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UNIVERSITY OF CALIFORNIA
COOPERATIVE EXTENSION

SAMPLE COSTS TO PRODUCE

~GARBANZO~

Dryland and Conventional Tillage Conditions
SAN LUIS OBISPO COUNTY

by

Etaferahu Takele, Area Farm Advisor, Farm Management Economics, Southern Region
Michael Smith, Farm Advisor, San Luis Obispo County

U.C. Cooperative Extension

Sample Costs To Produce Garbanzo Beans *Under Conventional Tillage Conditions* San Luis Obispo County - 1995/1996

INTRODUCTION

Detailed costs to produce garbanzo in San Luis Obispo County are presented in this study. The hypothetical farm used in this report consists of 500 acres of which 100 acres are in garbanzo bean production.

This study consists of General Assumptions for producing garbanzo beans along with six tables of cost analysis. The practices described in this study are considered typical for garbanzo bean production in San Luis Obispo County. They do not reflect the exact values or practices of any grower or shipper, but are rather an amalgamation of costs and practices in the region. Sample costs given for labor, materials, equipment and contract services are based on 1995/1996 prices. Some costs and practices detailed in this study may not be applicable to your situation. *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.* This study is intended as a guide, it can be used in making production decisions, determining potential returns, preparing budgets and evaluating production loans.

Costs are presented in six tables.

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

A blank *Your Costs* column is provided to enter your actual costs on **Table 1 (Costs Per Acre To Produce Garbanzo), and Table 2 (Costs And Returns Per Acre To Produce Garbanzo.)**

For an explanation of calculations used for this study refer to the attached General Assumptions, call the Area Farm Management Economics Advisor, Eta Takele at the University of California Cooperative Extension, Moreno Vall California, (909) 683-6491 ext. 243 or call the San Luis Obispo County Agronomy Farm Advisor, Michael Smith, (805) 237-3100.

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ASSUMPTIONS USED IN THIS STUDY

The following is a description of the assumptions used in this study to develop sample costs to produce garbanzo beans on the Carrizo Plains region in San Luis Obispo County in 1995/96.

1. LAND and CLIMATE

Land: Areas that produce garbanzo beans in San Luis Obispo and Santa Barbara Counties are mostly located near the coast, principally in the cool, foggy coastal areas. This study focuses on the western region of San Luis Obispo County from Morro Bay south to Edna Valley.

The site for the hypothetical farm is characterized by level valley bottoms and some moderate to highly erodable hillsides and hilltops. The farm is 500 acres in size, of which 100 acres produce dryland garbanzo. The remaining acreage is used for fresh market vegetable production, (snap peas and bell peppers primarily), flower and vegetable seeds and rotated with oat hay.

Growers in San Luis Obispo County both own and rent land for garbanzo production. Rents or leases are common and are charged as either a per acre cash rent or share rent. In this study we used share renting with the land owner receiving 25% of the gross returns minus charges for warehousing and transportation.

Climate: Soils in this region are typically Los Osos and Diablo Clays. Annual rainfall for this region varies from 9 to 20 inches, most of which comes in the winter months.

2. CULTURAL PRACTICES AND PRODUCTION INPUTS

Cultural practices for the production of dryland garbanzo in the San Luis Obispo region vary somewhat from grower to grower. Differences in cultural inputs can be caused by seasonal pest (weed) pressures, and rainfall timing. Practices and inputs used in this cost study are based on typical grower practices in the region.

Weed Control: The most common and troublesome weeds in this region are wild mustard (*Brassica nigra*), wild radish (*Paphanus sativus* L.), coast fiddleneck (*Amsinka intermedia*), shepardspurse (*Capsella bursa-pastoris* L.), ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua*), Russian thistle (*Salsola iberica*) and Field bindweed (*Convolvulus arvensis*) and Black nightshade (*Solanum nigrum*).

In this study, weed control techniques include spring cultivations prior to planting in late April or early May. Following planting, additional weed control practices are performed from late May through July. Operations may include a custom hand hoeing, and shallow cultivation using either weed knives or a spring-tooth harrow.

Also, during March one-half of the acreage is shield sprayed with 2,4-D amine to broadleaves using a ground rig. MCPA is sometimes used instead of 2-4 D. Both the choice of post-emergent herbicide(s) and timing of application are dependent on the specific site and its accompany weed complement.

