

U.C. COOPERATIVE EXTENSION

SAMPLE COSTS TO PRODUCE BROCCOLI Fresh Market IN THE SAN JOAQUIN VALLEY - 1992

by

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The detailed costs for fresh market broccoli production in the San Joaquin Valley are presented in this study. The hypothetical farm used in this report consists of 1,200 acres of which 200 acres are in broccoli. The remainder of the farm is planted to different field and row crops.

Practices described in this study are based on those production procedures considered typical for this crop and area. Sample costs given for labor, materials, equipment and contract services are based on current figures. Some costs and practices detailed in this study may not be applicable to your situation. This study is only intended as a guide and can be used in making production decisions, determining potential returns, preparing budgets and evaluating production loans. A column for **Your Cost** is provided on **Tables 1 and 2, Costs Per Acre To Produce Broccoli and Detail of Costs To Produce Broccoli**, respectively.

This study consists of **General Assumptions for Producing Fresh Market Broccoli** and six tables.

- Table 1. Costs Per Acre To Produce Broccoli**
- Table 2. Detail of Costs Per Acre To Produce Broccoli**
- Table 3. Monthly Cash Costs Per Acre To Produce Broccoli**
- Table 4. Annual Equipment, Investment And Business Overhead Costs**
- Table 5. Hourly Equipment Costs**
- Table 6. Ranging Analysis**

For an explanation of calculations used for the study refer to the attached General Assumptions, call the Department of Agricultural Economics, Cooperative Extension, University of California, Davis, California, (916) 752-3589 or call the farm advisor in the county of interest.

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GENERAL ASSUMPTIONS FOR PRODUCING FRESH MARKET BROCCOLI
San Joaquin Valley - 1992
U.C. Cooperative Extension

The following is a description of some general assumptions pertaining to sample costs of fresh market broccoli production in the San Joaquin Valley. The costs are based on typical cultural practices used by growers in this region, some of which may not be used during every production year. Costs are presented as annual costs per acre. The use of trade names in this study does not constitute an endorsement or a recommendation by the University of California nor is any criticism implied by omission of other similar products.

1. LAND:

This cost of production study is based on a 1,200 acre field and row crop operation of which 200 acres is dedicated to growing fresh market broccoli. Other crops grown on the same acreage in rotation with broccoli might include small grains, cantaloupes, mixed melons, tomatoes, field corn, etc.

2. RENT AGREEMENT:

The land used for broccoli production in this study is rented on a per acre basis. Under this agreement the landowner receives \$150 per acre annually. Since the land is double cropped half of the rent (\$75) is allocated to the broccoli operation and half is allocated to the other crop.

3. CULTURAL PRACTICES:

The cultural, pesticide and fertilizer inputs for the production of fresh market broccoli vary considerably from grower to grower and field to field. Land preparation operations such as disking, chiseling, landplaning, and listing, are done with a 270 hp (horsepower) crawler tractor and occurs in June. A 130 HP wheel tractor is used to perform most of the other cultural operations that occur throughout the growing season.

A preplant fertilizer is custom broadcast onto the field along with an herbicide before the beds are listed up. A rate of 50 pounds per acre of actual nitrogen is used. Two additional nitrogen applications occur during the growing season. Both times the fertilizers are run through the water in regularly scheduled irrigations during August and September. Eighty pounds per acre of actual N is applied in each of the two irrigations. A total of 210 pounds per acre of actual nitrogen is applied to the crop in this study.

A hybrid variety of broccoli is direct seeded into double rows on 40 inch beds at a rate of 1 pound per acre. Fields are planted to a stand with 5 to 6 inch spacing between plants. Most growers do not plant all of their broccoli acreage at one time, so plantings are staggered over several weeks. This allows growers to take advantage of a longer market season and also eases harvest requirements.

Irrigation water is supplied by a water district at a cost of \$30 per acre foot. A single pre-irrigation of 3 acre inches is sprinkled on the fields before the preplant fertilizer and herbicide are broadcast over the field. A total of 10 more irrigations occur from July through October. A season total of 27 acre inches of water (this includes the water for the pre-irrigation) is applied

for crop. The pre-irrigation is the only irrigation that uses sprinklers to apply the water. All of the remaining irrigations use gated pipe to deliver the water to the field. The sprinkler pipe is rented and the gated pipe is owned by the grower.

A variety of pest management techniques are used to control various weed, disease and insect problems in broccoli. A preplant herbicide is broadcast onto the field in the same operation as the fertilizer. Both of these materials are incorporated into the ground by discing twice. The broccoli is cultivated twice between irrigations in August and September, to control weeds. Various worms and aphids are managed with a mix of insecticide sprays. One fungicide spray is applied to control downey mildew. In this study all pesticides are applied by aircraft. Additional pest control may be required depending on each grower's own situation.

