.00	ft	0.04	432	
Irrigation:					
Water (based on grower per acre costs)	6.00	acre	35.00	210	
Plant Culture:					
Sissal Twine	1,701.00	cft	0.24	408	
Insecticide:					
Dipel DF	1.00	lb	16.90	17	
Cartons/Bags:					
Cartons (15 lb for wholesale customer)	398.00	each	1.25	498	
Bags (to hold customer purchases)	7,998.00	each	0.03	216	
Rent:					
Stall Rental (tomato portion)	12.00	each	30.00	360	
Labor (machine)	41.66	hrs	15.41	642	
Labor (non-machine)	4,577.50	hrs	13.40	61,339	
Fuel - Diesel	73.99	gal	3.70	274	
Lube				41	
Machinery repair				65	
Interest on operating capital @ 5.75%				1,054	
TOTAL OPERATING COSTS/ACRE				67,192	
NET RETURNS ABOVE OPERATING COSTS				-2,992	

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Table 2. CONTINUED

SIERRA NEVADA - Placer/Nevada Counties 2009

	Quantity Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
CASH OVERHEAD COSTS:					
Liability Insurance				126	
Office Expense				350	
Watershed Fees				17	
Advertisement/Marketing				75	
Property Taxes				1,091	
Property Insurance				75	
Investment Repairs				318	
TOTAL CASH OVERHEAD COSTS/ACRE				2,052	
TOTAL CASH COSTS/ACRE				69,245	
NON-CASH OVERHEAD COSTS (Capital Recovery)					
Greenhouse				803	
Land				4,750	
Deer Fence				206	
Cartons				23	
T-Posts				717	
Tools - Shop/Field				160	
T-Tape				114	
Planting Flats				42	
Equipment				1,080	
TOTAL NON-CASH OVERHEAD COSTS/ACRE				7,894	
TOTAL COSTS/ACRE				77,138	
NET RETURNS/ ACRE				-12,938	

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

Table 3. MONTHLY CASH COSTS PER ACRE TO PRODUCE FRESH MARKET TOMATOES

SIERRA NEVADA - Placer/Nevada Counties 2009

Beginning OCT 08 Ending OCT 09	OCT 08	NOV 08	DEC 08	JAN 09	FEB 09	MAR 09	APR 09	MAY 09	JUN 09	JUL 09	AUG 09	SEP 09	OCT 09	TOTAL
Cultural:														
Land Prep: Disk	8													8
Cover Crop: Plant	87													87
Cover Crop: Mow					29									29
Cover Crop: Rototill					57									57
Fertilize: (Blood Meal)							818							818
Fertilize: 1X/2 Yr (Compost)							96							96
Fertilize: 1X/3 Yr (Rock Phosphate)							220							220
Amendment: (Lime)							50							50
Fertilize: Hand Application (Potassium Sulfate)							59							59
Land Prep: Rip 1X/5 Yr (two directions)							8							8
Fertilize: Incorporate							57							57
Irrigate: Lay Drip Tape. Weed: Lay Mulch							500							500
Rodent: Gopher Control							47	147						194
Plant: Transplant (see Greenhouse). Install T-Posts							4,074							4,074
Irrigate: (water & labor)							71	89	89	89	89	89	44	558
Weed: Hand Hoe								1,340	670					2,010
String: String Plants								1,457	3,139					4,596
Insect: Worms (Dipel) Hand Applied												44		44
TOTAL CULTURAL COSTS	95				86		6,000	3,033	3,898	89	89	132	44	13,464
Greenhouse:														
Plant: Seed (seed, flats, soil)					569									569
Irrigate: Water Flats (labor)					235	67								302
TOTAL GREENHOUSE COSTS					803	67								870
Harvest:														
Pick: 3X per week										4,851	19,351	19,351	4,851	48,405
TOTAL HARVEST COSTS										4,851	19,351	19,351	4,851	48,405
Market:														
Packing/Sort										121	241	241	121	724
Wholesale: (delivery)										117	236	236	117	707
Farmers' market (delivery, labor)										328	656	656	328	1,968
TOTAL MARKET COSTS										566	1,134	1,134	566	3,399
Interest on Operating Capital @ 5.75%	0	0	0	0	5	5	34	48	67	93	192	291	317	1,054
TOTAL OPERATING COSTS/ACRE	95	0	0	0	894	72	6,034	3,081	3,965	5,599	20,765	20,908	5,779	67,192

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Table 3. CONTINUED

SIERRA NEVADA - Placer/Nevada Counties 2009

Beginning OCT 08 Ending OCT 09	OCT 08	NOV 08	DEC 08	JAN 09	FEB 09	MAR 09	APR 09	MAY 09	JUN 09	JUL 09	AUG 09	SEP 09	OCT 09	TOTAL
CASH OVERHEAD:														
Liability Insurance								126						126
Office Expense	29	29	29	29	29	29	29	29	29	29	29	29		350
Watershed Fees				17										17
Advertisement/Marketing	6	6	6	6	6	6	6	6	6	6	6	6	6	75
Property Taxes				546						546				1,091
Property Insurance				37						37				75
Investment Repairs	27	27	27	27	27	27	27	27	27	27	27	27		318
TOTAL CASH OVERHEAD COSTS	61	61	61	662	61	61	61	187	61	645	61	61	6	2,052
TOTAL CASH COSTS/ACRE	156	62	62	662	955	133	6,095	3,268	4,026	6,244	20,827	20,969	5,784	69,245

