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**UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION**

**2012**

**SAMPLE COSTS TO PRODUCE  
FRESH MARKET**

# **BROCCOLI**



**CENTRAL COAST REGION – San Luis Obispo County**

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### INTRODUCTION

Sample costs to produce broccoli in the Central Coast Region are presented in this study. The study is intended as a guide only, and can be used in making production decisions, determining potential returns, preparing budgets and evaluating production loans. The practices described are based on production procedures considered typical for this crop and area but will not apply to every situation. Sample costs for labor, materials, equipment and custom services are based on current figures. A column titled, “*Your Costs*”, in Table 1 and Table 2 is provided for you to enter your costs.

The hypothetical farm operation, production practices, overhead, and calculations are described under the assumptions. For additional information or explanation of calculations used in the study call the Department of Agricultural and Resource Economics, at University of California, Davis at (530) 752-3589 or the San Luis Obispo County UC Cooperative Extension office at (805) 781-5940.

Sample Cost of Production Studies for many commodities can be downloaded at <http://coststudies.ucdavis.edu>, requested through the UC Davis Department of Agricultural and Resource Economics at (530) 752-3589, or requested from your local county UC Cooperative Extension office.

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## ASSUMPTIONS

The assumptions refer to Tables 1 through 7 and pertain to sample costs to produce fresh market broccoli in San Luis Obispo County in the Central Coast Region. The cultural practices described and materials used are considered typical for this crop and area. The costs, practices, and materials in this study will not be applicable to every situation, or used during every year. Cultural practices and costs for the production of fresh market broccoli vary by grower and region. Variations can be significant within the region and season due to variables such as weather, soil, insect and disease pressure. The practices and inputs used in this cost study serve 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 in this study consists of 41 contiguous acres, of which 40 acres are planted to fresh market broccoli. The remaining one acre is used for shop area and equipment storage. The farm will normally produce two crops per year. In this study, the costs are for one broccoli crop. Costs that affect both crops are allocated 50% to each crop.

### Cultural Practices and Material Inputs

**Land Preparation.** Primary tillage including disking, rolling, subsoiling, land leveling, and listing beds occurs in June of the planting year. The crop year in this study is from June through October. Fields are disced and rolled two times, ripped, disced and rolled two more times, landplaned with three passes, chiseled three times, and disced two more times. Following the tillage operations, a custom operator lists the 38-inch beds.

**Stand Establishment.** The Heritage broccoli variety is transplanted using contract labor and machines on 38-inch beds. The plants are transplanted to the field at 39,000 plants per acre using 8 1/2-inch plant spacing, with 2 rows per bed. The field is planted over a period of time to accommodate markets.

**Soil Amendments and Fertilization.** A gypsum and lime mixture is applied once every year in July. The cost of the soil amendment includes the material delivery and applicator. In this study, one-half of the total cost of lime and gypsum is allocated to this crop. In July, 3-9-9 is custom applied when beds are listed at a rate of 390 pounds per acre (35 gallons). In August, 18-0-5-4 is custom applied to the side-dress at a rate of 385 pounds per acre (35 gallons). Growers may apply additional fertilizers or soil amendments, such as humic acid, however this should be based on soil tests to determine pH and nutrient levels.

**Irrigation.** The water is pumped from wells at a cost of \$70.00 per acre-foot, or \$5.83 per acre-inch. Irrigation begins immediately after planting, using a sprinkler irrigation system. The field is irrigated once every week for 10 weeks, with sprinklers operating for 24 hours at each irrigation, until harvest. Approximately 3.0 acre-inches of water are applied at each irrigation, for a season total of 2.5 acre-feet or 30 acre-inches. Water costs will vary throughout the region, depending upon pumping setup as well as per acre assessments by various water agencies.

**Pest Management.** The pesticides and rates mentioned in this cost study are listed in *Integrated Pest Management for Cole Crops and Lettuce* and *UC Pest Management Guidelines: Cole Crops*. For more information on pesticides available, pest identification, monitoring, and management visit the UC IPM website at [www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu). Written recommendations are required for many pesticides and are made by licensed

pest control advisors. For information and pesticide use permits, contact the local county agricultural commissioner's office.