Pesticides, rates, and cultural practices mentioned in this cost study are a few of those listed in the *UC IPM Small Grains Pest Management Guidelines*, and *Integrated Pest Management for Small Grains*.

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 in either Paso Robles or San Luis Obispo. For additional production information contact the San Luis Obispo County agronomy farm advisor.

Fertilization: Fertilizers are not typically applied to garbanzos in San Luis Obispo county. Some growers in the Central Valley may apply a starter fertilizer, primarily to supply phosphorus for winter growth.

Planting: Planting is accomplished with plate drills, four to six rows at a time, spaced 24 to 30' wide, pulled by medium horsepower tractors, e.g. 90 HP. Garbanzo is planted at rates of 60 to 65 pounds per acre. In this study we used a seeding rate of 60 pounds per acre.

The most common seed variety used in San Luis Obispo is UC 15. The cost of seed is calculated at market prices, \$0.45 per pound in this study.

The optimum time to plant is considered to be late April to early May.

3. HARVEST AND TRANSPORTATION:

Harvest: Garbanzo beans mature in August or September. The beans are cut by knives 2 to 3 inches below the ground, 2 to 4 rows at a time. Side delivery rakes are used two times following cutting to windrow and dry the beans. Cutting and windrowing must be done when the pods have been toughened by high humidity or dew to reduce shattering. Some growers windrow at nighttime to take advantage of the dew and high humidity. Drying requires 1 to 3 weeks prior to harvesting.

Typically growers will use custom harvesters and haulers (combines, truck-tractors, grain trailers, and support equipment). The combines are specifically designed for bean use. To harvest the grain, an axial flow harvester with a pickup header is used in this study. A 5-ton truck is used to haul the beans out of the field to grain trailers. Full trailers are hauled to either on farm storage facilities or more commonly to the Dry Bean Association facility in King City. The Dry Bean Association charges growers for cleaning, grading and storing.

Hauling: Garbanzo beans are hauled by a contract hauling company. Typical hauling charges are \$12 to \$14 per ton. Hauling rates used in this study are \$14 per ton.

4. YIELDS & RETURNS

Yields: Crop yields for garbanzo in San Luis Obispo County over the past five years range from 10.17 to 14.00 cwt. per acre; county average yields from 1990 to 1994 are shown in **Table A**. In this study, a garbanzo yield of 13.50 cwt. per acre is used. A loss of 10% of the crop during cleaning is assumed. Therefore the actual marketable crop is 12.15 cwt. per acre.

Returns: Garbanzo prices have ranged from \$29 to \$55 per cwt. for San Luis Obispo County growers. Prices to growers over the last five years are shown in **Table A** below. In this study, a price for garbanzo of \$40 per cwt. is used.

Table A. Average Yield & Price for Garbanzo, San Luis Obispo County, 1990 - 1994 ^{1/}

| Year | Cwt. Per Acre | \$ Per Cwt. |
|------|---------------|-------------|
| 1994 | 10.17 | 35 |
| 1993 | 14.00 | 29 |
| 1992 | 8.90 | 39 |
| 1991 | N/A | N/A |
| 1990 | N/A | N/A |

^{1/} From San Luis Obispo County Crop Reports, 1990 - 1994

Returns, as shown in Table 6, will vary and the yields and prices used in this cost study are only estimates taking into consideration of current situations.

5. RISK

The risks associated with dryland garbanzo 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 and market risks which affect the profitability and economic viability of processing garbanzo production.

Risk is caused by various sources of uncertainty which include production, price, and financial. Examples of these are disease damage, a decrease in price, and an increase in interest rates. Because of the risk involved, access to production information as well as finance and market information is crucial.

6. LABOR

Basic hourly wages for workers are \$7.00 per hour for machine operators. Adding 34% for SDI, FICA, insurance and other benefits gives the labor rates shown of \$9.38 per hour for labor. The labor for operations involving machinery are 20% higher than the operation time to account for the extra labor involved in equipment set up, moving, maintenance and repair. Any returns above total costs are considered returns to investment.

7. CASH OVERHEAD

Cash overhead consists of various cash expenses paid out during the year that are assigned to the whole farm and not to a particular operation. These costs include property taxes, interest on operating capital, office expense, liability and property insurance, and equipment 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 2 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 7.89% per year. A nominal interest rate is the going market cost of borrowed funds.