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

Table 4. RANGING ANALYSIS – TOMATOES

SIERRA NEVADA - Placer/Nevada Counties 2009

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE FRESH MARKET TOMATOES

	YIELD (POUNDS/ACRE)						
	24,000	26,000	28,000	30,000	32,000	34,000	36,000
OPERATING COSTS/ACRE:							
Cultural Cost	13,464	13,464	13,464	13,464	13,464	13,464	13,464
Greenhouse Cost	870	870	870	870	870	870	870
Harvest Cost (Pick)	38,654	41,904	45,155	48,405	51,655	54,905	58,155
Harvest (Pack/Sort)	562	616	670	724	777	831	885
Sell (wholesale, farmer's market)	2,503	2,561	2,618	2,676	2,733	2,791	2,848
Interest on operating capital @ 5.75%	933	973	1,014	1,054	1,094	1,134	1,174
TOTAL OPERATING COSTS/ACRE	56,987	60,389	63,792	67,194	70,594	73,996	77,397
TOTAL OPERATING COSTS/POUND	2.37	2.32	2.28	2.24	2.21	2.18	2.15
CASH OVERHEAD COSTS/ACRE	2,049	2,050	2,051	2,052	2,054	2,055	2,056
TOTAL CASH COSTS/ACRE	59,036	62,439	65,843	69,246	72,648	76,051	79,453
TOTAL CASH COSTS/POUND	2.46	2.40	2.35	2.31	2.27	2.24	2.21
NON-CASH OVERHEAD COSTS/ACRE	7,858	7,870	7,882	7,894	7,905	7,917	7,929
TOTAL COSTS/ACRE	66,894	70,309	73,725	77,140	80,553	83,968	87,382
TOTAL COSTS/POUND	2.79	2.70	2.63	2.57	2.52	2.47	2.43

NET RETURNS PER ACRE ABOVE OPERATING COSTS

Tomatoes	YIELD (POUNDS/ACRE)						
$/lb	24,000	26,000	28,000	30,000	32,000	34,000	36,000
0.64	-41,627	-43,749	-45,872	-47,994	-50,114	-52,236	-54,357
1.14	-29,627	-30,749	-31,872	-32,994	-34,114	-35,236	-36,357
1.64	-17,627	-17,749	-17,872	-17,994	-18,114	-18,236	-18,357
2.14	-5,627	-4,749	-3,872	-2,994	-2,114	-1,236	-357
2.64	6,373	8,251	10,128	12,006	13,886	15,764	17,643
3.14	18,373	21,251	24,128	27,006	29,886	32,764	35,643
3.64	30,373	34,251	38,128	42,006	45,886	49,764	53,643

NET RETURNS PER ACRE ABOVE CASH COSTS

Tomatoes	YIELD (POUNDS/ACRE)						
$/lb	24,000	26,000	28,000	30,000	32,000	34,000	36,000
0.64	-43,676	-45,799	-47,923	-50,046	-52,168	-54,291	-56,413
1.14	-31,676	-32,799	-33,923	-35,046	-36,168	-37,291	-38,413
1.64	-19,676	-19,799	-19,923	-20,046	-20,168	-20,291	-20,413
2.14	-7,676	-6,799	-5,923	-5,046	-4,168	-3,291	-2,413
2.64	4,324	6,201	8,077	9,954	11,832	13,709	15,587
3.14	16,324	19,201	22,077	24,954	27,832	30,709	33,587
3.64	28,324	32,201	36,077	39,954	43,832	47,709	51,587

NET RETURNS PER ACRE ABOVE TOTAL COSTS

Tomatoes	YIELD (POUNDS/ACRE)						
$/lb	24,000	26,000	28,000	30,000	32,000	34,000	36,000
0.64	-51,534	-53,669	-55,805	-57,940	-60,073	-62,208	-64,342
1.14	-39,534	-40,669	-41,805	-42,940	-44,073	-45,208	-46,342
1.64	-27,534	-27,669	-27,805	-27,940	-28,073	-28,208	-28,342
2.14	-15,534	-14,669	-13,805	-12,940	-12,073	-11,208	-10,342
2.64	-3,534	-1,669	195	2,060	3,927	5,792	7,658
3.14	8,466	11,331	14,195	17,060	19,927	22,792	25,658
3.64	20,466	24,331	28,195	32,060	35,927	39,792	43,658

Price is weighted average based on 20% @ wholesale price and 80% @ retail (farmers' market) price

UC COOPERATIVE EXTENSION

Table 5. GREENHOUSE OPERATIONS WITH EQUIPMENT & MATERIAL INPUTS FOR TOMATOES

SIERRA NEVADA - Placer/Nevada Counties 2009

Operation	Operation Month	Equipment		Non-Mach Labor hrs/acre	Material	Broadcast Rate/acre	Unit
		Tractor	Implement				
Cultural:							
Plant	Feb			13.00	Seed	5.45	thou
					Flats	76.00	each
					Potting Soil	50.00	cuft
					Propagation Material	2.00	mnth
Irrigate: First 10 days	Feb			7.50	Water		
Irrigate:	Feb			10.00	Water		
	Mar			5.00	Water		

UC COOPERATIVE EXTENSION

Table 6. OPERATIONS WITH EQUIPMENT & MATERIAL INPUTS FOR TOMATOES

SIERRA NEVADA - Placer/Nevada Counties 2009

Operation	Operation Month	Equipment		Non-Mach Labor hrs/acre	Material	Broadcast Rate/acre	Unit
		Tractor	Implement				
Cultural:							
Land Prep: Disk	Oct	35HP	Disk				
Cover Crop: Plant	Oct	35HP	Seed Drill		Seed	100.00	lb
Cover Crop: Mow	Feb	35HP	Mower				
Cover Crop: Rototill	Feb	35HP	Rototiller				
Fertilize:	Apr	35HP	Spreader		Blood Meal	800.00	lb
Fertilize: 1X/2 Yrs	Apr	35HP	Compost Spreader		Compost	5.00	ton
Fertilize: 1X/3 Yrs	Apr	35HP	Spreader		Phosphate	667.00	lb
Fertilize:	Apr	35HP	Spreader		Lime	400.00	lb
Fertilize:	Apr			2.00	Potassium	50.00	lb
Land Prep: Rip 1X/5 Yr	Apr	35HP	Rip Shank				
Fertilize: Incorporate Fertilizer	Apr	35HP	Rototiller				
Weed: Lay Mulch. Irrigate: Lay T-Tape	Apr	35HP	Mulch Layer	3.00	Mulch	10,800.00	ft
Rodent: Gopher	Apr			3.50	Traps		
	May			11.00			
Plant: Transplant. Install T-Posts	Apr			304.00			
Irrigate:	Apr			4.00	Water	0.50	unit
Water use/cost is based on a per acre $ value.	May			4.00	Water	1.00	unit
	June			4.00	Water	1.00	unit
	July			4.00	Water	1.00	unit
	Aug			4.00	Water	1.00	unit
	Sept			4.00	Water	1.00	unit
	Oct			2.00	Water	0.50	unit
Weed: Hand	May			50.00			
	May			50.00			
	June			50.00			
Plants: String Plants	May			50.00	Twine	243.00	cft
	May			50.00	Twine	243.00	cft
	June			50.00	Twine	243.00	cft
	June			50.00	Twine	243.00	cft
	June			37.50	Twine	243.00	cft
	June			37.50	Twine	243.00	cft
	June			37.50	Twine	243.00	cft
Insects: Worms	Sept			2.00	Dipel	1.00	lb
Harvest: 3X/Week	July	35HP	Bin Trailer + Forks	360.00			
	Aug	35HP	Bin Trailer + Forks	1,440.00			
	Sept	35HP	Bin Trailer + Forks	1,440.00			
	Oct	35HP	Bin Trailer + Forks	360.00			
Market: Pack/Sort	July			9.00			
	Aug			18.00			
	Sept			18.00			
	Oct			9.00			
Market: Wholesale	July	Pickup		0.33	Cartons	66.00	
	Aug			0.67	Cartons	133.00	
	Sept			0.67	Cartons	133.00	
	Oct			0.33	Cartons	66.00	
Market: Farmers Market	July			12.00	Stall Rental		
					Customer Bags	1,333.00	each
	Aug			24.00	Stall Rental		
					Customer Bags	2,666.00	each
	Sept			24.00	Stall Rental		
					Customer Bags	2,666.00	each
	Oct			12.00	Stall Rental		
					Customer Bags	1,333.00	each