**Weeds.** Dacthal, a pre-plant herbicide, is applied to the field at a rate of seven pounds per acre in July. Additionally, Goal Tender is applied pre-plant at a rate of 8 ounces per acre in July. After planting, Goal Tender is applied again at a rate of 8 ounces per acre in August.

**Insects and Diseases.** Integrated pest management is used to control various diseases, insects and related pests. Admire is injected into the soil at pre-plant in July, at a rate of 10 ounces per acre to control aphids. Leverage is applied at 3 ounces per acre, Synapse WG is applied at 2 ounces per acre, and an adjuvant (LI 700) is applied at a rate of 8 ounces per acre in September to control for worms and aphids. To minimize head rot, a fungicide, Quadris, is applied at a rate of 14 ounces per acre in September.

**Harvest.** The broccoli crop is hand harvested approximately 10 weeks after transplanting. Cool season plantings may require more weeks to mature but as the season warms, time to maturity decreases. Harvesting is done under contract and the broccoli is packed in the field. Field labor costs \$1.63 per box, and boxes cost \$1.09 each. The supplies used for the box (machines, pallets, straps and hauling) cost an additional \$0.70 per box. This brings the field harvest cost to \$3.42 per packed box. A packed box of broccoli weighs 23 pounds. Transportation costs vary depending on the distance to the cooler, but in this study are included in the above costs. Most growers are within a 25-mile radius of the cooler. Cooling and palletizing cost an additional \$0.73 per box, and selling costs total \$0.60 per box; a subtotal of \$1.33 per box to cool, palletize and sell. The total harvest cost is \$4.15 per box.

**Yields.** Average fresh market broccoli yields in the Central Coast over the past five years, as shown in Table A, ranged from 526 to 689 twenty-three pound boxes per acre. The crop yield used in this study is 582 twenty-three pound boxes or 6.05 ton per acre (5-year average).

**Returns.** Average prices to growers in the Central Coast for fresh market broccoli in the last five years are shown in Table A. The return price in this study is \$8.23 (5-year average) per box. The ranging analysis in Table 4 shows the net returns above operating costs, cash costs and total costs for a range of prices and yields.

**Table A. Average Yield and Price for Fresh Market Broccoli, Central Coast 2006 - 2010 <sup>1/</sup>**

	Yield	Revenue
<u>Year</u>	<u>Boxes/Acre</u>	<u>\$/Box</u>
2006	689	8.22
2007	585	8.16
2008	565	8.32
2009	547	8.52
2010	526	7.95
Average	582	8.23

<sup>1/</sup> Source: Agricultural Commissioner: San Luis Obispo. Boxes = 23 lbs.

**Pickup.** The grower uses the pickup for business and personal use. The assumed business use is 24,750 miles for the year. Half of the cost is allocated to this crop.

### Labor, Equipment, and Interest

**Labor.** Labor rates of \$19.53 per hour for machine operators and \$12.33 for general labor (irrigation and non-machine labor) are used in this study. These rates include payroll overhead of 37%. The basic hourly wages are \$14.25 for machine operators and \$9.00 for general labor. The overhead cost includes the employers' share of federal and California state payroll taxes, workers' compensation insurance for field crops, and a percentage for

other possible benefits. Workers' compensation insurance costs will vary among growers, but for this study the cost is based upon the average industry final rate as of January 1, 2011 (personal email from California Department of Insurance, March 2011, unreferenced). Labor for operations involving machinery are 20% higher than the operation to account for the extra labor involved in equipment set up, moving, maintenance, work breaks, and field repair.

Wages for management are not included as cash cost. Any return above total costs is considered a return to management and risk. However, growers wanting to account for management may wish to add a fee. The manager makes all production decisions including cultural practices, action to be taken on pest management recommendations, and labor.

**Equipment Operating Costs.** Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by the American Society of Agriculture Engineers (ASAE). Fuel and lubrication costs are also determined by ASAE equations based on maximum Power Take-Off (PTO) horsepower, and fuel type. Average prices in 2011 on-farm delivery of diesel and gasoline are \$3.43 and \$3.82 per gallon, respectively. Gasoline also includes federal and state excise tax, which can be refunded for on-farm use when filing your income tax. 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 rate will vary depending upon various factors. The rate in this study is considered a typical lending rate by a farm lending agency as of January 2012.