Insurance: Insurance for farm investments vary depending on the assets included and the amount of coverage. Property insurance provides coverage for property loss and is charged at 0.713% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs \$588 for the entire farm.

Office Expense: Office and business expenses are estimated at \$25 per acre. These expenses include office supplies, telephones, computer, fax, bookkeeping, accounting, legal fees, etc. Cash overhead costs are found in **Tables 1, 2, 3 and 4.**

8. NON-CASH OVERHEAD

Non-cash overhead is comprised of depreciation and interest charged on equipment and other investments. Annual equipment and investment costs are shown in **Tables 1 and 4.** They represent depreciation and opportunity cost for each investment on an annual per acre basis.

Farm equipment on a typical farm in San Luis Obispo County is often purchased as used. Dryland garbanzo growers operate on very narrow margins. In this study the current purchase price for new equipment adjusted to 60% of new value; this is to indicate the mix of new and used equipment.

Depreciation: Depreciation is a reduction in market value of investments due to wear, obsolescence, and age, and is on a straight line basis. Annual depreciation is calculated as purchase price minus salvage value divided by years the investment is held. The purchase price and years of life are shown in **Table 4.**

Interest On Investment: Interest is charged on investments to account for income foregone (opportunity cost) that could be received from an alternative investment. The investments are assumed to be owned outright. Therefore, interest on investments is a non-cash cost. Investments include land, buildings, and equipment. Interest is calculated as the average value of the investment during its useful life, multiplied by 3.72% per year. Average value for equipment and buildings equals new cost plus salvage value divided by 2 on a per acre basis.

The interest rate used to calculate opportunity cost is estimated as a ten year average of the 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.

9. EQUIPMENT CASH 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 fuel, lubrication, and repairs.

In allocating the equipment costs on a per acre basis, the hourly charges are calculated first and shown in **Table 5.** 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 HP and type of fuel used. 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 cultural practice by the number of

hours per acre for that operation. Tractor time is 10% higher than implement time for a given operation to account for setup time. Prices for on-farm delivery of diesel and gasoline are \$0.95 and \$1.20 per gallon.

10. ADDENDUM

1. Due to rounding, totals may be slightly different from the sum of components.
2. The per acre equipment costs in Table 1 reflect both the value and the level of use (hours and years of use) of the machinery complement. Therefore this cost could be different from the per acre value of the machinery complement in Table 4.

11. ACKNOWLEDGMENT

Appreciation is expressed to Paul Zellman, Staff Research Associate, who was involved at the initial stage of the development of this cost study and Delos Walton, Staff Research Associate, for assisting in the development of the final report. We also express our appreciation to those growers and other cooperators who provided data for the development of this cost study.

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Table 1.

U.C. Cooperative Extension
 COSTS PER ACRE TO PRODUCE GARBANZO
 SAN LUIS OBISPO COUNTY - 1995/96

Labor Rate: \$ 9.38/hr. machine labor Interest Rate: 7.89%
 \$ 8.04/hr. non-machine labor Yield per Acre: 1215.00 Lb