UC COOPERATIVE EXTENSION

Table 7. COSTS PER ACRE TO PRODUCE WINTER SQUASH

SIERRA NEVADA - Placer/Nevada Counties 2009

Operation	Operation Time (Hrs/A)	Cash and Labor Costs per Acre: Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/ Rent	Total Cost	Your Cost
Cultural:							
Land Prep: Disk	0.29	5	3	0	0	8	
Cover Crop: Plant	0.39	7	4	75	0	87	
Cover Crop: Mow	1.00	18	10	0	0	29	
Cover Crop: Rototill	2.00	37	20	0	0	57	
Fertilize: (Blood Meal)	0.65	12	6	800	0	818	
Fertilize: 1X/2 Yr (Compost)	0.20	4	2	90	0	96	
Fertilize: 1X/3 Yr (Rock Phosphate)	0.22	4	2	213	0	220	
Amendment: (Lime)	0.65	12	6	32	0	50	
Fertilize: Hand Application (Potassium Sulfate)	2.00	27	0	33	0	59	
Land Prep: Rip 1X/5 Yr (two directions)	0.31	6	3	0	0	8	
Fertilize: Incorporate	2.00	37	20	0	0	57	
Irrigate: Lay Drip Tape. Weed: Lay Mulch	1.00	59	9	288	0	356	
Rodent: Gopher Control	14.50	194	0	0	0	194	
Plant: Hand with Jab Planter	18.00	241	0	237	0	478	
Irrigate: (water & labor)	13.00	174	0	184	0	358	
Weed: Hand Hoe	144.00	1,930	0	0	0	1,930	
Insect: Aphid (Neemix). Disease: Mildew (Neemix) Backpack	4.00	54	0	200	0	254	
Insect: Squash Bug (vacuum)	2.00	27	0	0	0	27	
TOTAL CULTURAL COSTS	206.21	2,848	85	2,152	0	5,085	
Harvest:							
Pick: 3X per week (picking labor hours, see Table 11)	75.00	3,397	673	0.00	0.00	4,070	
TOTAL HARVEST COSTS	75.00	3,397	673	0	0	4,070	
Market:							
Packing/Sort	22.50	302	0	0	0	302	
Wholesale: (delivery)	2.50	57	30	0	0	87	
Farmers' market (delivery, labor, see Table 11)	17.50	726	211	216	150	1,302	
TOTAL MARKET COSTS	42.50	1,084	241	216	150	1,691	
Interest on operating capital @ 5.75%						191	
TOTAL OPERATING COSTS/ACRE		7,329	999	2,368	150	11,037	
Cash Overhead:							
Liability Insurance						126	
Office Expense						350	
Watershed Fees						17	
Advertisement/Marketing						75	
Property Taxes						1,109	
Property Insurance						89	
Investment Repairs						126	
TOTAL CASH OVERHEAD COSTS						1,892	
TOTAL CASH COSTS/ACRE						12,929	

Non-Cash Overhead (Capital Recovery):	Per producing Acre	Annual Costs Capital Recovery	
Land	100,000	4,750	4,750
Deer Fence	3,333	426	426
Boxes (30 lb)	1,607	206	206
Tools - Shop/Field	1,250	160	160
T-Tape	144	77	77
Equipment	12,522	1,331	1,331
TOTAL NON-CASH OVERHEAD COSTS	118,856	6,950	6,950
TOTAL COSTS/ACRE			19,879