**Risk.** Risks associated with broccoli production are not assigned a production cost. While this study makes every effort to model a production system based on typical, real world practices, it cannot fully represent financial, agronomic and market risks that affect the profitability and economic viability of fresh market vegetable production. The market for fresh vegetables is volatile for both price and quantity. A market channel should be determined before any broccoli production begins.

### **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. Overhead cash costs are split across the two crops, thus one-half of the total cost is applied to this study.

**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. Liability insurance covers accidents on the farm and costs \$608 for the entire farm or \$14.83 per acre.

**Field Sanitation.** Sanitation services provide portable toilets and washbasins to the farm. The cost includes a double toilet with washbasins, delivery and pickup, and weekly servicing. Costs also include soap or other suitable cleansing agent, and single use towels. Growers using contract labor may not incur this cost; the contractor will usually supply the sanitation facilities.

**Office Expense.** Annual office and business expenses are estimated to be \$300 per acre. These expenses include office supplies, telephones, bookkeeping, accounting, legal fees, road maintenance, etc.

**Rent.** Broccoli land rent for San Luis Obispo and Santa Barbara Counties ranges from \$1,300 to \$1,800 per acre. In this study, land rented for broccoli production in the San Luis Obispo region is \$1,325 per acre. Rents vary by area and ground quality. The land rented includes developed wells and an irrigation system. The landowner incurs all costs for the land and the irrigation system.

**Supervisor Salaries.** Wages for managers are not included as cash cost. Any returns above total costs are considered a return to management.

**Investment Repairs.** Repair costs are the annual maintenance costs for investments in non-cash overhead. The repairs are calculated as a percentage of the new cost distributed over the investment life. Annual repairs in this study are calculated as 2% of the new cost.

**Food Safety Program.** Many growers of fresh market commodities such as leafy greens and broccoli incorporate and participate in food safety programs for their operations. Part of a food safety program is participation in third party (independent) audits that are done to ensure the safety of fresh products and accommodate buyer requests, and to enhance marketability of the crop. Farms may have their own program, work through the processor or a combination of the two. Costs will vary depending upon the farm or processor and inspection circumstances. For this study, we assume that a grower will participate in the 3 following programs: USDA Good Agricultural Practices (GAP) Program, which costs approximately \$500 annually, PRIMUS Certified, which costs approximately \$580 annually, and monthly water samples to ensure no water contamination, which cost approximately \$45 per month.

### **Non-cash Overhead**

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). Put another way, 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. The calculation for 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 equal to the purchase price because land does not depreciate.

*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 2012.

**Building.** The metal building or buildings are on a cement slab and comprise 2,400 square feet.

**Tools.** This includes shop and field tools used on the farm. The value is estimated and does not represent any specific data.

**Fuel Tanks.** The grower is assumed to own one 500-gallon fuel tank using gravity feed on metal stands. The tank is setup on a cement containment pad that meets federal, state, and county regulations.

**Irrigation/Pipe/Trailers.** The irrigation system is maintained by the owner and included in the land rental cost. The grower owns 2,850 feet of sprinkler pipe, as well as three pipe trailers for hauling the pipe to the field. Irrigation water is pumped from a well and delivered to the fields using a sprinkler system. In this study, water is pumped from a depth of 56 feet by a 225 HP pump. The grower pays the pumping cost.

