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UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

2001

SAMPLE COSTS TO PRODUCE  
FRESH MARKET

# ***BROCCOLI***



**CENTRAL COAST REGION – Monterey County**

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# UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

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### INTRODUCTION

The 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 “*Your Costs*” column in Tables 1 and 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, University of California, Davis, California, (530) 752-3589 or the Monterey County UC Cooperative Extension office, (831) 759-7350.

Sample Cost of Production Studies from 1931 to current for many commodities are available and can be requested through the Department of Agricultural and Resource Economics, UC Davis, (530) 752-1515. Current studies, those produced during the last five years, can be obtained from selected county UC Cooperative Extension offices or downloaded from the department website <http://coststudies.ucdavis.edu>.

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## ASSUMPTIONS

The following assumptions pertain to sample costs to produce fresh market broccoli in the Central Coast Region – Monterey County. Practices described are not recommendations by the University of California, but represent production procedures 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, and variations can be significant. The practices and inputs used in this cost study serve as a guide only. **The use of trade names 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.**

**Farm.** The hypothetical farm in this study is based on a 1,200 non-contiguous acre vegetable crop operation of which 400 acres are planted to fresh market broccoli. Other crops grown are cauliflower, lettuce and celery. The farm will normally produce two to two and one-half crops per year on each field. 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 which includes discing, rolling, subsoiling, land leveling, and listing beds occurs in October and November of the year preceding planting. The crop year in this study is from November through October. Fields are subsoiled, disced and rolled two times, then chiseled twice, followed by two passes with a landplane, and a single discing. A custom operator lists the 40-inch beds and incorporates the preplant fertilizer.

**Stand Establishment.** A hybrid broccoli variety is direct seeded using a four-bed planter in double rows on 40-inch beds. Fields are planted to a stand of 69,700 plants per acre at a 4 1/2-inch plant spacing. The field is planted over a period of time to accommodate the markets.

**Fertilization.** Three ton of manure every two years is broadcast over the field prior to the primary tillage operations and is included in this study as an annual operation and the cost is split between the two crops. A dry fertilizer 15-15-15 at 400 pounds per acre (60 units N) is applied at listing. A total of 160 units of N is sidedressed in two applications as liquid AN-20 for a seasonal total of 220 units of N. The first sidedress application is approximately 45 days after planting.

**Irrigation.** The water is pumped from wells and cost \$55.00 per acre-foot or \$4.58 per acre-inch. Approximately three-acre inches of water are applied through sprinklers during stand establishment. An additional 27 acre inches is applied in the furrow at seven to ten day intervals during the growing season for a seasonal total of 2.5 acre-feet or 30 acre-inches.

**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.** A preplant herbicide, Dacthal, is banded on 25% of the bed (two five-inch bands) at planting. Weed control for the remainder of the season consists of hand hoeing and mechanical cultivations. Another common option is a directed spray of AN-20 on the bed in conjunction with sidedressing but is not addressed in this study. The field is cultivated about 45 days after planting followed by two additional cultivations at ten-day intervals. The field is hand hoed after the last cultivation.

**Insects and Diseases.** Integrated pest management is used to control the various diseases, insects and related pests. Diazinon 14G is banded over the seedline at planting. A ground application of Metasystox R for aphid control and Success for diamondback worms is applied 45 to 50 days after planting. A second application may be needed in 10 to 15 days and is included in this study.

**Harvest.** The broccoli crop is hand harvested under contract 90 to 120 days after planting. Cool season plantings may require 120 days to mature but as the season warms, time to maturity decreases. Harvesting is done under contract and the broccoli is packed in the field. A contract rate of \$1.90 per box is charged to cut, bunch and box the broccoli. The container cost of \$1.15 per box and the rubber bands at \$0.10 per box brings the field harvest cost to \$3.05 per packed box. A packed box of broccoli weighs 22 pounds. Transportation costs vary depending on the distance to market. Most growers are within a 25-mile radius of the cooler. This study assumes a rate of \$450 per 1,500 box truckload or \$0.30 per box. Cooling, palletizing, and selling cost an additional \$1.40 per box which brings the total harvest cost to \$4.85 per box.