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

Table 8. COSTS and RETURNS PER ACRE to PRODUCE WINTER SQUASH

SIERRA NEVADA - Placer/Nevada Counties 2009

	Quantity Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Winter Squash (wholesale)	6,000.00	lb	0.75	4,500	
Winter Squash (farmers market)	24,000.00	lb	1.00	24,000	
TOTAL GROSS RETURNS	30,000.00	lb		28,500	
OPERATING COSTS					
Seed:					
Acorn Squash	0.60	lb	63.20	38	
Butternut Squash	0.60	lb	22.40	13	
Delicato Squash	0.40	lb	35.50	14	
Hubbard Squash	1.70	lb	78.20	133	
Pumpkin	0.70	lb	55.00	39	
Cover Crop Seed	100.00	lb	0.75	75	
Fertilizer:					
Blood Meal (13-0-0)	800.00	lb	1.00	800	
Compost (10 tons 1X/2 Yr, one-half rate shown)	5.00	ton	18.00	90	
Rock Phosphate (1X/3 Yr, one-third of rate)	667.00	lb	0.32	213	
Oyster Shell Lime	400.00	lb	0.08	32	
Potassium Sulfate	50.00	lb	0.65	33	
Herbicide:					
Mulch Black (6' width)	7,200.00	ft	0.04	288	
Irrigation:					
Water (based on grower per acre costs)	5.25	acre	35.00	184	
Insecticide:					
Neemix 4.5	2.00	pint	100.00	200	
Cartons/Bags:					
Bags (to hold customer purchases)	8,000.00	each	0.03	216	
Rent:					
Stall Rental (squash portion)	5.00	each	30.00	150	
Labor (machine)	124.46	hrs	15.41	1,918	
Labor (non-machine)	403.83	hrs	13.40	5,411	
Fuel - Diesel	204.46	gal	3.70	757	
Lube				113	
Machinery repair				129	
Interest on operating capital @ 5.75%				191	
TOTAL OPERATING COSTS/ACRE				11,037	
NET RETURNS ABOVE OPERATING COSTS				17,463	
CASH OVERHEAD COSTS:					
Liability Insurance				126	
Office Expense				350	
Watershed Fees				17	
Advertisement/Marketing				75	
Property Taxes				1,109	
Property Insurance				89	
Investment Repairs				126	
TOTAL CASH OVERHEAD COSTS/ACRE				1,892	
TOTAL CASH COSTS/ACRE				12,930	
NON-CASH OVERHEAD COSTS (Capital Recovery)					
Land				4,750	
Packing Boxes (40 lb lugs)				426	
Deer Fence				206	
Tools - Shop/Field				160	
T-Tape				77	
Equipment				1,331	
TOTAL NON-CASH OVERHEAD COSTS/ACRE				6,950	
TOTAL COSTS/ACRE				19,879	
NET RETURNS/ ACRE				8,621	

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Table 9. MONTHLY CASH COSTS PER ACRE TO PRODUCE WINTER SQUASH

SIERRA NEVADA - Placer/Nevada Counties 2009

Beginning OCT 08 Ending OCT 09	OCT 08	NOV 08	DEC 08	JAN 09	FEB 09	MAR 09	APR 09	MAY 09	JUN 09	JUL 09	AUG 09	SEP 09	OCT 09	TOTAL
Cultural:														
Land Prep: Disk	8													8
Cover Crop: Plant	87													87
Cover Crop: Mow					29									29
Cover Crop: Rototill					57									57
Fertilize: (Blood Meal)							818							818
Fertilize: 1X/2 Yr (Compost)							96							96
Fertilize: 1X/3 Yr (Rock Phosphate)							220							220
Amendment: (Lime)							50							50
Fertilize: Hand Application (Potassium Sulfate)							59							59
Land Prep: Rip 1X/5 Yr (two directions)							8							8
Fertilize: Incorporate							57							57
Irrigate: Lay Drip Tape. Weed: Lay Mulch							356							356
Rodent: Gopher Control							47	147						194
Plant: Hand with Jab Planter								478						478
Irrigate: (water & labor)								80	62	62	62	62	31	358
Weed: Hand Hoe								965	965					1,930
Insect: Aphid (Neemix). Disease: Mildew (Neemix) Backpack										127	127			254
Insect: Squash Bug (vacuum)										27				27
TOTAL CULTURAL COSTS	95				86		1,711	1,670	1,027	215	189	62	31	5,085
Harvest:														
Pick: 3X per week												2,442	1,628	4,070
TOTAL HARVEST COSTS												2,442	1,628	4,070
Market:														
Packing/Sort												181	121	302
Wholesale: (delivery)												53	35	87
Farmers Market (delivery, labor)												781	521	1,302
TOTAL MARKET COSTS												1,015	676	1,691
Interest on operating capital @ 5.75%	0	0	0	0	1	1	9	17	22	23	24	41	52	191
TOTAL OPERATING COSTS/ACRE	95	0	0	0	87	1	1,720	1,687	1,049	239	213	3,559	2,387	11,037
OVERHEAD:														
Liability Insurance								126						126
Office Expense	29	29	29	29	29	29	29	29	29	29	29	29		350
Watershed Fees				17										17
Advertisement/Marketing	6	6	6	6	6	6	6	6	6	6	6	6	6	75
Property Taxes				554						554				1,109
Property Insurance				45						45				89
Investment Repairs	11	11	11	11	11	11	11	11	11	11	11	11		126
TOTAL CASH OVERHEAD COSTS	45	45	45	662	45	45	45	171	45	644	45	45	6	1,892
TOTAL CASH COSTS/ACRE	140	46	46	662	132	46	1,766	1,859	1,094	883	258	3,605	2,393	12,929

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Table 10. RANGING ANALYSIS – WINTER SQUASH

SIERRA NEVADA - Placer/Nevada Counties 2009

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE WINTER SQUASH

	YIELD (POUNDS/ACRE)						
	21,000	24,000	27,000	30,000	33,000	36,000	39,000
OPERATING COSTS/ACRE:							
Cultural Cost	5,085	5,085	5,085	5,085	5,085	5,085	5,085
Harvest Cost (Pick)	2,849	3,256	3,663	4,070	4,477	4,884	5,290
Market (Pack/Sort)	211	241	271	301	332	362	392
Market (Sell)	1,142	1,224	1,307	1,390	1,472	1,555	1,638
Interest on operating capital @ 5.75%	179	183	187	191	195	199	203
TOTAL OPERATING COSTS/ACRE	9,466	9,989	10,513	11,037	11,561	12,085	12,608
TOTAL OPERATING COSTS/POUND	0.45	0.42	0.39	0.37	0.35	0.34	0.32
CASH OVERHEAD COSTS/ACRE	1,868	1,877	1,885	1,892	1,899	1,906	1,912
TOTAL CASH COSTS/ACRE	11,334	11,866	12,398	12,929	13,460	13,991	14,520
TOTAL CASH COSTS/POUND	0.54	0.49	0.46	0.43	0.41	0.39	0.37
NON-CASH OVERHEAD COSTS/ACRE	6,711	6,795	6,875	6,950	7,020	7,086	7,149
TOTAL COSTS/ACRE	18,045	18,661	19,273	19,879	20,480	21,077	21,669
TOTAL COSTS/POUND	0.86	0.78	0.71	0.66	0.62	0.59	0.56

NET RETURNS PER ACRE ABOVE OPERATING COSTS

Squash	YIELD (POUNDS/ACRE)						
$/lb	21,000	24,000	27,000	30,000	33,000	36,000	39,000
0.70	5,234	6,811	8,387	9,963	11,539	13,115	14,692
0.80	7,334	9,211	11,087	12,963	14,839	16,715	18,592
0.90	9,434	11,611	13,787	15,963	18,139	20,315	22,492
1.00	11,534	14,011	16,487	18,963	21,439	23,915	26,392
1.10	13,634	16,411	19,187	21,963	24,739	27,515	30,292
1.20	15,734	18,811	21,887	24,963	28,039	31,115	34,192
1.30	17,834	21,211	24,587	27,963	31,339	34,715	38,092