**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 than the sum of the components.

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UC COOPERATIVE EXTENSION  
Table 1. COSTS PER ACRE TO PRODUCE BROCCOLI  
CENTRAL COAST - San Luis Obispo County 2012

Operation	Operation Time (Hrs/A)	Cash and Labor Costs per Acre					Total Cost	Your Cost
		Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/ Rent			
<b>Cultural:</b>								
Chop - 1X	0.17	4	10	0	0	14		
Disc & Roll - 2X	1.00	23	56	0	0	79		
Chisel - 2X	0.35	8	18	0	0	26		
Rip - 1X	0.61	14	33	0	0	47		
Landplane - 3X	0.36	9	19	0	0	28		
Chisel - 3X	0.17	4	9	0	0	13		
Pre-plant Herbicide (Dacthal, Goal Tender)	0.10	2	2	148	0	153		
Pre-plant Insecticide (Admire)	0.17	4	4	34	0	42		
Soil Amendments (Lime & Gypsum)	0.10	2	2	23	0	27		
List Beds & Fertilize Listing (3-9-9)	0.00	0	0	91	24	115		
Shape Beds & Roll	0.23	5	5	0	0	10		
Transplant	0.00	0	0	234	244	478		
Irrigate	5.00	62	0	175	0	237		
Fertilize Side dress (18-0-5-4)	0.00	0	0	108	23	130		
Herbicide Line (Goal Tender)	0.10	2	2	16	0	21		
Insecticide (Leverage, Synapse WG, LI 700)	0.10	2	2	315	0	320		
Fungicide (Quadris)	0.10	2	2	60	0	64		
Food Safety Certifications	0.00	0	0	20	0	20		
Pickup use	0.25	6	5	0	0	10		
<b>TOTAL CULTURAL COSTS</b>	<b>8.80</b>	<b>151</b>	<b>169</b>	<b>1,224</b>	<b>291</b>	<b>1,834</b>		
<b>Harvest:</b>								
Cut, Band, Pack, Haul	0.00	0	0	0	2,274	2,274		
Cooling, Palletizing, Selling Fee	0.00	0	0	0	884	884		
<b>TOTAL HARVEST COSTS</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,159</b>	<b>3,159</b>		
Interest on Operating Capital at 5.75%						45		
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>8.80</b>	<b>151</b>	<b>169</b>	<b>1,224</b>	<b>3,449</b>	<b>5,038</b>		
<b>CASH OVERHEAD:</b>								
Field Sanitation						13		
Land Rent						663		
Liability Insurance						7		
Office Expense						150		
Property Taxes						7		
Property Insurance						7		
Investment Repairs						17		
<b>TOTAL CASH OVERHEAD COSTS/ACRE</b>						<b>863</b>		
<b>TOTAL CASH COSTS/ACRE</b>						<b>5,901</b>		
<b>NON-CASH OVERHEAD:</b>								
		Per producing Acre		Annual Cost Capital Recovery				
Fuel Tank - 500 gal		18		1		1		
Pipe Sprinkler - 2,850'		41		5		5		
Shop Building - 2,400'		600		38		38		
Shop Tools		61		5		5		
Trailer - Pipe #1		26		4		4		
Trailer - Pipe #2		26		4		4		
Trailer - Pipe #3		26		4		4		
Equipment		1,151		107		107		
<b>TOTAL NON-CASH OVERHEAD COSTS</b>		<b>1,948</b>		<b>168</b>		<b>168</b>		
<b>TOTAL COSTS/ACRE</b>						<b>6,069</b>		

UC COOPERATIVE EXTENSION  
 Table 2. COSTS AND RETURNS PER ACRE TO PRODUCE BROCCOLI  
 CENTRAL COAST - San Luis Obispo County 2012