**Yields.** Average fresh market broccoli yields in the Central Coast over the past five years as shown in Table A ranged from 608 to 665 boxes per acre. The crop yield used in this study is 665 twenty-two pound boxes or 7.31 ton per acre.

**Returns.** Average prices to growers in the Central Coast for fresh market broccoli in the last five years ranged from \$6.27 to \$7.51 per box or \$570.40 to \$683.02 per ton and are shown in Table A. The return price in this study is \$6.80 per box. The ranging analysis in Table 6 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 1995 - 99 <sup>1/</sup>**

<u>Year</u>	<u>Yield</u>		<u>Revenues</u>	
	<u>Tons/Acre</u>	<u>Boxes/Acre</u>	<u>\$/Ton</u>	<u>\$/Box</u>
1999	7.32	665	612.46	6.73
1998	6.69	608	683.02	7.51
1997	6.77	615	593.52	6.53
1996	6.70	609	570.40	6.27
1995	7.17	652	599.81	6.60

<sup>1/</sup> Source: Agricultural Commissioner: Monterey

**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 which 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.

**Labor.** Basic hourly wages for workers are \$8.75 per hour for machine operators and \$7.00 per hour for non-machine labor. Adding 34% for the employer's share of federal and state payroll taxes and other possible employer paid benefits raises the total labor costs to \$11.73 per hour for machine operators and \$9.38 per hour for non-machine labor. The labor for operations involving machinery is 20% higher than the operation time to account for the additional time involved in equipment set up, moving, maintenance and repair.

## Overhead

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

*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.

*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 10.51% per year. A nominal interest rate is the typical market cost of borrowed funds.

*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 0.666% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs \$1,175 for the entire farm or \$0.98 per acre.

*Office Expense.* Office and business expenses are estimated at \$50 per acre. These expenses include office supplies, telephones, bookkeeping, accounting, legal fees, road maintenance, etc.

*Rent.* Land in this study is rented on a per acre basis with the landowner receiving \$500 per acre per crop. The land rented includes developed wells and irrigation system. The landowner is responsible for the maintenance of the irrigation system. All costs for the land and the irrigation system are incurred by the landowner.

*Supervisor Salaries.* Wages for managers are not included as a 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.

**Non-cash Overhead.** Non-cash overhead is calculated as the capital recovery cost for equipment and other farm investments. Although farm equipment used for processing tomatoes may be purchased new or used, this study shows the current purchase price for new equipment. The new purchase price is adjusted to 60% to indicate a mix of new and used equipment. Annual ownership costs (equipment and investments) are shown in Tables 1, 2, 3, and 5. They represent the capital recovery cost for investments on an annual per acre basis.

*Capital Recovery Costs.* Capital recovery cost is the annual depreciation and interest costs for a capital investment. It is the amount of money required each year to recover the difference between the purchase price and salvage value (unrecovered capital). 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 wearout 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. The purchase price and salvage value for equipment and investments are shown in Table 4.

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

*Interest Rate.* The interest rate of 6.70% used to calculate capital recovery cost is the United States Department of Agriculture-Economic Reporting Service's (USDA-ERS) ten-year average of California's agricultural sector long run rate of return to production assets from current income. It is used to reflect the long-term realized rate of return to these specialized resources that can only be used effectively in the agricultural sector. In other words, the next best alternative use for these resources is in another agricultural enterprise.

**Irrigation System.** The irrigation water is pumped from a well and delivered to the fields through an underground pipe system. Main lines above ground are connected to the underground system to deliver water for the sprinkler and furrow irrigations. The grower owns the sprinkler and gated pipe. In this study, water is pumped from a depth of 120 feet in a 500-foot well and cost \$55 per acre-foot.

**Equipment Costs.** Equipment costs are composed of three parts: non-cash overhead, cash overhead, and operating costs. Both of the overhead factors have been discussed in previous sections. The operating costs consist of repairs, fuel, and lubrication.

Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by the American Society of Agricultural Engineers (ASAE). Fuel and lubrication costs are also determined by ASAE equations based on maximum PTO horsepower, and fuel type. The fuel and repair cost per acre for each operation in Table 1 is determined by multiplying the total hourly operating cost in Table 5 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. Prices for on-farm delivery of diesel and gasoline are \$1.26 and \$1.51 per gallon, respectively.

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

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UC COOPERATIVE EXTENSION  
**Table 1. COST PER ACRE TO PRODUCE BROCCOLI**  
 CENTRAL COAST – Monterey County 2001

Operation	Operation	Cash and Labor Costs per Acre					Total Cost	Your Cost
	Time (Hrs/A)	Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/Rent			
<b>Cultural:</b>								
Manure/Compost 1/4cost/yr	0.00	0	0	17	11	27		
Sub Soil 1/2 cost	0.24	3	8	0	0	11		
Disc & Roll 2X	0.29	4	10	0	0	14		
Chisel 2X	0.35	5	11	0	0	16		
Land plane field 2X	0.24	3	8	0	0	12		
Disc & Roll 1X	0.14	2	5	0	0	7		
List Beds & Preplant Fertilizer	0.00	0	0	60	11	71		
Shape beds & roll	0.20	3	3	0	0	6		
Plant-Herbicide-Insecticide	0.18	4	4	247	0	255		
Irrigate - Sprinkle 3X	2.25	21	0	14	0	35		
Irrigate 8X	4.00	38	0	124	0	161		
Fertilize - 2X Sidedress	0.00	0	0	83	19	102		
Cultivate & furrow 3X	0.44	6	7	0	0	14		
Hand Hoe	8.00	75	0	0	0	75		
Pest Control 2X	0.00	0	0	119	32	150		
Pickup use	0.23	3	1	0	0	5		
<b>TOTAL CULTURAL COSTS</b>	<b>16.56</b>	<b>168</b>	<b>57</b>	<b>662</b>	<b>72</b>	<b>960</b>		
<b>Harvest:</b>								
Cut, Wrap, Pack	0.00	0	0	0	2,095	2,095		
Haul	0.00	0	0	0	200	200		
Cool, Palletize, Sell	0.00	0	0	0	931	931		
<b>TOTAL HARVEST COSTS</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,225</b>	<b>3,225</b>		
<b>HARVEST COST/BOX</b>						<b>4.85</b>		
<b>Postharvest:</b>								
Chop stubble	0.33	5	6	0	0	10		
<b>TOTAL POSTHARVEST COSTS</b>	<b>0.33</b>	<b>5</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>10</b>		
Interest on operating capital @ 10.51%						62		
<b>TOTAL OPERATING COSTS/ACRE</b>		<b>173</b>	<b>63</b>	<b>662</b>	<b>3,297</b>	<b>4,257</b>		
<b>Cash Overhead:</b>								
Land Rent						500		
Office Expense						50		
Field Sanitation						1		
Liability Insurance						1		
Property Taxes						2		
Property Insurance						2		
Investment Repairs						3		
<b>TOTAL CASH OVERHEAD COSTS</b>						<b>560</b>		
<b>TOTAL CASH COSTS/ACRE</b>						<b>4,816</b>		
<b>TOTAL COST/BOX</b>						<b>7.24</b>		



UC COOPERATIVE EXTENSION  
Table 1. continued

<b>Non-cash Overhead:</b>	Per producing	Annual Costs	
	Acre	Capital Recovery	
Investment:			
Shop Building	100	8	8
Shop Tools	11	1	1
Fuel Wagon	2	0	0
Implement Carrier	8	1	1
Fuel Tanks & Pumps	17	1	1
Pipe-Gated 8" 1612'	4	1	1
Pipe-Sprinkler 1456'	8	1	1
Trailer - Lowbed	6	1	1
Trailer - Pipe	2	0	0
Trailer - Pipe #2	2	0	0
Truck Tractor	41	4	4
Forklift - 5000 lb	10	1	1
Equipment	210	26	26
<b>TOTAL NON-CASH OVERHEAD COSTS</b>	<b>420</b>	<b>46</b>	<b>46</b>
<b>TOTAL COSTS/ACRE</b>			<b>4,862</b>
<b>TOTAL COST/BOX</b>			<b>7.31</b>