The practices and inputs used in this cost study serve only as a sample or a guide. Variations in cultural practices and inputs can be significant. Contact your local farm advisor for advice on production practices.

4. HARVEST, YIELDS & RETURNS:

Harvesting is done under contract and is packed in the field. A custom rate of \$1.90 per box is charged to cut, band and box the broccoli. The container cost of \$0.82 per box brings the total harvest cost to \$2.72 per packed box. A packed box of broccoli weighs 22 pounds. Transportation costs vary considerably depending on distance to market. This study assumes a rate of \$450 per truckload which consists of 1500 boxes per truck. This equates to \$0.30 per box. This cost is high because less than truckload quantities are shipped on occasion. For growers that own their equipment and do their own harvesting, the equipment for harvest operations should be inventoried in Investment costs on Table 4, and operation costs would be calculated and placed in Harvest costs in **Tables 1 and 3**. All custom charges would be subtracted from Harvest costs in **Tables 1 and 3**.

Yields in the San Joaquin Valley for fresh market broccoli, can range from 200 to 700 boxes per acre. The crop yield used in this study is 400 boxes per acre. Broccoli growers may produce higher than the 700 boxes used in the range shown in Table 6 or even 0 boxes per acre due to crop failure. Many factors can influence crop yields. Pest incidence, climate and resource availability are a few of the factors that can cause fluctuations in yields that growers may not be able to control. Variations of yields can occur across regions and fields.

Prices to growers for fresh market broccoli in the last 5 years ranged from \$10.96 to \$1.76 per box for San Joaquin Valley growers. No specific return price is assumed in this study due to the fluctuation of market prices received by growers. **Table 6, Ranging Analysis**, shows the net returns above operating costs, cash costs and total costs for various price and yield levels. Differences in fresh market broccoli prices and yields can be substantial over the season.

5. RISK:

The risks associated with fresh market vegetables 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 and market risks which affect the profitability and economic viability of fresh market vegetable production.

The market for fresh vegetables is very volatile for both price and quantity. Producers do not have control over either of these market components. Because of this, fresh market vegetables are a high risk enterprise. Risk is caused by uncontrollable factors such as a decrease in the demand for broccoli or an oversupply from other sources. Because of the risk involved, access to a market is crucial. A market channel should be determined before any broccoli production begins.

Perishability of fresh vegetables diminishes the opportunity to wait for a better market and price. Agronomic difficulties may also increase the risk to growers. Rain can interfere with harvest, planting delays may reduce the chance to sell in an early market or pest and disease might lower quality.

6. LABOR:

Basic hourly wages for workers are \$5.97 and \$4.48 per hour for machine operators and field workers respectively. Adding 34% for SDI, FICA, insurance and other benefits gives the labor rates shown of \$8.00 per hour for machine operators and \$6.00 per hour for field labor. The labor for operations involving machinery are 10% higher than the machine hours to account for the extra labor involved in equipment set-up, moving, maintenance and repair. Wages for managers are not included as a cash cost. Any returns above total costs are considered a return to management.

7. OVERHEAD:

County taxes are calculated as 1% of the average of the equipment, buildings and improvements. Insurance is charged at 0.5% of the average value of the equipment over its useful life. Office and business costs are estimated at \$30 per acre for the ranch. These expenses include office supplies, phone, bookkeeping, accounting, legal fees, road preparation and maintenance, etc.

8. INTEREST:

Interest on operating capital is based on cash costs and is calculated monthly for five months until harvest at the rate of 9.00% per year. Adjustments for inflation have not been included in these interest rates. Interest is also charged on investment at 4.00% per year to account for income foregone that could be received from an alternative investment (opportunity cost) and is based on the average value of the buildings and equipment.

9. INVESTMENT:

The investments shown in **Table 4** are those that are partially or completely allocated to the broccoli operation. Investments including the fuel wagon, buildings, shop tools, etc., can be used by the whole farm so only a portion of the costs are assigned to the broccoli operation and the rest of the costs are distributed to the other farm enterprises. Annual investments shown in **Table 1** represent depreciation and opportunity cost for each investment on an annual per acre basis.

10. EQUIPMENT COSTS:

In allocating the equipment costs per acre, the following calculations were made and shown in **Table 4**: (a) Original Cost of equipment is the cost of the new equipment plus sales tax. (b)

Depreciation is straight line with a ten percent salvage value. (c) Interest on investment is calculated as the average value per acre of the equipment during its useful life, multiplied by an interest rate of 4.00%. Average value equals new cost plus salvage value divided by 2 on a per acre basis. (d) Total investment costs are also calculated as 60% of the depreciation and the interest costs for all new equipment to reflect a mix of the new and used equipment. These values are also used in **Table 1**. Most of this equipment is used on the entire 1,200 acre ranch.