| Operation | | Cash and Labor Costs per Acre | | | | | Total | Your |
|---------------------------------------|-----------------|-------------------------------|------------------------|------------------|-----------------|--------|--------|------|
| Operation | Time (Hrs/A) | Labor Cost | Fuel,Lube & Repairs | Material Cost | Custom/ Rent | Cost | Cost | |
| Cultural: | | | | | | | | |
| Subsoil 2X | 0.86 | 9.66 | 23.37 | 0.00 | 0.00 | 33.02 | | |
| Disc 3X | 0.24 | 2.68 | 6.87 | 0.00 | 0.00 | 9.55 | | |
| Cultivate | 0.25 | 2.81 | 3.73 | 0.00 | 0.00 | 6.54 | | |
| Springtooth | 0.09 | 0.97 | 2.24 | 0.00 | 0.00 | 3.21 | | |
| Seed Beans | 0.21 | 2.42 | 2.90 | 27.00 | 0.00 | 32.32 | | |
| Shield Spray | 0.19 | 2.15 | 1.24 | 1.65 | 0.00 | 5.03 | | |
| Hand Hoe | 0.00 | 0.00 | 0.00 | 0.00 | 30.00 | 30.00 | | |
| Pickup Use | 0.17 | 1.88 | 1.03 | 0.00 | 10.50 | 13.41 | | |
| TOTAL CULTURAL COSTS | | 2.00 | 22.56 | 41.38 | 28.65 | 40.50 | 133.09 | |
| Harvest: | | | | | | | | |
| Cut Beans | 0.25 | 2.81 | 1.47 | 0.00 | 0.00 | 4.29 | | |
| Rake / Windrow 2X | 0.34 | 3.88 | 2.18 | 0.00 | 0.00 | 6.07 | | |
| Harvest Beans | 0.25 | 2.81 | 2.19 | 0.00 | 25.00 | 30.00 | | |
| TOTAL HARVEST COSTS | | 0.84 | 9.51 | 5.85 | 0.00 | 25.00 | 40.36 | |
| Postharvest: | | | | | | | | |
| Haul to King City | 0.00 | 0.00 | 0.00 | 0.00 | 9.52 | 9.52 | | |
| Clean & Store | 0.00 | 0.00 | 0.00 | 0.00 | 54.00 | 54.00 | | |
| TOTAL POSTHARVEST COSTS | | 0.00 | 0.00 | 0.00 | 0.00 | 63.52 | 63.52 | |
| Interest on operating capital @ 7.89% | | | | | | | 6.43 | |
| TOTAL OPERATING COSTS/ACRE | | | 32.07 | 47.23 | 28.65 | 129.02 | 243.40 | |
| TOTAL OPERATING COSTS/LB | | | | | | | 0.20 | |
| CASH OVERHEAD: | | | | | | | | |
| Liability Insurance | | | | | | | 1.37 | |
| Office Expense | | | | | | | 25.00 | |
| Land Rent | | | | | | | 77.27 | |
| Property Taxes | | | | | | | 2.35 | |
| Property Insurance | | | | | | | 1.68 | |
| Investment Repairs | | | | | | | 4.04 | |
| TOTAL CASH OVERHEAD COSTS | | | | | | | 111.70 | |
| TOTAL CASH COSTS/ACRE | | | | | | | 355.10 | |
| TOTAL CASH COSTS/LB | | | | | | | 0.29 | |

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Table 1. Continued

NON-CASH OVERHEAD:

| Investment | Per producing | Annual Cost | | |
|-------------------------------|---------------|--------------|------------------|--------------|
| | Acres | Depreciation | Interest @ 3.72% | |
| Fuel Tanks & Pumps | 36.30 | 2.18 | 0.74 | 2.92 |
| Forklift - 5000 lb | 22.52 | 2.03 | 0.46 | 2.49 |
| Shop Building | 119.36 | 5.37 | 2.44 | 7.81 |
| Shop Tools | 23.87 | 1.07 | 0.49 | 1.56 |
| Equipment | <u>225.10</u> | <u>20.82</u> | <u>4.61</u> | <u>25.43</u> |
| TOTAL NON-CASH OVERHEAD COSTS | 427.16 | 31.47 | 8.74 | 40.21 |
| TOTAL COSTS/ACRE | | | | 395.31 |
| TOTAL COSTS/LB | | | | 0.33 |

Table 2.

U.C. Cooperative Extension
 COSTS AND RETURNS PER ACRE TO PRODUCE GARBANZO
 SAN LUIS OBISPO COUNTY - 1995/96

Labor Rate: \$ 9.38/hr. machine labor Interest Rate: 7.89%
 \$ 8.04/hr. non-machine labor