NET RETURNS PER ACRE ABOVE CASH COSTS

Squash	YIELD (POUNDS/ACRE)						
$/lb	21,000	24,000	27,000	30,000	33,000	36,000	39,000
0.70	3,366	4,934	6,502	8,071	9,640	11,209	12,780
0.80	5,466	7,334	9,202	11,071	12,940	14,809	16,680
0.90	7,566	9,734	11,902	14,071	16,240	18,409	20,580
1.00	9,666	12,134	14,602	17,071	19,540	22,009	24,480
1.10	11,766	14,534	17,302	20,071	22,840	25,609	28,380
1.20	13,866	16,934	20,002	23,071	26,140	29,209	32,280
1.30	15,966	19,334	22,702	26,071	29,440	32,809	36,180

NET RETURNS PER ACRE ABOVE TOTAL COSTS

Squash	YIELD (POUNDS/ACRE)						
$/lb	21,000	24,000	27,000	30,000	33,000	36,000	39,000
0.70	-3,345	-1,861	-373	1,121	2,620	4,123	5,631
0.80	-1,245	539	2,327	4,121	5,920	7,723	9,531
0.90	855	2,939	5,027	7,121	9,220	11,323	13,431
1.00	2,955	5,339	7,727	10,121	12,520	14,923	17,331
1.10	5,055	7,739	10,427	13,121	15,820	18,523	21,231
1.20	7,155	10,139	13,127	16,121	19,120	22,123	25,131
1.30	9,255	12,539	15,827	19,121	22,420	25,723	29,031

Price is weighted average based on 20% @ wholesale price and 80% @ retail (farmers' market) price

UC COOPERATIVE EXTENSION

Table 11. OPERATIONS WITH EQUIPMENT & MATERIAL INPUTS for SQUASH

SIERRA NEVADA - Placer/Nevada Counties 2009

Operation	Operation Month	Equipment		Non-Mach Labor hrs/acre	Material	Broadcast Rate/acre	Unit
		Tractor	Implement				
Cultural:							
Land Prep: Disk	Oct	35HP	Disk				
Cover Crop: Plant	Oct	35HP	Seed Drill		Seed	100.00	lb
Cover Crop: Mow	Feb	35HP	Mower				
Cover Crop: Rototill	Feb	35HP	Rototiller				
Fertilize:	Apr	35HP	Spreader		Blood Meal	800.00	lb
Fertilize: 1X/2 Yrs	Apr	35HP	Compost Spreader		Compost	5.00	ton
Fertilize: 1X/3 Yrs	Apr	35HP	Spreader		Phosphate	667.00	lb
Fertilize:	Apr	35HP	Spreader		Lime	600.00	lb
Fertilize:	Apr			2.00	Potassium	50.00	lb
Land Prep: Rip 1X/5 Yr	Apr	35HP	Rip Shank				
Fertilize: Incorporate Fertilizer	Apr	35HP	Rototiller				
Weed: Lay Mulch. Irrigate: Lay T-Tape	Apr	35HP	Mulch Layer	3.00	Mulch	7,200.00	ft
Rodent: Gopher	Apr			3.50	Traps		
	May			11.00			
Plant:	May			18.00	Seed	4.00	lb
Irrigate:	May			4.00	Water	0.75	acre
Water use/cost is based on a per acre $ value	June			2.00	Water	1.00	acre
	July			2.00	Water	1.00	acre
	Aug			2.00	Water	1.00	acre
	Sept			2.00	Water	1.00	acre
	Oct			1.00	Water	0.50	acre
Weed: Hand	May			72.00			
	June			72.00			
Insects/Disease: Aphid/Mildew (Neemix)	July			2.00	Neemix	1.00	pt
	Aug			2.00	Neemix	1.00	pt
Insect: Squash Bug (Hand Vacuum)	July			2.00			
Harvest: 3X/Week	Sept	35HP	Bin Trailer + Forks	90.00			
	Oct	35HP	Bin Trailer + Forks	60.00			
Market: Pack/Sort	Sept			13.50			
	Oct			9.00			
Market: Wholesale	Sept			0.50			
	Oct			0.33	Cartons	66.00	
Market: Farmers Market	Sept			18.00	Stall Rental		
					Customer Bags	4,800.00	each
	Oct			12.00	Stall Rental		
					Customer Bags	3,200.00	each