11. FUEL & REPAIR:

The fuel and repair cost for each operation in **Table 1** is determined by multiplying the total hourly operating cost for each piece of equipment by the number of hours per acre for that operation. Prices for on-farm delivery of gasoline and diesel are \$0.71 and \$0.98 per gallon respectively.

Table 1.

U.C. COOPERATIVE EXTENSION
 COSTS PER ACRE TO PRODUCE BROCCOLI
 FRESH MARKET
 SAN JOAQUIN VALLEY - 1992

Labor Rate: \$ 8.00/hr. machine labor Interest Rate: 9.00%
 \$ 6.00/hr. non-machine labor Yield per Acre: 400 boxes

| Operation | Operation Time (Hrs/A) | Labor Cost | Fuel & Repairs | Cash and Labor Material Cost | Costs per Acre Custom/ Rent | Total Cost | Your Cost |
|---------------------------------------|------------------------------|---------------|-------------------|------------------------------------|-----------------------------------|---------------|--------------|
| ===== | | | | | | | |
| Cultural: | | | | | | | |
| Stubble disc 2X | 0.29 | 2.75 | 8.02 | 0.00 | 0.00 | 10.77 | |
| Chisel | 0.18 | 1.77 | 4.49 | 0.00 | 0.00 | 6.25 | |
| Land plane field 2X | 0.31 | 2.94 | 7.58 | 0.00 | 0.00 | 10.52 | |
| Preirrigate | 0.75 | 4.50 | 0.00 | 7.50 | 31.25 | 43.25 | |
| Apply fertilizer & herbicide | 0.00 | 0.00 | 0.00 | 48.29 | 4.75 | 53.04 | |
| Incorporate with disc 2X | 0.27 | 2.56 | 6.39 | 0.00 | 0.00 | 8.95 | |
| List beds | 0.27 | 2.56 | 6.39 | 0.00 | 0.00 | 8.95 | |
| Mulch beds | 0.18 | 1.74 | 3.15 | 0.00 | 0.00 | 4.89 | |
| Shape beds & plant | 0.41 | 3.94 | 7.33 | 150.00 | 0.00 | 161.26 | |
| Make ditches | 0.06 | 1.78 | 0.91 | 0.00 | 0.00 | 2.68 | |
| Irrigate | 4.00 | 24.00 | 0.00 | 48.00 | 0.00 | 72.00 | |
| Close ditch | 0.06 | 1.78 | 0.76 | 0.00 | 0.00 | 2.54 | |
| Cultivate & furrow out 2X | 0.43 | 4.13 | 5.48 | 0.00 | 0.00 | 9.61 | |
| Apply insecticide | 0.00 | 0.00 | 0.00 | 31.40 | 6.75 | 38.15 | |
| Irrigate & fertilize | 1.00 | 6.00 | 0.00 | 15.56 | 0.00 | 21.56 | |
| Apply fungicide | 0.00 | 0.00 | 0.00 | 33.74 | 6.75 | 40.49 | |
| Apply insecticide | 0.00 | 0.00 | 0.00 | 76.20 | 6.75 | 82.95 | |
| Pickup use | 0.23 | 2.16 | 1.44 | 0.00 | 0.00 | 3.60 | |
| TOTAL CULTURAL COSTS | 8.43 | 62.58 | 51.94 | 410.69 | 56.25 | 581.46 | |
| ===== | | | | | | | |
| Harvest: | | | | | | | |
| Cut, band and pack broccoli | 0.00 | 0.00 | 0.00 | 0.00 | 760.00 | 760.00 | |
| Carton cost | 0.00 | 0.00 | 0.00 | 328.00 | 0.00 | 328.00 | |
| Haul to market | 0.00 | 0.00 | 0.00 | 0.00 | 120.00 | 120.00 | |
| TOTAL HARVEST COSTS | 0.00 | 0.00 | 0.00 | 328.00 | 880.00 | 1208.00 | |
| ===== | | | | | | | |
| Postharvest: | | | | | | | |
| Chop stubble | 0.30 | 2.87 | 4.16 | 0.00 | 0.00 | 7.03 | |
| TOTAL POSTHARVEST COSTS | 0.30 | 2.87 | 4.16 | 0.00 | 0.00 | 7.03 | |
| ===== | | | | | | | |
| Interest on operating capital @ 9.00% | | | | | | 21.06 | |
| TOTAL OPERATING COSTS/ACRE | | 65.45 | 56.10 | 738.69 | 936.25 | 1817.55 | |
| TOTAL OPERATING COSTS/BOX | | | | | | 4.54 | |
| ===== | | | | | | | |
| CASH OVERHEAD: | | | | | | | |
| Land Rent | | | | | | 75.00 | |
| Office Expense | | | | | | 30.00 | |
| Property Taxes | | | | | | 2.17 | |
| Equipment Insurance | | | | | | 1.09 | |
| Investment Repairs | | | | | | 0.48 | |
| TOTAL CASH OVERHEAD COSTS | | | | | | 108.74 | |
| ===== | | | | | | | |
| TOTAL CASH COSTS/ACRE | | | | | | 1926.28 | |
| TOTAL CASH COSTS/BOX | | | | | | 4.82 | |
| ===== | | | | | | | |
| NON-CASH OVERHEAD: | | | | | | | |
| | Per producing Acre | Depreciation | Annual Cost | Interest @ 4.00% | | | |
| Investment | | | | | | | |
| Buildings | 54.17 | 2.17 | | 1.08 | | 3.25 | |
| Shop Tools | 8.33 | 0.42 | | 0.17 | | 0.58 | |
| Fuel Wagon | 1.25 | 0.11 | | 0.03 | | 0.14 | |
| Tool Carrier | 10.17 | 0.46 | | 0.22 | | 0.68 | |
| Fuel Tanks & Pumps | 6.71 | 0.34 | | 0.13 | | 0.47 | |
| Gated Pipe | 5.24 | 0.24 | | 0.11 | | 0.35 | |
| Equipment | 315.13 | 23.52 | | 6.93 | | 30.45 | |
| TOTAL NON-CASH OVERHEAD COSTS | 400.99 | 27.25 | | 8.68 | | 35.93 | |
| ===== | | | | | | | |
| TOTAL COSTS/ACRE | | | | | | 1962.21 | |
| TOTAL COSTS/BOX | | | | | | 4.91 | |
| ===== | | | | | | | |