| | Quantity/Acre | Unit | Price or Cost/Unit | Value or Cost/Acre | Your Cost |
|---------------------------------------|---------------|------|--------------------|--------------------|-----------|
| GROSS RETURNS | | | | | |
| GARBANZO | 1215.00 | Lb | 0.40 | 486.00 | |
| TOTAL GROSS RETURNS FOR GARBANZO | | | | 486.00 | |
| OPERATING COSTS | | | | | |
| Seed: | | | | | |
| Garb Seed - UC 15 | 60.00 | Lb | 0.45 | 27.00 | |
| Herbicide: | | | | | |
| 2,4-D Amine | 0.13 | Gal | 12.68 | 1.65 | |
| Custom: | | | | | |
| Hand Hoe | 1.00 | Acre | 30.00 | 30.00 | |
| Harvest | 1.00 | Acre | 25.00 | 25.00 | |
| Haul to King City | 1.43 | Ton | 14.00 | 20.02 | |
| Clean & Store | 12.00 | Cwt | 4.50 | 54.00 | |
| Labor (machine) | 3.42 | hrs | 9.38 | 32.07 | |
| Labor (non-machine) | 0.00 | hrs | 0.00 | 0.00 | |
| Fuel - Gas | 0.42 | gal | 1.20 | 0.50 | |
| Fuel - Diesel | 25.69 | gal | 1.15 | 29.55 | |
| Lube | | | | 4.51 | |
| Machinery repair | | | | 12.67 | |
| Interest on operating capital @ 7.89% | | | | <u>6.43</u> | |
| TOTAL OPERATING COSTS/ACRE | | | | 243.40 | |
| TOTAL OPERATING COSTS/LB | | | | 0.20 | |
| NET RETURNS ABOVE OPERATING COSTS | | | | 242.60 | |

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Table 2. Continued

| | |
|--|--------|
| CASH OVERHEAD COSTS: | |
| Liability Insurance | 1.37 |
| Office Expense | 25.00 |
| Land Rent | 77.27 |
| Property Taxes | 2.35 |
| Property Insurance | 1.68 |
| Investment Repairs | 4.04 |
| | ----- |
| TOTAL CASH OVERHEAD COSTS/ACRE | 111.70 |
| ----- | |
| TOTAL CASH COSTS/ACRE | 355.10 |
| TOTAL CASH COSTS/LB | 0.29 |
| ----- | |
| NON-CASH OVERHEAD COSTS (DEPRECIATION & INTEREST): | |
| Fuel Tanks & Pumps | 2.92 |
| Forklift - 5000 lb | 2.49 |
| Shop Building | 7.81 |
| Shop Tools | 1.56 |
| Equipment | 25.43 |
| | ----- |
| TOTAL NON-CASH OVERHEAD COSTS/ACRE | 40.21 |
| ----- | |
| TOTAL COSTS/ACRE | 395.31 |
| TOTAL COSTS/LB | 0.33 |
| ----- | |
| NET RETURNS ABOVE TOTAL COSTS | 90.69 |
| ===== | |

Table 3.

U.C. Cooperative Extension
MONTHLY CASH COSTS PER ACRE TO PRODUCE GARBANZO
SAN LUIS OBISPO COUNTY - 1995/96