UC COOPERATIVE EXTENSION

Table 12. COSTS PER ACRE TO PRODUCE MELONS

SIERRA NEVADA - Placer/Nevada Counties 2009

Operation	Operation Time (Hrs/A)	Cash and Labor Costs per Acre: Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/ Rent	Total Cost	Your Cost
Cultural:							
Land Prep: Disk	0.29	5	3	0	0	8	
Cover Crop: Plant	0.39	7	4	75	0	87	
Cover Crop: Mow	1.00	18	10	0	0	29	
Cover Crop: Rototill	2.00	37	20	0	0	57	
Fertilize: (Blood Meal)	0.65	12	6	800	0	818	
Fertilize: 1X/2 Yr (Compost)	0.20	4	2	90	0	96	
Fertilize: 1X/3 Yr (Rock Phosphate)	0.22	4	2	213	0	220	
Amendment: (Lime)	0.65	12	6	32	0	50	
Fertilize: Hand Application (Potassium Sulfate)	2.00	27	0	33	0	59	
Land Prep: Rip 1X/5 Yr (two directions)	0.31	6	3	0	0	8	
Fertilize: Incorporate	2.00	37	20	0	0	57	
Irrigate: Lay Drip Tape (labor). Weed: Lay Mulch (labor, mulch)	1.00	59	9	288	0	356	
Rodent: Gopher Control	14.50	194	0	0	0	194	
Plant: Hand with Jab Planter	21.00	281	0	216	0	498	
Irrigate: (water & labor)	10.50	141	0	140	0	281	
Weed: Hand Hoe	144.00	1,930	0	0	0	1,930	
Insect: Aphid (Neemix). Disease: Mildew (Neemix) Backpack	4.00	54	0	200	0	254	
Insect: Squash Bug (vacuum)	2.00	27	0	0	0	27	
TOTAL CULTURAL COSTS	206.71	2,855	85	2,087	0	5,027	
Harvest:							
Pick: 3X per week (picking labor see Table 16)	42.00	4,153	377	0	0	4,530	
TOTAL HARVEST COSTS	42.00	4,153	377	0	0	4,530	
Market:							
Packing/Sort	180.00	2,412	0	0	0	2,412	
Wholesale: (delivery)	3.33	79	40	0	0	119	
Farmers' market (delivery, labor, see Table 16)	9.33	816	112	0	240	1,168	
TOTAL MARKET COSTS	192.66	3,307	152	0	240	3,700	
Interest on operating capital @ 5.75%						203	
TOTAL OPERATING COSTS/ACRE		10,315	615	2,087	240	13,460	
Cash Overhead:							
Liability Insurance						126	
Office Expense						350	
Watershed Fees						17	
Advertisement/Marketing						75	
Property Taxes						1,086	
Property Insurance						70	
Investment Repairs						126	
TOTAL CASH OVERHEAD COSTS						1,850	
TOTAL CASH COSTS/ACRE						15,310	
Non-Cash Overhead (Capital Recovery):		Per producing Acre		Annual Costs Capital Recovery			
Land		100,000		4,750		4,750	
Deer Fence		1,607		206		206	
Boxes (30 lb)		3,333		426		426	
Tools - Shop/Field		1,250		160		160	
T-Tape		144		77		77	
Equipment		8,985		924		924	
TOTAL NON-CASH OVERHEAD COSTS		115,319		6,543		6,543	
TOTAL COSTS/ACRE						21,853	

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Table 13. COSTS and RETURNS PER ACRE to PRODUCE MELONS

SIERRA NEVADA - Placer/Nevada Counties 2009

	Quantity Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Watermelon (wholesale)	3,000.00	lb	0.64	1,920	
Watermelon (farmers' market)	12,000.00	lb	0.80	9,600	
Cantaloupe (wholesale)	2,400.00	lb	1.00	2,400	
Cantaloupe (farmers' market)	9,600.00	lb	1.25	12,000	
Specialty Melon (wholesale)	2,400.00	lb	1.20	2,880	
Specialty Melon (farmers' market)	9,600.00	lb	1.50	14,400	
Honeydew (wholesale)	2,400.00	lb	0.80	1,920	
Honeydew (farmers' market)	9,600.00	lb	1.00	9,600	
TOTAL GROSS RETURNS	51,000.00	lb		54,720	
OPERATING COSTS					
Seed:					
Crimson Watermelon	0.20	lb	29.75	6	
Sugar Baby Watermelon	0.20	lb	25.75	5	
Specialty Melon	0.20	lb	520.00	104	
Cantaloupe	0.20	lb	93.95	19	
Honeydew Melon	0.20	lb	412.00	82	
Cover Crop Seed	100.00	lb	0.75	75	
Fertilizer:					
Blood Meal (13-0-0)	800.00	lb	1.00	800	
Compost (1X/2 Yr, one-half rate shown)	5.00	ton	18.00	90	
Rock Phosphate (1X/3 Yr, one-third of rate)	667.00	lb	0.32	213	
Oyster Shell Lime	400.00	lb	0.08	32	
Potassium Sulfate	50.00	lb	0.65	33	
Herbicide:					
Mulch Black (6' width)	7,200.00	ft	0.04	288	
Irrigation:					
Water (based on grower per acre costs)	4.00	acre	35.00	140	
Insecticide:					
Neemix 4.5	2.00	pint	100.00	200	
Rent:					
Stall Rental (melon portion)	8.00	each	30.00	240	
Labor (machine)	76.05	hrs	15.41	1,172	
Labor (non-machine)	682.33	hrs	13.40	9,143	
Fuel - Diesel	125.12	gal	3.70	463	
Lube				69	
Machinery repair				82	
Interest on operating capital @ 5.75%				203	
TOTAL OPERATING COSTS/ACRE				13,460	
NET RETURNS ABOVE OPERATING COSTS				41,260	
CASH OVERHEAD COSTS:					
Liability Insurance				126	
Office Expense				350	
Watershed Fees				17	
Advertisement/Marketing				75	
Property Taxes				1,086	
Property Insurance				70	
Investment Repairs				126	
TOTAL CASH OVERHEAD COSTS/ACRE				1,850	
TOTAL CASH COSTS/ACRE				15,310	

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION
Table 13. CONTINUED
SIERRA NEVADA - Placer/Nevada Counties 2009

	Quantity Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
NON-CASH OVERHEAD COSTS (Capital Recovery)					
Land				4,750	
Deer Fence				206	
Boxes (30 lb)				426	
Tools - Shop/Field				160	
T-Tape				77	
Equipment				924	
TOTAL NON-CASH OVERHEAD COSTS/ACRE				6,543	
TOTAL COSTS/ACRE				21,853	
NET RETURNS/ ACRE				32,867	

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Table 14. MONTHLY CASH COSTS PER ACRE TO PRODUCE MELONS