Table 2.

U.C. COOPERATIVE EXTENSION
 DETAILS OF COSTS PER ACRE TO PRODUCE BROCCOLI
 FRESH MARKET
 SAN JOAQUIN VALLEY - 1992

Use of trade names does not constitute an endorsement or recommendation by the University of California nor is any criticism implied by omission of other similar products.

Labor Rate: \$8.00/hr. machine labor Interest Rate: 9.00%
 \$6.00/hr. non-machine labor

| | Quantity/Acre | Unit | Price or Cost/Unit | Value or Cost/Acre | Your Cost |
|--|---------------|------|--------------------|--------------------|-----------|
| ===== | | | | | |
| OPERATING COSTS | | | | | |
| Water: | | | | | |
| Water | 27.00 | acin | 2.50 | 67.50 | |
| Fertilizer: | | | | | |
| 13-26-0 | 384.00 | lb | 0.11 | 42.24 | |
| UN-32 | 44.44 | gal | 0.08 | 3.56 | |
| Lbs of N = 11.1 lbs/gal X .32 X 44.44 gal | | | | | |
| Herbicide: | | | | | |
| Treflan PRO 5 | 1.00 | pint | 6.05 | 6.05 | |
| Custom/Rent: | | | | | |
| Sprinkler Pipe | 1.00 | acre | 31.25 | 31.25 | |
| Ground Application | 1.00 | acre | 4.75 | 4.75 | |
| Air Application | 3.00 | acre | 6.75 | 20.25 | |
| Harvest | 400.00 | box | 1.90 | 760.00 | |
| Hauling | 400.00 | box | 0.30 | 120.00 | |
| Seed: | | | | | |
| Seed - Broccoli | 1.00 | lb | 150.00 | 150.00 | |
| Insecticide: | | | | | |
| Javelin | 2.00 | lb | 15.70 | 31.40 | |
| Lannate | 8.00 | pint | 6.23 | 49.84 | |
| Metasystox R | 4.00 | pint | 6.59 | 26.36 | |
| Fungicide: | | | | | |
| Ridomil - Bravo | 2.00 | lb | 16.87 | 33.74 | |
| Packing Aid: | | | | | |
| Packing Box | 400.00 | box | 0.82 | 328.00 | |
| Labor (machine) | 3.57 | hrs | 8.00 | 28.55 | |
| Labor (non-machine) | 6.15 | hrs | 6.00 | 36.90 | |
| Fuel - Gas | 0.66 | gal | 0.98 | 0.64 | |
| Fuel - Diesel | 34.54 | gal | 0.71 | 24.52 | |
| Lube | | | | 3.77 | |
| Machinery repair | | | | 27.18 | |
| Interest on operating capital @ 9.00% | | | | 21.06 | |
| | | | | ----- | |
| TOTAL OPERATING COSTS/ACRE | | | | 1817.55 | |
| TOTAL OPERATING COSTS/BOX | | | | 4.54 | |
| ----- | | | | | |
| CASH OVERHEAD COSTS: | | | | | |
| Land Rent | | | | 75.00 | |
| Office Expense | | | | 30.00 | |
| Property Taxes | | | | 2.17 | |
| Equipment Insurance | | | | 1.09 | |
| Investment Repairs | | | | 0.48 | |
| | | | | ----- | |
| TOTAL CASH OVERHEAD COSTS/ACRE | | | | 108.74 | |
| ----- | | | | | |
| TOTAL CASH COSTS/ACRE | | | | 1926.28 | |
| TOTAL CASH COSTS/BOX | | | | 4.82 | |
| ----- | | | | | |
| NON-CASH OVERHEAD COSTS (DEPRECIATION & INTEREST): | | | | | |
| Buildings | | | | 3.25 | |
| Shop Tools | | | | 0.58 | |
| Fuel Wagon | | | | 0.14 | |
| Tool Carrier | | | | 0.68 | |
| Fuel Tanks & Pumps | | | | 0.47 | |
| Gated Pipe | | | | 0.35 | |
| Equipment | | | | 30.45 | |
| | | | | ----- | |
| TOTAL NON-CASH OVERHEAD COSTS/ACRE | | | | 35.93 | |
| ----- | | | | | |
| TOTAL COSTS/ACRE | | | | 1962.21 | |
| TOTAL COSTS/BOX | | | | 4.91 | |
| ===== | | | | | |