| Beginning Ending | OCT 95 | NOV 95 | DEC 95 | JAN 96 | FEB 96 | MAR 96 | APR 96 | MAY 96 | JUN 96 | JUL 96 | AUG 96 | SEP 96 | TOTAL |
|-----------------------------------|--------------|-------------|-------------|-------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|---------------|---------------|
| Cultural: | | | | | | | | | | | | | |
| Subsoil 2X | 33.02 | | | | | | | | | | | | 33.02 |
| Disc 3X | | | | | | 9.55 | | | | | | | 9.55 |
| Cultivate | | | | | | 3.29 | | | | 3.26 | | | 6.54 |
| Springtooth | | | | | | | 3.21 | | | | | | 3.21 |
| Seed Beans | | | | | | | | 32.32 | | | | | 32.32 |
| Shield Spray | | | | | | | | | 5.03 | | | | 5.03 |
| Hand Hoe | | | | | | | | | | 30.00 | | | 30.00 |
| Pickup Use | 1.12 | 1.12 | 1.12 | 1.12 | 1.12 | 1.12 | 1.12 | 1.12 | 1.12 | 1.12 | 1.12 | 1.12 | 13.41 |
| TOTAL CULTURAL COSTS | 34.14 | 1.12 | 1.12 | 1.12 | 1.12 | 13.96 | 4.33 | 33.43 | 6.15 | 34.37 | 1.12 | 1.12 | 133.09 |
| Harvest: | | | | | | | | | | | | | |
| Cut Beans | | | | | | | | | | | | 4.29 | 4.29 |
| Rake / Windrow 2X | | | | | | | | | | | | 6.07 | 6.07 |
| Harvest Beans | | | | | | | | | | | | 30.00 | 30.00 |
| TOTAL HARVEST COSTS | | | | | | | | | | | | 40.36 | 40.36 |
| Postharvest: | | | | | | | | | | | | | |
| Haul to King City | | | | | | | | | | | | 9.52 | 9.52 |
| Clean & Store | | | | | | | | | | | | 54.00 | 54.00 |
| TOTAL POSTHARVEST COSTS | | | | | | | | | | | | 63.52 | 63.52 |
| Interest on oper. capital | 0.22 | 0.23 | 0.24 | 0.25 | 0.25 | 0.35 | 0.37 | 0.59 | 0.63 | 0.86 | 0.87 | 1.56 | 6.43 |
| TOTAL OPERATING COSTS/ACRE | 34.37 | 1.35 | 1.36 | 1.36 | 1.37 | 14.30 | 4.70 | 34.03 | 6.78 | 35.23 | 1.99 | 106.55 | 243.40 |
| TOTAL OPERATING COSTS/LB | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.03 | 0.01 | 0.03 | 0.00 | 0.09 | 0.20 |
| OVERHEAD: | | | | | | | | | | | | | |
| Liability Insurance | | | | 1.37 | | | | | | | | | 1.37 |
| Office Expense | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 25.00 |
| Land Rent | | | | | | | | | | | | 77.27 | 77.27 |
| Property Taxes | | | | 1.17 | | | | | | 1.17 | | | 2.35 |
| Property Insurance | | | | 0.84 | | | | | | 0.84 | | | 1.68 |
| Investment Repairs | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 4.04 |
| TOTAL CASH OVERHEAD COSTS | 2.42 | 2.42 | 2.42 | 5.80 | 2.42 | 2.42 | 2.42 | 2.42 | 2.42 | 4.43 | 2.42 | 79.69 | 111.70 |
| TOTAL CASH COSTS/ACRE | 36.79 | 3.77 | 3.78 | 7.16 | 3.79 | 16.72 | 7.12 | 36.45 | 9.20 | 39.67 | 4.41 | 186.24 | 355.10 |
| TOTAL CASH COSTS/LB | 0.03 | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.01 | 0.03 | 0.01 | 0.03 | 0.00 | 0.15 | 0.29 |

Table 4.

U.C. Cooperative Extension
 WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS TO PRODUCE GARBANZO
 SAN LUIS OBISPO COUNTY - 1995/96

| ANNUAL EQUIPMENT COSTS | | | | | | | | |
|------------------------|--------------------|---------------|--------------------|-------------------|----------------|-------------------|----------------|-----------------|
| Yr | Description | Price | - Non-Cash Over. - | | | - Cash Overhead - | | Total |
| | | | Yrs Life | Depre- ciation | Interest | Insur- ance | Taxes | |
| 96 | 250 HP Crawler | 166238 | 10 | 14961.40 | 3401.23 | 651.90 | 914.31 | 19928.84 |
| 96 | 62 HP 2WD Tractor | 29060 | 10 | 2615.40 | 594.57 | 113.96 | 159.83 | 3483.76 |
| 96 | 92 HP 2WD Tractor | 52553 | 10 | 4729.80 | 1075.23 | 206.09 | 289.04 | 6300.16 |
| 96 | Bean Cutter 4 Row | 4000 | 12 | 300.00 | 81.84 | 15.69 | 22.00 | 419.53 |
| 96 | Disc - Offset 18' | 14562 | 15 | 873.73 | 297.93 | 57.10 | 80.09 | 1308.85 |
| 96 | Field Cultivator | 4676 | 15 | 280.53 | 95.68 | 18.34 | 25.72 | 420.27 |
| 96 | Harrow - Spike 14' | 772 | 15 | 46.33 | 15.79 | 3.03 | 4.25 | 69.40 |
| 96 | Pickup 3/4 Ton | 22650 | 7 | 2912.14 | 463.42 | 88.82 | 124.58 | 3588.96 |
| 96 | Planter-6 Row | 15015 | 10 | 1351.30 | 307.22 | 58.88 | 82.58 | 1799.98 |
| 96 | Rake 9' | 5363 | 15 | 321.80 | 109.72 | 21.03 | 29.49 | 482.04 |
| 96 | Shielded Sprayer | 3000 | 10 | 270.00 | 61.38 | 11.76 | 16.50 | 359.64 |
| 96 | Subsoiler - 12' | 6000 | 15 | 360.00 | 122.76 | 23.53 | 33.00 | 539.29 |
| 96 | Truck 5 Ton | 36100 | 7 | 4641.43 | 738.61 | 141.57 | 198.55 | 5720.16 |
| TOTAL | | 359989 | | 33663.86 | 7365.38 | 1411.70 | 1979.94 | 44420.88 |
| 40% of New Cost * | | 143996 | | 13465.54 | 2946.15 | 564.68 | 791.98 | 17768.35 |