SIERRA NEVADA – Placer/Nevada Counties 2009

Beginning OCT 08 Ending SEP 09	OCT 08	NOV 08	DEC 08	JAN 09	FEB 09	MAR 09	APR 09	MAY 09	JUN 09	JUL 09	AUG 09	SEP 09	TOTAL
Cultural:													
Land Prep: Disk	8												8
Cover Crop: Plant	87												87
Cover Crop: Mow					29								29
Cover Crop: Rototill					57								57
Fertilize: (Blood Meal)							818						818
Fertilize: 1X/2 Yr (Compost)							96						96
Fertilize: 1X/3 Yr (Rock Phosphate)							220						220
Amendment: (Lime)							50						50
Fertilize: Hand Application (Potassium Sulfate)							59						59
Land Prep: Rip 1X/5 Yr (two directions)							8						8
Fertilize: Incorporate							57						57
Irrigate: Lay Drip Tape (labor). Weed: Lay Mulch (labor, mulch)							356						356
Rodent: Gopher Control							47	147					194
Plant: Hand with Jab Planter								498					498
Irrigate:								80	62	62	62	15	281
Weed: Hand Hoe								965	965				1,930
Insect: Aphid (Neemix). Disease: Mildew (Neemix) Backpack										127	127		254
Insect: Squash Bug (vacuum)										27			27
TOTAL CULTURAL COSTS	95				86		1,711	1,690	1,027	215	189	15	5,027
Harvest:													
Pick: 3X per week										1,294	2,589	647	4,530
TOTAL HARVEST COSTS										1,294	2,589	647	4,530
Market:													
Packing/Sort										482	965	965	2,412
Wholesale: (Delivery)										15	70	35	119
Farmers Market (Delivery, Labor)										292	584	292	1,168
TOTAL MARKET COSTS										789	1,619	1,292	3,700
Interest on operating capital @ 5.75%	0	0	0	0	1	1	9	17	22	33	54	64	203
TOTAL OPERATING COSTS/ACRE	95	0	0	0	87	1	1,720	1,707	1,049	2,332	4,450	2,018	13,460
OVERHEAD:													
Liability Insurance								126					126
Office Expense	29	29	29	29	29	29	29	29	29	29	29	29	350
Watershed Fees				17									17
Advertisement/Marketing	6	6	6	6	6	6	6	6	6	6	6	6	75
Property Taxes				543						543			1,086
Property Insurance				35						35			70
Investment Repairs	11	11	11	11	11	11	11	11	11	11	11	11	126
TOTAL CASH OVERHEAD COSTS	46	46	46	641	46	46	46	172	46	624	46	46	1,850
TOTAL CASH COSTS/ACRE	141	46	46	642	132	47	1,766	1,879	1,095	2,956	4,496	2,064	15,310

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

Table 15. RANGING ANALYSIS - MELONS

SIERRA NEVADA - Placer/Nevada Counties 2009

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE MELONS

	YIELD (POUNDS/ACRE)						
	36,000	41,000	46,000	51,000	56,000	61,000	66,000
OPERATING COSTS/ACRE:							
Cultural Cost	5,027	5,027	5,027	5,027	5,027	5,027	5,027
Harvest Cost (Pick)	3,004	3,513	4,021	4,530	5,039	5,548	6,056
Market (Pack/Sort)	1,376	1,722	2,067	2,412	2,757	3,102	3,448
Market (Sell)	1,174	1,212	1,250	1,288	1,325	1,363	1,401
Interest on operating capital @ 5.75%	176	185	194	203	211	220	229
TOTAL OPERATING COSTS/ACRE	10,757	11,659	12,559	13,460	14,359	15,260	16,161
TOTAL OPERATING COSTS/POUND	0.30	0.28	0.27	0.26	0.26	0.25	0.24
CASH OVERHEAD COSTS/ACRE	1,831	1,838	1,844	1,850	1,856	1,862	1,867
TOTAL CASH COSTS/ACRE	12,588	13,497	14,403	15,310	16,215	17,122	18,028
TOTAL CASH COSTS/POUND	0.35	0.33	0.31	0.30	0.29	0.28	0.27
NON-CASH OVERHEAD COSTS/ACRE	6,358	6,422	6,484	6,543	6,600	6,654	6,706
TOTAL COSTS/ACRE	18,946	19,919	20,887	21,853	22,815	23,776	24,734
TOTAL COSTS/POUND	0.53	0.49	0.45	0.43	0.41	0.39	0.37

NET RETURNS PER ACRE ABOVE OPERATING COSTS

Melons	YIELD (POUNDS/ACRE)						
$/lb	36,000	41,000	46,000	51,000	56,000	61,000	66,000
0.50	7,243	8,841	10,441	12,040	13,641	15,240	16,839
0.70	14,443	17,041	19,641	22,240	24,841	27,440	30,039
0.90	21,643	25,241	28,841	32,440	36,041	39,640	43,239
1.10	28,843	33,441	38,041	42,640	47,241	51,840	56,439
1.30	36,043	41,641	47,241	52,840	58,441	64,040	69,639
1.50	43,243	49,841	56,441	63,040	69,641	76,240	82,839
1.70	50,443	58,041	65,641	73,240	80,841	88,440	96,039

NET RETURNS PER ACRE ABOVE CASH COSTS

Melons	YIELD (POUNDS/ACRE)						
$/lb	36,000	41,000	46,000	51,000	56,000	61,000	66,000
0.50	5,412	7,003	8,597	10,190	11,785	13,378	14,972
0.70	12,612	15,203	17,797	20,390	22,985	25,578	28,172
0.90	19,812	23,403	26,997	30,590	34,185	37,778	41,372
1.10	27,012	31,603	36,197	40,790	45,385	49,978	54,572
1.30	34,212	39,803	45,397	50,990	56,585	62,178	67,772
1.50	41,412	48,003	54,597	61,190	67,785	74,378	80,972
1.70	48,612	56,203	63,797	71,390	78,985	86,578	94,172

NET RETURNS PER ACRE ABOVE TOTAL COSTS

Melons	YIELD (POUNDS/ACRE)						
$/lb	36,000	41,000	46,000	51,000	56,000	61,000	66,000
0.50	-946	581	2,113	3,647	5,185	6,724	8,266
0.70	6,254	8,781	11,313	13,847	16,385	18,924	21,466
0.90	13,454	16,981	20,513	24,047	27,585	31,124	34,666
1.10	20,654	25,181	29,713	34,247	38,785	43,324	47,866
1.30	27,854	33,381	38,913	44,447	49,985	55,524	61,066
1.50	35,054	41,581	48,113	54,647	61,185	67,724	74,266
1.70	42,254	49,781	57,313	64,847	72,385	79,924	87,466

Price is weighted average based on 20% @ wholesale price and 80% @ retail (farmers' market) price

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Table 16. OPERATIONS WITH EQUIPMENT & MATERIAL INPUTS for MELONS