Table 3.

U.C. COOPERATIVE EXTENSION
MONTHLY CASH COSTS PER ACRE TO PRODUCE BROCCOLI
FRESH MARKET
SAN JOAQUIN VALLEY - 1992

| Beginning JUL 92 | JUN | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | TOTAL |
|-----------------------------------|---------------|---------------|---------------|--------------|----------------|-------------|------|-------------|-----|-----|-----|-----|----------------|
| Ending MAY 93 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 93 | 93 | 93 | 93 | 93 | |
| Cultural: | | | | | | | | | | | | | |
| Stubble disc 2X | | 10.77 | | | | | | | | | | | 10.77 |
| Chisel | | 6.25 | | | | | | | | | | | 6.25 |
| Land plane field 2X | | 10.52 | | | | | | | | | | | 10.52 |
| Preirrigate | | 43.25 | | | | | | | | | | | 43.25 |
| Apply fertilizer & herbicide | | 53.04 | | | | | | | | | | | 53.04 |
| Incorporate with disc 2X | | 8.95 | | | | | | | | | | | 8.95 |
| List beds | | 8.95 | | | | | | | | | | | 8.95 |
| Mulch beds | | 4.89 | | | | | | | | | | | 4.89 |
| Shape beds & plant | | | 161.26 | | | | | | | | | | 161.26 |
| Make ditches | | | 2.19 | 0.49 | | | | | | | | | 2.68 |
| Irrigate | | | 27.00 | 27.00 | 18.00 | | | | | | | | 72.00 |
| Close ditch | | | 1.05 | 1.05 | 0.45 | | | | | | | | 2.54 |
| Cultivate & furrow out 2X | | | 4.80 | 4.80 | | | | | | | | | 9.61 |
| Apply insecticide | | | 38.15 | | | | | | | | | | 38.15 |
| Irrigate & fertilize | | | 10.78 | 10.78 | | | | | | | | | 21.56 |
| Apply fungicide | | | | 40.49 | | | | | | | | | 40.49 |
| Apply insecticide | | | | | 82.95 | | | | | | | | 82.95 |
| Pickup use | | | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | | | | | | 3.60 |
| TOTAL CULTURAL COSTS | | 147.34 | 245.95 | 85.33 | 102.12 | 0.72 | | | | | | | 581.46 |
| Harvest: | | | | | | | | | | | | | |
| Cut, band and pack broccoli | | | | | 760.00 | | | | | | | | 760.00 |
| Carton cost | | | | | 328.00 | | | | | | | | 328.00 |
| Haul to market | | | | | 120.00 | | | | | | | | 120.00 |
| TOTAL HARVEST COSTS | | | | | 1208.00 | | | | | | | | 1208.00 |
| Postharvest: | | | | | | | | | | | | | |
| Chop stubble | | | | | | 7.03 | | | | | | | 7.03 |
| TOTAL POSTHARVEST COSTS | | | | | | 7.03 | | | | | | | 7.03 |
| Interest on oper. capital | | 1.11 | 2.95 | 3.59 | 13.42 | | | | | | | | 21.06 |
| TOTAL OPERATING COSTS/ACRE | | 148.44 | 248.90 | 88.92 | 1323.53 | 7.75 | | | | | | | 1817.55 |
| TOTAL OPERATING COSTS/BOX | | 0.37 | 0.62 | 0.22 | 3.31 | 0.02 | | | | | | | 4.54 |
| OVERHEAD: | | | | | | | | | | | | | |
| Land Rent | 75.00 | | | | | | | | | | | | 75.00 |
| Office Expense | 30.00 | | | | | | | | | | | | 30.00 |
| Property Taxes | | | | | | | | 2.17 | | | | | 2.17 |
| Equipment Insurance | | | | | | | | 1.09 | | | | | 1.09 |
| Investment Repairs | | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | | | | | | | 0.48 |
| TOTAL CASH OVERHEAD COSTS | 105.00 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | | 3.26 | | | | | 108.74 |
| TOTAL CASH COSTS/ACRE | 105.00 | 148.54 | 249.00 | 89.02 | 1323.63 | 7.84 | | 3.26 | | | | | 1926.28 |
| TOTAL CASH COSTS/BOX | 0.26 | 0.37 | 0.62 | 0.22 | 3.31 | 0.02 | | 0.01 | | | | | 4.82 |