UC COOPERATIVE EXTENSION  
**Table 2. COSTS AND RETURNS PER ACRE TO PRODUCE BROCCOLI**  
 CENTRAL COAST – Monterey County 2001

	Quantity/ Acre	Uni	Price or Cost/Unit	Value or Cost/Acre	Your Cost
<b>GROSS RETURNS</b>					
Broccoli	665.00	box	6.80	4,522	
<b>OPERATING COSTS</b>					
<b>Contract:</b>					
Hauling	665.00	box	0.30	200	
Harvest	665.00	box	1.90	1,264	
Rubber Bands for banding	665.00	box	0.10	67	
Box-22 lb	665.00	box	1.15	765	
Cool	665.00	box	0.65	432	
Palletize Boxes	665.00	box	0.20	133	
Sell	665.00	box	0.55	366	
<b>Custom:</b>					
Haul Manure	1,500.00	lt	0.00	5	
Spread Manure	1,500.00	lt	0.00	6	
List/Fertilize	1.00	acre	11.00	11	
Ground Application-AN20	2.00	acre	9.50	19	
Ground Application-Pesticide	2.00	acre	15.75	32	
<b>Seed:</b>					
Seed	69.70	thou	3.00	209	
<b>Fertilizer:</b>					
Manure/Compost	1,500.00	lt	0.011	17	
15-15-15	400.00	lt	0.150	60	
AN20 (10.6#/gal)	160.00	lb N	0.520	83	
<b>Insecticide:</b>					
Diazinon 14G	1.75	lt	2.59	5	
Metasystox-R	4.00	pin	10.18	41	
Lannate 90 SP	1.00	lt	26.05	26	
Success	4.00	floz	12.97	52	
<b>Herbicide:</b>					
Dacthal	2.00	lt	16.49	33	
<b>Water:</b>					
Water-pumped	29.98	acin	4.58	137	
Labor (machine)	3.17	hrs	11.73	37	
Labor (non-machine)	14.45	hrs	9.38	136	
Fuel - Gas	0.66	gal	1.51	1	
Fuel - Diesel	32.10	gal	1.26	40	
Lube				6	
Machinery repair				16	
Interest on operating capital @ 10.51%				62	
<b>TOTAL OPERATING COSTS/ACRE</b>				<b>4,257</b>	
<b>NET RETURNS ABOVE OPERATING COSTS</b>				<b>265</b>	

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Table 2. Continued

CASH OVERHEAD COSTS:	
Land Rent	500
Office Expense	50
Field Sanitation	1
Liability Insurance	1
Property Taxes	2
Property Insurance	2
Investment Repairs	3
<b>TOTAL CASH OVERHEAD COSTS/ACRE</b>	<b>560</b>
<b>TOTAL CASH COSTS/ACRE</b>	<b>4,817</b>
NON-CASH OVERHEAD COSTS (Capital Recovery)	
Shop Building	8
Shop Tools	1
Fuel Wagon	0
Implement Carrier	1
Fuel Tanks & Pumps	1
Pipe-Gated 8" 1612'	1
Pipe Sprinkler 1456'	1
Trailer - Lowbed	1
Trailer - Pipe #1	0
Trailer - Pipe #2	0
Truck Tractor	4
Forklift - 5000 lb	1
Equipment	26
<b>TOTAL NON-CASH OVERHEAD COSTS/ACRE</b>	<b>46</b>
<b>TOTAL COSTS/ACRE</b>	<b>4,862</b>
<b>NET RETURNS ABOVE TOTAL COSTS</b>	<b>-340</b>