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

| ANNUAL INVESTMENT COSTS | | | | | | | | |
|-------------------------|---------------|--------------------|-------------------|----------------|---------------------------|---------------|----------------|-----------------|
| Description | Price | - Non-Cash Over. - | | | ----- Cash Overhead ----- | | | Total |
| | | Yrs Life | Depre- ciation | Interest | Insur- ance | Taxes | Repairs | |
| INVESTMENT | | | | | | | | |
| Forklift - 5000 lb | 11261 | 10 | 1013.50 | 230.40 | 44.16 | 61.94 | 225.20 | 1575.20 |
| Fuel Tanks & Pumps | 18152 | 15 | 1089.13 | 371.39 | 71.18 | 99.84 | 363.00 | 1994.54 |
| Shop Building | 59682 | 20 | 2685.70 | 1221.09 | 234.04 | 328.25 | 1194.00 | 5663.08 |
| Shop Tools | 11936 | 20 | 537.10 | 244.22 | 46.81 | 65.65 | 238.70 | 1132.48 |
| TOTAL INVESTMENT | 101031 | | 5325.43 | 2067.10 | 396.19 | 555.68 | 2020.90 | 10365.30 |

U.C. Cooperative Extension

Table 4. Continued

| ANNUAL BUSINESS OVERHEAD COSTS | | | | |
|--------------------------------|----------------|------|----------------|---------------|
| Description | Units/ Farm | Unit | Price/ Unit | Total Cost |
| Land Rent | 500.00 | Acre | 77.27 | 38635.00 |
| Liability Insurance | 1.00 | Each | 684.00 | 684.00 |
| Office Expense | 500.00 | Acre | 25.00 | 12500.00 |

Table 5.

U.C. Cooperative Extension
 HOURLY EQUIPMENT COSTS TO PRODUCE GARBANZO
 SAN LUIS OBISPO COUNTY - 1995/96

| Yr Description | Actual Hours Used | COSTS PER HOUR | | | | | | | Total Oper. | Total Costs/Hr. |
|-----------------------|-------------------------|--------------------------------------|----------|-------------------------------------|-------|---------|-----------------------------|-------|----------------|--------------------|
| | | -Non-Cash Over- Depre- ciation | Interest | - Cash Overhead - Insur- ance | Taxes | Repairs | Operating Fuel & Lube | | | |
| 96 250 HP Crawler | 800.5 | 7.48 | 1.70 | 0.33 | 0.46 | 4.52 | 19.19 | 23.71 | 33.67 | |
| 96 62 HP 2WD Tractor | 800.4 | 1.31 | 0.30 | 0.06 | 0.08 | 0.95 | 4.03 | 4.98 | 6.72 | |
| 96 92 HP 2WD Tractor | 799.7 | 2.37 | 0.54 | 0.10 | 0.14 | 1.72 | 5.97 | 7.69 | 10.84 | |
| 96 Bean Cutter 4 Row | 25.0 | 4.80 | 1.31 | 0.25 | 0.35 | 0.42 | 0.00 | 0.42 | 7.14 | |
| 96 Disc - Offset 18' | 165.8 | 2.11 | 0.72 | 0.14 | 0.19 | 2.79 | 0.00 | 2.79 | 5.95 | |
| 96 Field Cultivator | 165.6 | 0.68 | 0.23 | 0.04 | 0.06 | 0.90 | 0.00 | 0.90 | 1.91 | |
| 96 Harrow - Spike 14' | 166.4 | 0.11 | 0.04 | 0.01 | 0.01 | 0.15 | 0.00 | 0.15 | 0.31 | |
| 96 Pickup 3/4 Ton | 284.7 | 4.09 | 0.65 | 0.12 | 0.18 | 2.74 | 3.45 | 6.19 | 11.23 | |
| 96 Planter-6 Row | 119.5 | 4.52 | 1.03 | 0.20 | 0.28 | 5.02 | 0.00 | 5.02 | 11.05 | |
| 96 Rake 9' | 166.5 | 0.77 | 0.26 | 0.05 | 0.07 | 0.86 | 0.00 | 0.86 | 2.02 | |
| 96 Shielded Sprayer | 120.1 | 0.90 | 0.20 | 0.04 | 0.05 | 1.00 | 0.00 | 1.00 | 2.20 | |
| 96 Subsoiler - 12' | 166.8 | 0.86 | 0.29 | 0.06 | 0.08 | 1.15 | 0.00 | 1.15 | 2.44 | |
| 96 Truck 5 Ton | 100.0 | 18.57 | 2.95 | 0.57 | 0.79 | 3.80 | 4.96 | 8.76 | 31.64 | |