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
<b>GROSS RETURNS</b>					
Broccoli	582	box	8.23	4,790	
<b>OPERATING COSTS</b>					
<b>Soil Amendments &amp; Fertilizer:</b>				222	
Gypsum/Lime Mixture	0.50	ton	45.24	23	
3-9-9	390.00	lb	0.23	91	
18-0-5-4	385.00	lb	0.28	108	
<b>Custom:</b>				3,206	
List Beds/Fertilize (Listing)	1.00	acre	24.00	24	
Fertilize (Sidedress)	1.00	acre	22.75	23	
Harvest: Cut, Bunch, Band, Pack, Haul	665.00	box	3.42	2,274	
Cooling, Palletizing, Selling Fee	665.00	box	1.33	884	
<b>Seed:</b>				234	
Broccoli Plants	39.00	thou	6.00	234	
<b>Herbicide:</b>				165	
Dacthal	7.00	lb	18.86	132	
Goal Tender	16.00	oz	2.04	33	
<b>Insecticide:</b>				349	
Admire	10.00	oz	3.37	34	
Leverage	3.00	oz	3.88	12	
Synapse WG	2.00	oz	9.79	20	
LI 700 (Adjuvant)	8.00	oz	35.50	284	
<b>Fungicide:</b>				60	
Quadris	14.00	oz	4.28	60	
<b>Contract:</b>				244	
Planting	39.00	thou	6.25	244	
<b>Irrigation:</b>				175	
Water	30.00	ac/in	5.83	175	
<b>Food Safety Certification:</b>				20	
USDA GAP Program	0.50	acre	12.50	6	
PRIMUS Certification	0.50	acre	14.50	7	
Water Samples	0.50	acre	13.50	7	
<b>Labor:</b>				151	
Equipment Operator Labor	4.56	hrs	19.53	89	
Irrigation Labor	5.00	hrs	12.33	62	
<b>Machinery:</b>				169	
Fuel-Gas	0.94	gal	3.82	4	
Fuel-Diesel	36.65	gal	3.43	126	
Lube				19	
Machinery Repair				20	
Interest on Operating Capital at 5.75%				45	
<b>TOTAL OPERATING COSTS/ACRE</b>				5,038	
<b>NET RETURNS ABOVE OPERATING COSTS</b>				-248	

UC COOPERATIVE EXTENSION  
 Table 2. Continued  
 CENTRAL COAST - San Luis Obispo County 2012

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Broccoli	582	box	8.23	4,790	
CASH OVERHEAD COSTS:					
Field Sanitation				13	
Land Rent				663	
Liability Insurance				7	
Office Expense				150	
Property Taxes				7	
Property Insurance				7	
Investment Repairs				17	
TOTAL CASH OVERHEAD COSTS/ACRE				863	
TOTAL CASH COSTS/ACRE				5,901	
NON-CASH OVERHEAD COSTS (Capital Recovery):					
Fuel Tank - 500 gal				1	
Pipe Sprinkler – 2,850'				5	
Shop Building - 2,400'				38	
Shop Tools				5	
Trailer - Pipe #1				4	
Trailer - Pipe #2				4	
Trailer - Pipe #3				4	
Equipment				107	
TOTAL NON-CASH OVERHEAD COSTS				168	
TOTAL COST/ACRE				6,069	
NET RETURNS ABOVE TOTAL COST				-1,280	

UC COOPERATIVE EXTENSION  
 Table 3. MONTHLY CASH COSTS PER ACRE TO PRODUCE BROCCOLI  
 CENTRAL COAST - San Luis Obispo County 2012

Beginning 06-12	JUN	JUL	AUG	SEP	OCT	TOTAL
Ending 10-12	12	12	12	12	12	
<b>Cultural:</b>						
Chop - 1X	14					14
Disc & Roll - 2X	79					79
Chisel - 2X	26					26
Rip - 1X	47					47
Landplane - 3X	28					28
Chisel - 3X	13					13
Pre-plant Herbicide (Dacthal, Goal Tender)		153				153
Pre-plant Insecticide (Admire)		42				42
Soil Amendments (Lime & Gypsum)		27				27
List Beds & Fertilize Listing (3-9-9)		115				115
Shape Beds & Roll		10				10
Transplant		478				478
Irrigate		24	95	95	24	237
Fertilize Sidedress (18-0-5-4)			130			130
Herbicide Line (Goal Tender)			21			21
Insecticide (Leverage, Synapse WG, LI 700)				320		320
Fungicide (Quadris)				64		64
Food Safety Certifications	4	4	4	4	4	20
Pickup use	2	2	2	2	2	10
<b>TOTAL CULTURAL COSTS</b>	<b>213</b>	<b>855</b>	<b>252</b>	<b>485</b>	<b>30</b>	<b>1,834</b>
<b>Harvest:</b>						
Cut, Band, Pack, Haul					2,274	2,274
Cooling, Palletizing, Selling Fee					884	884
<b>TOTAL HARVEST COSTS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,159</b>	<b>3,159</b>
Interest on Operating Capital at 5.75%	1	5	6	9	24	45
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>214</b>	<b>860</b>	<b>258</b>	<b>493</b>	<b>3,212</b>	<b>5,038</b>
<b>CASH OVERHEAD</b>						
Field Sanitation						13
Land Rent						663
Liability Insurance						7
Office Expense						150
Property Taxes						7
Property Insurance			3			7
Investment Repairs	3	3	3	3	3	17
<b>TOTAL CASH OVERHEAD COSTS</b>	<b>3</b>	<b>3</b>	<b>7</b>	<b>3</b>	<b>3</b>	<b>863</b>
<b>TOTAL CASH COSTS/ACRE</b>	<b>217</b>	<b>863</b>	<b>265</b>	<b>497</b>	<b>3,216</b>	<b>5,901</b>