UC COOPERATIVE EXTENSION  
**Table 3. MONTHLY CASH COSTS PER ACRE TO PRODUCE BROCCOLI**  
 CENTRAL COAST – Monterey County 2001

Beginning OCT 00	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Ending SEP 01	00	00	00	01	01	01	01	01	01	01	01	01	
<b>Cultural:</b>													
Manure/Compost 1/4cost/yr	27												27
Sub Soil 1/2 cost	11												11
Disc & Roll 2X	14												14
Chisel 2X	16												16
Land plane field 2X		12											12
Disc & Roll 1X		7											7
List Beds & Preplant Fertilizer		71											71
Shape beds & roll				6									6
Plant-Herbicide-Insecticide				255									255
Irrigate - Sprinkle 3X				12	23								35
Irrigate 8X					20	61	61	20					161
Fertilize - Sidedress 2X						51	51						102
Cultivate & furrow 3X						14							14
Hand Hoe							75						75
Pest Control 2X						62	88						150
Pickup use	1	1	1	1	1	1	1	1	1				5
<b>TOTAL CULTURAL COSTS</b>	<b>68</b>	<b>90</b>	<b>1</b>	<b>273</b>	<b>44</b>	<b>188</b>	<b>275</b>	<b>21</b>	<b>1</b>				<b>960</b>
<b>Harvest:</b>													
Cut, Bunch, Pack								2,095					2,095
Haul								200					200
Cool, Palletize, Sell								931					931
<b>TOTAL HARVEST COSTS</b>								<b>3,225</b>					<b>3,225</b>
<b>Postharvest:</b>													
Chop stubble									10				10
<b>TOTAL POSTHARVEST COSTS</b>									<b>10</b>				<b>10</b>
Interest on operating capital	1	1	1	4	4	6	8	37	0				62
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>69</b>	<b>91</b>	<b>2</b>	<b>277</b>	<b>48</b>	<b>194</b>	<b>283</b>	<b>3,282</b>	<b>11</b>				<b>4,257</b>
<b>Overhead:</b>													
Land Rent									500				500
Office Expense	6	6	6	6	6	6	6	6	6				50
Field Sanitation	0	0	0	0	0	0	0	0	0	0	0	0	1
Liability Insurance	0	0	0	0	0	0	0	0	0	0	0	0	1
Property Taxes				2									2
Property Insurance				2									2
Investment Repairs	0	0	0	0	0	0	0	0	0	0	0	0	3
<b>TOTAL CASH OVERHEAD COSTS</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>10</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>506</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>560</b>
<b>TOTAL CASH COSTS/ACRE</b>	<b>75</b>	<b>97</b>	<b>8</b>	<b>287</b>	<b>54</b>	<b>200</b>	<b>289</b>	<b>3,288</b>	<b>517</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,817</b>

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**Table 4. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS**  
 CENTRAL COAST – Monterey County 2001

ANNUAL EQUIPMENT COSTS

Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Cash Overhead		Total
						Insur- ance	Taxes	
01	130 HP 2WD Tractor	62,500	10	18,462	7,420	270	405	8,095
01	280 HP Crawler	166,500	10	49,181	19,768	718	1,078	21,564
01	Bed shaper, 3 row	4,004	15	400	415	15	22	452
01	Chisel - Heavy 16'	6,163	12	854	715	23	35	773
01	Cultivator - 6 Row	8,580	10	1,517	1,093	34	50	1,177
01	Disc - Finish 21'	19,595	10	3,465	2,497	77	115	2,689
01	Mower, flail 10'	5,628	10	563	749	21	31	800
01	Pickup - new	17,655	7	1,766	3,036	65	97	3,198
01	Planter/Sled/Precision/4R	17,521	10	3,098	2,233	69	103	2,404
01	Ringroller - 21'	3,699	10	654	471	15	22	508
01	Roller - Flat 16'	2,135	12	296	248	8	12	268
01	Subsoiler - 8'	8,022	10	1,419	1,022	31	47	1,101
01	Triplane - 16'	20,109	12	2,785	2,333	76	114	2,524
<b>TOTAL</b>		<b>342,111</b>		<b>84,460</b>	<b>42,000</b>	<b>1,421</b>	<b>2,133</b>	<b>45,553</b>
60% of New Cost *		205,267		50,676	25,200	852	1,280	27,332