Table 4.

U.C. COOPERATIVE EXTENSION
WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS
SAN JOAQUIN VALLEY - 1992

ANNUAL EQUIPMENT COSTS

| Yr | Description | Price | Yrs Life | - Non-Cash Over. - - | | Cash Overhead - | | Total |
|-------------------|------------------------|--------|-------------|----------------------|----------|-----------------|---------|----------|
| | | | | Depre- ciation | Interest | Insur- ance | Taxes | |
| 92 | 130 hp 2wd Tractor | 77359 | 12 | 5801.92 | 1701.90 | 212.74 | 425.48 | 8142.04 |
| 92 | 270 hp Crawler | 148400 | 12 | 11130.00 | 3264.80 | 408.10 | 816.20 | 15619.10 |
| 92 | Bed Shaper - 3 Row | 4004 | 15 | 240.27 | 88.08 | 11.01 | 22.02 | 361.38 |
| 92 | Chisel - Heavy 16' | 7500 | 15 | 450.00 | 165.00 | 20.63 | 41.25 | 676.88 |
| 92 | Cultivator Sled | 3000 | 15 | 180.00 | 66.00 | 8.25 | 16.50 | 270.75 |
| 92 | Disc - 18' Finish | 6000 | 15 | 360.00 | 132.00 | 16.50 | 33.00 | 541.50 |
| 92 | Disc - Offset 18' | 20230 | 15 | 1213.80 | 445.06 | 55.63 | 111.27 | 1825.76 |
| 92 | Ditcher - V | 11200 | 15 | 672.00 | 246.40 | 30.80 | 61.60 | 1010.80 |
| 92 | Mower - Flail 10' | 5628 | 10 | 506.50 | 123.82 | 15.48 | 30.95 | 676.75 |
| 92 | Mulcher - PTO, 6 Row | 19260 | 15 | 1155.60 | 423.72 | 52.96 | 105.93 | 1738.21 |
| 92 | Pickup Truck - 1/2 Ton | 17655 | 7 | 2269.86 | 388.42 | 48.55 | 97.11 | 2803.94 |
| 92 | Planter - Precision | 9650 | 7 | 1240.71 | 212.30 | 26.54 | 53.08 | 1532.63 |
| 92 | Scraper - Drag 10' | 2884 | 15 | 173.07 | 63.44 | 7.93 | 15.86 | 260.30 |
| 92 | Triplane - 16' | 17527 | 15 | 1051.60 | 385.60 | 48.20 | 96.40 | 1581.80 |
| TOTAL | | 350297 | | 26445.33 | 7706.54 | 963.32 | 1926.65 | 37041.84 |
| 60% of New Cost * | | 210178 | | 15867.20 | 4623.92 | 577.99 | 1155.99 | 22225.10 |