UC COOPERATIVE EXTENSION  
Table 4. RANGING ANALYSIS  
CENTRAL COAST - San Luis Obispo County 2012

COST PER ACRE AT VARYING YIELDS TO PRODUCE BROCCOLI

	YIELD (23 lb boxes/acre)							
	500	550	<b>582</b>	600	650	700	750	800
<b>OPERATING COSTS:</b>								
Cultural	1,834	1,834	1,834	1,834	1,834	1,834	1,834	1,834
Harvest	2,714	2,985	3,159	3,256	3,528	3,799	4,071	4,342
Interest on operating capital at 5.75%	43	44	45	45	47	48	49	51
TOTAL OPERATING COSTS/ACRE	4,591	4,863	5,038	5,136	5,409	5,681	5,954	6,227
TOTAL OPERATING COSTS/BOX	9.18	8.84	8.66	8.56	8.32	8.12	7.94	7.78
<b>CASH OVERHEAD COSTS/ACRE</b>								
CASH OVERHEAD COSTS/ACRE	863	863	863	863	863	863	863	863
TOTAL CASH COSTS/ACRE	5,454	5,727	5,901	5,999	6,272	6,545	6,817	7,090
TOTAL CASH COSTS/BOX	10.91	10.41	10.14	10.00	9.65	9.35	9.09	8.86
<b>NON-CASH OVERHEAD COSTS/ACRE</b>								
NON-CASH OVERHEAD COSTS/ACRE	168	168	168	168	168	168	168	168
TOTAL COSTS/ACRE	5,622	5,895	6,069	6,167	6,440	6,713	6,985	7,258
Total Costs/box	11.24	10.72	10.43	10.28	9.91	9.59	9.31	9.07

NET RETURNS PER ACRE ABOVE OPERATING COSTS

PRICE (\$/box)	YIELD (23 lb boxes/acre)							
	500	550	<b>582</b>	600	650	700	750	800
6.00	-1,591	-1,563	-1,546	-1,536	-1,509	-1,481	-1,454	-1,427
7.00	-1,091	-1,013	-964	-936	-859	-781	-704	-627
8.00	-591	-463	-382	-336	-209	-81	46	174
<b>8.23</b>	-476	-337	-248	-198	-59	80	219	358
9.00	-91	87	200	264	442	619	796	974
10.00	410	637	782	864	1,092	1,319	1,546	1,774
11.00	910	1,187	1,364	1,464	1,742	2,019	2,296	2,574

NET RETURNS PER ACRE ABOVE CASH COSTS

PRICE (\$/box)	YIELD (23 lb boxes/acre)							
	500	550	<b>582</b>	600	650	700	750	800
6.00	-2,454	-2,427	-2,409	-2,399	-2,372	-2,345	-2,317	-2,290
7.00	-1,954	-1,877	-1,827	-1,799	-1,722	-1,645	-1,567	-1,490
8.00	-1,454	-1,327	-1,245	-1,199	-1,072	-945	-817	-690
<b>8.23</b>	-1,339	-1,200	-1,111	-1,061	-922	-784	-645	-506
9.00	-954	-777	-663	-599	-422	-245	-67	110
10.00	-454	-227	-81	1	228	455	683	910
11.00	46	323	501	601	878	1,155	1,433	1,710