Table 6.

U.C. Cooperative Extension
RANGING ANALYSIS TO PRODUCE GARBANZO
SAN LUIS OBISPO COUNTY - 1995/96

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE GARBANZO

| | YIELD (LB/ACRE) | | | | |
|-------------------------------|-----------------|------|------|------|------|
| | 1015 | 1115 | 1215 | 1315 | 1415 |
| ----- | | | | | |
| OPERATING COSTS/ACRE: | | | | | |
| Cultural Cost | 133 | 133 | 133 | 133 | 133 |
| Harvest Cost | 38 | 39 | 40 | 42 | 43 |
| Postharvest Cost | 64 | 64 | 64 | 64 | 64 |
| Interest on operating capital | 6 | 6 | 6 | 6 | 6 |
| TOTAL OPERATING COSTS/ACRE | 241 | 242 | 243 | 245 | 246 |
| CASH OVERHEAD COSTS/ACRE | 112 | 112 | 112 | 112 | 112 |
| TOTAL CASH COSTS/ACRE | 352 | 354 | 355 | 356 | 358 |
| NON-CASH OVERHEAD COSTS/ACRE | 39 | 40 | 40 | 41 | 41 |
| TOTAL COSTS/ACRE | 392 | 394 | 395 | 397 | 399 |
| ----- | | | | | |

NET RETURNS PER ACRE ABOVE OPERATING COSTS FOR GARBANZO

| PRICE (DOLLARS PER LB) | YIELD (LB/ACRE) | | | | |
|---------------------------|-----------------|------|------|------|------|
| | 1015 | 1115 | 1215 | 1315 | 1415 |
| ----- | | | | | |
| 0.30 | 64 | 92 | 121 | 150 | 179 |
| 0.35 | 114 | 148 | 182 | 216 | 249 |
| 0.40 | 165 | 204 | 243 | 281 | 320 |
| 0.45 | 216 | 260 | 303 | 347 | 391 |
| 0.50 | 267 | 315 | 364 | 413 | 462 |
| ----- | | | | | |

U.C. Cooperative Extension

Table 6. Continued

NET RETURNS PER ACRE ABOVE CASH COSTS FOR GARBANZO

| PRICE (DOLLARS PER LB) | YIELD (LB/ACRE) | | | | |
|---------------------------|-----------------|------|------|------|------|
| | 1015 | 1115 | 1215 | 1315 | 1415 |
| 0.30 | -48 | -19 | 9 | 38 | 67 |
| 0.35 | 3 | 36 | 70 | 104 | 138 |
| 0.40 | 54 | 92 | 131 | 170 | 208 |
| 0.45 | 104 | 148 | 192 | 235 | 279 |
| 0.50 | 155 | 204 | 252 | 301 | 350 |

NET RETURNS PER ACRE ABOVE TOTAL COSTS FOR GARBANZO

| PRICE (DOLLARS PER LB) | YIELD (LB/ACRE) | | | | |
|---------------------------|-----------------|------|------|------|------|
| | 1015 | 1115 | 1215 | 1315 | 1415 |
| 0.30 | -87 | -59 | -31 | -3 | 26 |
| 0.35 | -37 | -3 | 30 | 63 | 97 |
| 0.40 | 14 | 52 | 91 | 129 | 167 |
| 0.45 | 65 | 108 | 151 | 195 | 238 |
| 0.50 | 116 | 164 | 212 | 260 | 309 |