\*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	
<b>INVESTMENT</b>								
Forklift - 5000 lb	12,305	10	1,231	1,637	45	68	615	2,365
Fuel Tanks & Pumps	19,835	20	1,984	1,779	73	109	397	2,358
Fuel Wagon	1,975	10	198	263	7	11	40	321
Implement Carrier	9,742	15	974	1,010	36	54	487	1,586
Pipe Gated 8" 1612'	4,940	10		694	16	25	494	1,229
Pipe Sprinkler 1456'	9,279	10	928	1,235	34	51	510	1,830
Shop Building	120,000	32		9,194	400	600	652	10,846
Shop Tools	13,072	20	1,307	1,172	48	72	131	1,423
Trailer - Lowbed	7,695	15	769	798	28	42	103	971
Trailer - Pipe #1	1,935	7	194	333	7	11	39	389
Trailer - Pipe #2	1,935	7	194	333	7	11	39	389
Truck Tractor	48,849	15	4,885	5,063	179	269	377	5,888
<b>TOTAL INVESTMENT</b>	<b>251,562</b>		<b>12,664</b>	<b>23,510</b>	<b>880</b>	<b>1,321</b>	<b>3,884</b>	<b>29,595</b>

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/		Price/ Unit	Total Cost
	Farm	Unit		
Field Sanitation	400	acre	1.08	540
Land Rent	400	acre	500.00	200,000
Liability Insurance	1,200	acre	0.98	1,176
Office Expense	1,200	acre	50.00	60,000

UC COOPERATIVE EXTENSION  
**Table 5. HOURLY EQUIPMENT COSTS**  
 CENTRAL COAST – Monterey County 2001

Yr	Description	Actual	Cash Overhead			Operating			Total Costs/Hr.
		Hours Used	Capital Recovery	Insur- ance	Taxes	Repairs	Fuel & Lube	Total Oper.	
01	130 HP 2WD Tractor	1,199.80	3.71	0.13	0.20	2.81	10.93	13.74	17.79
01	280 HP Crawler	1,600.20	7.41	0.27	0.40	4.28	23.55	27.83	35.92
01	Bed shaper, 3 row	165.80	1.50	0.05	0.08	1.25	0.00	1.25	2.88
01	Chisel - Heavy 16'	166.40	2.58	0.08	0.13	1.28	0.00	1.28	4.07
01	Cultivator - 6 Row	200.40	3.27	0.10	0.15	1.77	0.00	1.77	5.30
01	Disc - Finish 21'	265.60	5.64	0.17	0.26	3.15	0.00	3.15	9.22
01	Mower, flail 10'	200.20	2.24	0.06	0.09	2.32	0.00	2.32	4.72
01	Pickup - new	267.00	6.82	0.15	0.22	1.26	5.06	6.32	13.51
01	Plntr/Sld/Prdsn/4R	150.20	8.92	0.27	0.41	4.66	0.00	4.66	14.27
01	Ringroller - 21'	199.60	1.42	0.04	0.07	0.42	0.00	0.42	1.95
01	Roller - Flat 16'	165.80	0.90	0.03	0.04	0.24	0.00	0.24	1.21
01	Subsoiler - 8'	200.00	3.07	0.09	0.14	1.80	0.00	1.80	5.10
01	Triplane - 16'	249.80	5.60	0.18	0.27	3.02	0.00	3.02	9.09

UC COOPERATIVE EXTENSION  
**Table 6. RANGING ANALYSIS**  
 CENTRAL COAST – Monterey County 2001