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

ANNUAL INVESTMENT COSTS

| Yr | Description | Price | Yrs Life | - Non-Cash Over. - | | Cash Overhead | | | Total |
|------------------|--------------------|--------|-------------|--------------------|----------|----------------|--------|---------|---------|
| | | | | Depre- ciation | Interest | Insur- ance | Taxes | Repairs | |
| INVESTMENT | | | | | | | | | |
| | Buildings | 65000 | 25 | 2600.00 | 1300.00 | 162.50 | 325.00 | 100.00 | 4487.50 |
| | Fuel Tanks & Pumps | 8050 | 20 | 402.50 | 161.00 | 20.13 | 40.25 | 125.00 | 748.88 |
| | Fuel Wagon | 1500 | 10 | 135.00 | 33.00 | 4.13 | 8.25 | 50.00 | 230.38 |
| | Gated Pipe | 6283 | 20 | 285.60 | 137.08 | 17.14 | 34.27 | 100.00 | 574.09 |
| | Shop Tools | 10000 | 20 | 500.00 | 200.00 | 25.00 | 50.00 | 100.00 | 875.00 |
| | Tool Carrier | 12200 | 20 | 549.00 | 268.40 | 33.55 | 67.10 | 100.00 | 1018.05 |
| TOTAL INVESTMENT | | 103033 | | 4472.10 | 2099.48 | 262.45 | 524.87 | 575.00 | 7933.90 |

ANNUAL BUSINESS OVERHEAD COSTS

| Description | Units/ Farm | Unit | Price/ Unit | Total Cost |
|----------------|----------------|------|----------------|---------------|
| Land Rent | 200.00 | acre | 75.00 | 15000.00 |
| Office Expense | 1200.00 | acre | 30.00 | 36000.00 |

Table 5.

U.C. COOPERATIVE EXTENSION
HOURLY EQUIPMENT COSTS
SAN JOAQUIN VALLEY - 1992

| Yr | Description | Actual Hours Used | ----- COSTS PER HOUR ----- | | | | | | | Total Costs/Hr. |
|----|------------------------|-------------------------|---------------------------------------|----------|-----------------------------------|-------|---------|-----------------------------|----------------|--------------------|
| | | | -Non-Cash Over.- Depre- ciation | Interest | Cash Overhead - Insur- ance | Taxes | Repairs | Operating Fuel & Lube | Total Oper. | |
| 92 | 130 hp 2wd Tractor | 908.6 | 3.83 | 1.12 | 0.14 | 0.28 | 4.64 | 6.16 | 10.80 | 16.18 |
| 92 | 270 hp Crawler | 1141.6 | 5.85 | 1.72 | 0.21 | 0.43 | 7.42 | 12.79 | 20.21 | 28.42 |
| 92 | Bed Shaper - 3 Row | 166.0 | 0.87 | 0.32 | 0.04 | 0.08 | 1.15 | 0.00 | 1.15 | 2.46 |
| 92 | Chisel - Heavy 16' | 165.8 | 1.63 | 0.60 | 0.07 | 0.15 | 2.15 | 0.00 | 2.15 | 4.60 |
| 92 | Cultivator Sled | 166.0 | 0.65 | 0.24 | 0.03 | 0.06 | 0.86 | 0.00 | 0.86 | 1.84 |
| 92 | Disc - 18' Finish | 106.7 | 2.03 | 0.74 | 0.09 | 0.19 | 1.72 | 0.00 | 1.72 | 4.77 |
| 92 | Disc - Offset 18' | 137.2 | 5.31 | 1.95 | 0.24 | 0.49 | 5.81 | 0.00 | 5.81 | 13.80 |
| 92 | Ditcher - V | 170.0 | 2.37 | 0.87 | 0.11 | 0.22 | 3.22 | 0.00 | 3.22 | 6.78 |
| 92 | Mower - Flail 10' | 199.8 | 1.52 | 0.37 | 0.05 | 0.09 | 2.02 | 0.00 | 2.02 | 4.05 |
| 92 | Mulcher - PTO 6 Row | 165.2 | 4.20 | 1.54 | 0.19 | 0.38 | 5.53 | 0.00 | 5.53 | 11.85 |
| 92 | Pickup Truck - 1/2 Ton | 267.0 | 5.10 | 0.87 | 0.11 | 0.22 | 3.12 | 3.29 | 6.41 | 12.71 |
| 92 | Planter - Precision | 171.0 | 4.35 | 0.74 | 0.09 | 0.19 | 4.84 | 0.00 | 4.84 | 10.21 |
| 92 | Scraper - Drag 10' | 170.0 | 0.61 | 0.22 | 0.03 | 0.06 | 0.83 | 0.00 | 0.83 | 1.75 |
| 92 | Triplane - 16' | 165.2 | 3.82 | 1.40 | 0.18 | 0.35 | 2.54 | 0.00 | 2.54 | 8.29 |

Table 6.