SIERRA NEVADA - Placer/Nevada Counties 2009

Operation	Operation Month	Equipment		Non-Mach Labor hrs/acre	Material	Broadcast Rate/acre	Unit
		Tractor	Implement				
Cultural:							
Land Prep: Disk	Oct	35HP	Disk				
Cover Crop: Plant	Oct	35HP	Seed Drill		Seed	100.00	lb
Cover Crop: Mow	Feb	35HP	Mower				
Cover Crop: Rototill	Feb	35HP	Rototiller				
Fertilize:	Apr	35HP	Spreader		Blood Meal	800.00	lb
Fertilize: 1X/2 Yrs	Apr	35HP	Compost Spreader		Compost	5.00	ton
Fertilize: 1X/3 Yrs	Apr	35HP	Spreader		Phosphate	667.00	lb
Fertilize:	Apr	35HP	Spreader		Lime	600.00	lb
Fertilize:	Apr			2.00	Potassium	50.00	lb
Land Prep: Rip 1X/5 Yr	Apr	35HP	Rip Shank				
Fertilize: Incorporate Fertilizer	Apr	35HP	Rototiller				
Weed: Lay Mulch. Irrigate: Lay T-Tape	Apr	35HP	Mulch Layer	3.00	Mulch	7,200.00	ft
					T-Tape	7,200.00	ft
Rodent: Gopher	Apr			3.50	Traps		
	May			11.00			
Plant:	May			21.00	Seed	1.00	lb
Irrigate:	May			4.00	Water	0.75	acre
Water use/cost is based on a per acre $ value	June			2.00	Water	1.00	acre
	July			2.00	Water	1.00	acre
	Aug			2.00	Water	1.00	acre
	Sept			0.50	Water	0.25	acre
Weed: Hand	May			72.00			
	June			72.00			
Insects/Disease: Aphid/Mildew (Neemix)	July			2.00	Neemix	1.00	pt
	Aug			2.00	Neemix	1.00	pt
Insect: Squash Bug (Hand Vacuum)	July			2.00			
Harvest: 3X/Week	July	35HP	Bin Trailer + Forks	72.00			
	Aug	35HP	Bin Trailer + Forks	144.00			
	Sept	35HP	Bin Trailer + Forks	36.00			
Pack/Sort	July			36.00			
	Aug			72.00			
	Sept			72.00			
Market: Wholesale	July			0.33			
	Aug			0.67	Cartons	66.00	
	Sept			0.33			
Market: Farmers Market	July	Pickup		12.00	Stall Rental		
					Customer Bags	4,800.00	each
	Aug	Pickup		24.00	Stall Rental		
					Customer Bags	3,200.00	each
	Sept	Pickup		12.00	Stall Rental		
					Customer Bags	3,200.00	each

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

Table 17. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS

SIERRA NEVADA - Placer/Nevada Counties 2009

						Cash Overhead		
Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Total
09	35 HP Tractor	15,000	20	1,925	1,118	69	85	1,272
09	Bin Trailer	1,250	20	65	96	5	7	108
09	Disk	2,100	20	109	162	9	11	182
09	Gandy Drop Spreader 6'	1,600	20	83	123	7	8	138
09	Mower-Flail 5'	3,250	20	169	250	14	17	281
09	Mulch Layer	1,500	20	78	115	6	8	130
09	Compost Spreader	6,500	20	339	500	28	34	562
09	Pickup 1/2 ton	32,000	5	14,342	4,732	190	232	5,153
09	Ripper (1 shank)	150	10	27	17	1	1	19
09	Rototiller 5'	4,545	20	237	350	20	24	393
09	Seed Drill 6'	10,100	20	526	777	44	53	874
09	Tractor Forks	250	20	13	19	1	1	22
TOTAL		78,245		17,913	8,259	394	481	9,134
		46,947		10,748	4,956	237	288	5,481

*Used to reflect a mix of new and used equipment

ANNUAL INVESTMENT COSTS

					Cash Overhead			
Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Repairs	Total
INVESTMENT								
Deer Fence: 2,142 ft	6,426	10		822	26	32	128	1,009
Greenhouse Planting Flats (10 in x 20 in)	114	3		42	0	0	2	44
Greenhouse (24 ft x 48 ft)	3,500	5		803	14	18	70	905
Land 10 acres	1,000,000	30	1,000,000	47,500	0	10,000	0	57,500
Pack Boxes 30 lb (400)	10,000	10		1,279	41	50	200	1,570
Pack Cartons 15 lb (200)	200	5		46	1	1	4	52
T-Posts 7 ft (1,404)	9,126	20		717	0	0	182	899
T-Tape (Tomatoes, 10,800 ft)	212	2		114	0	0	5	119
T-Tape (Squash, Melons, 14,400 ft)	288	2		154	0	0	5	159
Tools: Shop/Field	5,000	10		640	21	25	100	785
TOTAL INVESTMENT	1,034,866		1,000,000	52,116	103	10,126	696	63,041

ANNUAL BUSINESS OVERHEAD

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Advertise/Marketing	4	acre	75.00	300
Liability Insurance	4	acre	126.00	504
Office Expense	4	acre	350.00	1,400
Watershed Fees	4	acre	17.25	69

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Table 18. HOURLY EQUIPMENT COSTS

SIERRA NEVADA - Placer/Nevada Counties 2009

		Actual		Cash Overhead		Operating			
Yr	Description	Hours Used	Capital Recovery	Insur-ance	Taxes	Repairs	Fuel & Lube	Total Oper.	Total Costs/Hr.
09	35 HP Tractor	240	2.87	0.18	0.22	0.64	7.31	7.95	11.22
09	Bin Trailer	123	0.47	0.03	0.03	0.19	0.00	0.19	0.72
09	Disk	2	51.84	2.91	3.54	0.32	0.00	0.32	58.61
09	Gandy Drop Spreader 6'	17	6.99	0.39	0.48	0.60	0.00	0.60	8.46
09	Mower-Flail 5'	4	37.51	2.10	2.57	1.45	0.00	1.45	43.63
09	Mulch Layer	4	17.31	0.97	1.18	0.17	0.00	0.17	19.63
09	Compost Spreader	2	187.52	10.52	12.82	2.44	0.00	2.44	213.30
09	Pickup 1/2 ton	73	39.07	1.57	1.91	2.22	9.82	12.04	54.59
09	Ripper (1 shank)	2	5.29	0.23	0.27	0.04	0.00	0.04	5.83
09	Rototiller 5'	18	11.65	0.65	0.80	1.25	0.00	1.25	14.35
09	Seed Drill 6'	2	214.85	12.05	14.69	2.54	0.00	2.54	244.13
09	Tractor Forks	123	0.09	0.01	0.01	0.04	0.00	0.04	0.15