NET RETURNS PER ACRE ABOVE TOTAL COSTS

PRICE (\$/box)	YIELD (23 lb boxes/acre)							
	500	550	<b>582</b>	600	650	700	750	800
6.00	-2,622	-2,595	-2,577	-2,567	-2,540	-2,513	-2,485	-2,458
7.00	-2,122	-2,045	-1,995	-1,967	-1,890	-1,813	-1,735	-1,658
8.00	-1,622	-1,495	-1,413	-1,367	-1,240	-1,113	-985	-858
<b>8.23</b>	-1,507	-1,368	-1,279	-1,229	-1,090	-952	-813	-674
9.00	-1,122	-945	-831	-767	-590	-413	-235	-58
10.00	-622	-395	-249	-167	60	287	515	742
11.00	-122	155	333	433	710	987	1,265	1,542

UC COOPERATIVE EXTENSION

Table 5. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS

CENTRAL COAST - San Luis Obispo County 2012

ANNUAL EQUIPMENT COSTS

Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Cash Overhead		Total
						Insur- ance	Taxes	
12	105 HP 2WD Tractor	57,609	10	17,017	6,002	373	373	6,748
12	235 4WD Tractor	195,146	15	37,991	16,690	1,166	1,166	19,022
12	Bed Shaper 4R 13'	5,250	12	727	538	30	30	597
12	Chisel - 16'	7,549	12	1,046	773	43	43	859
12	Disc - Offset 16'	23,617	8	5,332	3,054	145	145	3,343
12	Mower-Flail 12'	14,400	10	2,547	1,637	85	85	1,807
12	Pickup	28,000	5	12,549	4,140	203	203	4,546
12	Ringroller - 16'	9,400	10	1,662	1,069	55	55	1,180
12	Roller - Flat 16'	5,300	12	734	543	30	30	603
12	Sprayer (Boom) - 21'	4,600	10	813	523	27	27	577
12	Subsoiler - 14'	14,828	10	2,622	1,686	87	87	1,861
12	Triplane - 16'	20,109	12	2,785	2,059	114	114	2,288
TOTAL		385,808		85,826	38,715	2,358	2,358	43,431
60% of new cost*		231,485		51,496	23,229	1,415	1,415	26,059

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

ANNUAL INVESTMENT COSTS

Description	Price	Yrs Life	Salvage Value	Capital Recovery	Cash Overhead			Total
					Insur- ance	Taxes	Repairs	
INVESTMENT								
Fuel Tank - 500 gal	1,500	30	350	89	7	9	70	176
Pipe Sprinkler - 2,850'	3,380	10	338	405	15	19	68	507
Shop Building - 2,400'	49,162	30	0	3,108	197	246	983	4,534
Shop Tools	5,000	20	500	377	22	28	125	552
Trailer - Pipe #1	2,100	7	210	334	9	12	42	396
Trailer - Pipe #2	2,100	7	210	334	9	12	42	396
Trailer - Pipe #3	2,100	7	210	334	9	12	42	396
TOTAL INVESTMENT	65,342		1,818	4,980	270	336	1,372	6,958

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/		Price/ Unit	Total Cost
	Farm	Unit		
Field Sanitation	41	acre	25.26	1,036
Land Rent	41	acre	1325.00	54,325
Liability Insurance	41	acre	14.83	608
Office Expense	41	acre	300.00	12,300

UC COOPERATIVE EXTENSION  
 Table 6. HOURLY EQUIPMENT COSTS  
 CENTRAL COAST - San Luis Obispo County 2012