U.C. COOPERATIVE EXTENSION
RANGING ANALYSIS
SAN JOAQUIN VALLEY - 1992

| COSTS PER ACRE AT VARYING YIELDS TO PRODUCE FRESH MARKET BROCCOLI | | | | | | | |
|---|------------------|------|------|------|------|------|------|
| (DOLLARS PER BOX) | YIELD (BOX/ACRE) | | | | | | |
| | 300 | 350 | 400 | 450 | 500 | 550 | 600 |
| OPERATING COSTS/ACRE: | | | | | | | |
| Cultural Cost | 581 | 581 | 581 | 581 | 581 | 581 | 581 |
| Harvest Cost | 906 | 1057 | 1208 | 1359 | 1510 | 1661 | 1812 |
| Postharvest Cost | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| Interest on operating capital | 19 | 20 | 21 | 22 | 23 | 24 | 26 |
| TOTAL OPERATING COSTS/ACRE | 1513 | 1665 | 1818 | 1970 | 2122 | 2274 | 2426 |
| TOTAL OPERATING COSTS/BOX | 5.04 | 4.76 | 4.54 | 4.38 | 4.24 | 4.13 | 4.04 |
| CASH OVERHEAD COSTS/ACRE | 109 | 109 | 109 | 109 | 109 | 109 | 109 |
| TOTAL CASH COSTS/ACRE | 1622 | 1774 | 1926 | 2078 | 2231 | 2383 | 2535 |
| TOTAL CASH COSTS/BOX | 5.41 | 5.07 | 4.82 | 4.62 | 4.46 | 4.33 | 4.22 |
| NON-CASH OVERHEAD COSTS/ACRE | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
| TOTAL COSTS/ACRE | 1658 | 1810 | 1962 | 2114 | 2266 | 2419 | 2571 |
| TOTAL COSTS/BOX | 5.53 | 5.17 | 4.91 | 4.70 | 4.53 | 4.40 | 4.28 |

| NET RETURNS PER ACRE ABOVE OPERATING COSTS FOR FRESH MARKET BROCCOLI | | | | | | | |
|--|------------------|------|------|------|------|------|------|
| PRICE (DOLLARS PER BOX) | YIELD (BOX/ACRE) | | | | | | |
| | 300 | 350 | 400 | 450 | 500 | 550 | 600 |
| 4.00 | -313 | -265 | -218 | -170 | -122 | -74 | -26 |
| 4.50 | -163 | -90 | -18 | 55 | 128 | 201 | 274 |
| 5.00 | -13 | 85 | 182 | 280 | 378 | 476 | 574 |
| 5.25 | 62 | 172 | 282 | 393 | 503 | 614 | 724 |
| 5.50 | 137 | 260 | 382 | 505 | 628 | 751 | 874 |
| 6.00 | 287 | 435 | 582 | 730 | 878 | 1026 | 1174 |
| 6.50 | 437 | 610 | 782 | 955 | 1128 | 1301 | 1474 |

| NET RETURNS PER ACRE ABOVE CASH COSTS FOR FRESH MARKET BROCCOLI | | | | | | | |
|---|------------------|------|------|------|------|------|------|
| PRICE (DOLLARS PER BOX) | YIELD (BOX/ACRE) | | | | | | |
| | 300 | 350 | 400 | 450 | 500 | 550 | 600 |
| 4.00 | -422 | -374 | -326 | -278 | -231 | -183 | -135 |
| 4.50 | -272 | -199 | -126 | -53 | 19 | 92 | 165 |
| 5.00 | -122 | -24 | 74 | 172 | 269 | 367 | 465 |
| 5.25 | -47 | 63 | 174 | 284 | 394 | 505 | 615 |
| 5.50 | 28 | 151 | 274 | 397 | 519 | 642 | 765 |
| 6.00 | 178 | 326 | 474 | 622 | 769 | 917 | 1065 |
| 6.50 | 328 | 501 | 674 | 847 | 1019 | 1192 | 1365 |

| NET RETURNS PER ACRE ABOVE TOTAL COSTS FOR FRESH MARKET BROCCOLI | | | | | | | |
|--|------------------|------|------|------|------|------|------|
| PRICE (DOLLARS PER BOX) | YIELD (BOX/ACRE) | | | | | | |
| | 300 | 350 | 400 | 450 | 500 | 550 | 600 |
| 4.00 | -458 | -410 | -362 | -314 | -266 | -219 | -171 |
| 4.50 | -308 | -235 | -162 | -89 | -16 | 56 | 129 |
| 5.00 | -158 | -60 | 38 | 136 | 234 | 331 | 429 |
| 5.25 | -83 | 27 | 138 | 248 | 359 | 469 | 579 |
| 5.50 | -8 | 115 | 238 | 361 | 484 | 606 | 729 |
| 6.00 | 142 | 290 | 438 | 586 | 734 | 881 | 1029 |
| 6.50 | 292 | 465 | 638 | 811 | 984 | 1156 | 1329 |