COSTS PER ACRE AT VARYING YIELD TO PRODUCE BROCCOLI

	YIELD (box/acre)						
	545	585	625	665	705	745	785
<b>OPERATING COSTS/ACRE:</b>							
Cultural Cost	960	960	960	960	960	960	960
Harvest Cost	2,643	2,837	3,031	3,225	3,419	3,613	3,807
Postharvest Cost	10	10	10	10	10	10	10
Interest on operating capital	57	59	60	62	64	65	67
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>3,670</b>	<b>3,866</b>	<b>4,062</b>	<b>4,257</b>	<b>4,453</b>	<b>4,649</b>	<b>4,844</b>
<b>TOTAL OPERATING COSTS/BOX</b>	<b>6.73</b>	<b>6.61</b>	<b>6.50</b>	<b>6.40</b>	<b>6.32</b>	<b>6.24</b>	<b>6.17</b>
<b>CASH OVERHEAD COSTS/ACRE</b>	<b>560</b>	<b>560</b>	<b>560</b>	<b>560</b>	<b>560</b>	<b>560</b>	<b>560</b>
<b>TOTAL CASH COSTS/ACRE</b>	<b>4,230</b>	<b>4,426</b>	<b>4,621</b>	<b>4,817</b>	<b>5,013</b>	<b>5,208</b>	<b>5,404</b>
<b>TOTAL CASH COSTS/BOX</b>	<b>7.76</b>	<b>7.57</b>	<b>7.39</b>	<b>7.24</b>	<b>7.11</b>	<b>6.99</b>	<b>6.88</b>
<b>NON-CASH OVERHEAD COSTS/ACRE</b>	<b>46</b>	<b>46</b>	<b>46</b>	<b>46</b>	<b>46</b>	<b>46</b>	<b>46</b>
<b>TOTAL COSTS/ACRE</b>	<b>4,275</b>	<b>4,471</b>	<b>4,667</b>	<b>4,862</b>	<b>5,058</b>	<b>5,254</b>	<b>5,450</b>
<b>TOTAL COSTS/BOX</b>	<b>7.84</b>	<b>7.64</b>	<b>7.47</b>	<b>7.31</b>	<b>7.17</b>	<b>7.05</b>	<b>6.94</b>

NET RETURNS PER ACRE ABOVE OPERATING COSTS FOR BROCCOLI

PRICE \$/box	YIELD (box/acre)						
	545	585	625	665	705	745	785
4.76	-1,076	-1,081	-1,087	-1,092	-1,097	-1,103	-1,108
5.44	-705	-684	-662	-640	-618	-596	-574
6.12	-335	-286	-237	-188	-138	-89	-40
6.80	36	112	188	265	341	417	494
7.48	406	510	613	717	820	924	1,027
8.16	777	908	1,038	1,169	1,300	1,430	1,561
8.84	1,148	1,305	1,463	1,621	1,779	1,937	2,095

NET RETURN PER ACRE ABOVE CASH COSTS FOR BROCCOLI

PRICE \$/box	YIELD (box/acre)						
	545	585	625	665	705	745	785
4.76	-1,636	-1,641	-1,646	-1,652	-1,657	-1,662	-1,667
5.44	-1,265	-1,243	-1,221	-1,199	-1,177	-1,156	-1,134
6.12	-894	-845	-796	-747	-698	-649	-600
6.80	-524	-448	-371	-295	-219	-142	-66
7.48	-153	-50	54	157	261	364	468
8.16	217	348	479	609	740	871	1,002
8.84	588	746	904	1,062	1,220	1,377	1,535

NET RETURN PER ACRE ABOVE TOTAL COSTS FOR BROCCOLI

PRICE \$/box	YIELD (box/acre)						
	545	585	625	665	705	745	785
4.76	-1,681	-1,686	-1,692	-1,697	-1,702	-1,708	-1,713
5.44	-1,311	-1,289	-1,267	-1,245	-1,223	-1,201	-1,179
6.12	-940	-891	-842	-793	-744	-694	-645
6.80	-569	-493	-417	-340	-264	-188	-112
7.48	-199	-95	8	112	215	319	422
8.16	172	303	433	564	695	825	956
8.84	542	700	858	1,016	1,174	1,332	1,490