COSTS PER HOUR								
Yr Description	Actual	Cash Overhead			Operating			Total Costs/Hr.
	Hours Used	Capital Recovery	Insur- ance	Taxes	Lube & Repairs	Fuel	Total Oper.	
12 105 HP 2WD Tractor	39	3.54	0.22	0.22	4.35	14.32	18.66	22.65
12 235 4WD Tractor	117	25.68	1.79	1.79	7.65	38.22	45.87	75.13
12 Bed Shaper 4R 13'	9	1.94	0.11	0.11	1.10	0.00	1.10	3.26
12 Chisel - 16'	28	2.48	0.14	0.14	1.42	0.00	1.42	4.18
12 Disc - Offset 16'	40	13.10	0.62	0.62	9.62	0.00	9.62	23.96
12 Mower-Flail 12'	7	4.91	0.25	0.25	6.07	0.00	6.07	11.49
12 Pickup	10	9.03	0.44	0.44	3.95	14.33	18.27	28.19
12 Ringroller - 16'	40	3.21	0.17	0.17	1.08	0.00	1.08	4.62
12 Roller - Flat 16'	9	3.46	0.19	0.19	1.06	0.00	1.06	4.91
12 Sprayer (Boom) - 21'	16	2.04	0.11	0.11	1.21	0.00	1.21	3.46
12 Subsoiler - 14'	24	5.06	0.26	0.26	3.39	0.00	3.39	8.97
12 Triplane - 16'	15	7.37	0.41	0.41	4.58	0.00	4.58	12.78

UC COOPERATIVE EXTENSION  
 Table 7. OPERATIONS WITH EQUIPMENT  
 CENTRAL COAST - San Luis Obispo County 2012

Operation	Operation		Implement	Material	Rate/		
	Month	Tractor			acre	Unit	
Chop 1X	June	235 4WD Tractor	Mower-Flail 12'				
Disc & Roll 2X	June	235 4WD Tractor	Disc - Offset 16'				
			Ringroller - 16'				
	June	235 4WD Tractor	Disc - Offset 16'				
			Ringroller - 16'				
	June	235 4WD Tractor	Disc - Offset 16'				
			Ringroller - 16'				
Chisel 2X	June	235 4WD Tractor	Chisel - 16'				
Rip 1X	June	235 4WD Tractor	Subsoiler - 14'				
Landplane 3X	June	235 4WD Tractor	Triplane - 16'				
Chisel 3X	June	235 4WD Tractor	Chisel - 16'				
Pre-plant Herbicide	July	105 HP 2WD Tractor	Sprayer (Boom) - 21'	Dacthal	7.00	lb	
				Goal Tender	8.00	oz	
Pre-plant Insecticide	July	105 HP 2WD Tractor	Chisel - 16'	Admire	10.00	oz	
Soil Amendments	July	105 HP 2WD Tractor		Gypsum/Lime Mixture	0.50	ton	
List Bed & Fertilize Listing	July			3-9-9	390.00	lb	
				Custom	List Beds/Fertilize (Listing)	1.00	acre
Shape beds & roll	July	105 HP 2WD Tractor	Roller - Flat 16'				
			Bed Shaper 4R 13'				
Transplanting	July			Broccoli Plants	39.00	thou	
				Planting	39.00	thou	
Irrigate	July			Water - SLO	3.00	acin	
	Aug			Water - SLO	3.00	acin	
	Aug			Water - SLO	3.00	acin	
	Aug			Water - SLO	3.00	acin	
	Aug			Water - SLO	3.00	acin	
	Sept			Water - SLO	3.00	acin	
	Sept			Water - SLO	3.00	acin	
	Sept			Water - SLO	3.00	acin	
	Sept			Water - SLO	3.00	acin	
	Oct			Water - SLO	3.00	acin	
	Fertilize (Side dress)	Aug			18-0-5-4	385.00	lb
					Custom	Fertilize (Sidedress)	1.00
Herbicide (Line)	Aug	105 HP 2WD Tractor	Sprayer (Boom) - 21'	Goal Tender	8.00	oz	
Insecticide	Sept	105 HP 2WD Tractor	Sprayer (Boom) - 21'	Leverage	3.00	oz	
				Synapse WG	2.00	oz	
				Li 700	8.00	oz	
Fungicide	Sept	105 HP 2WD Tractor	Sprayer (Boom) - 21'	Quadris	14.00	oz	
Food Safety Certifications	Sept			USDA GAP Program	0.50	acre	
				PRIMUS Certification	0.50	acre	
				Water Samples	0.50	acre	
Pickup use	Sept		Pickup 1/2 Ton				
Cut, band, pack, haul	Oct			Cut, Band, Pack, Haul	665.00	box	
Cool, Palletize, Sell	Oct			Cool, Palletize, Sell	665.00	box	