

CORN IN FRESNO COUNTY
COST ANALYSIS WORK SHEETS

October 16, 1963

by
Bill B. Fischer and E. A. Yeary*

Corn is grown extensively in Fresno County. It is planted in April or May as a full season summer crop. Many growers plant corn following the harvest of barley, oats, or an oat-vetch hay crop. This practice is often referred to as doublecropping.

Corn is grown for grain or for silage. For optimum yields corn should be planted on fertile, well-drained soils. Planting it on shallow soils and soils high in salts will rarely produce economically profitable yields.

PLANTING:

To obtain rapid germination and good seedling growth, corn should be planted when the soil temperature is above 50°F.

To obtain optimum yields with most varieties, the seeds should be spaced 9 inches apart in 38" to 42" rows. Some late maturing varieties will benefit from wider, 10"-12", within the row spacing.

Planting rates should be determined by the size of the seed and plant population desired. A population of 18,000 to 20,000 plants per acre is desirable and if medium flat seeds are planted, approximately 14 to 16 pounds of seeds per acre will be needed.

FERTILIZATION:

Corn is a heavy user of nitrogen. It will require 160 to 250 lbs. of actual nitrogen per acre. Any form of nitrogen can be used, but split applications, especially on sandy soils, are desirable.

In many areas of Fresno County, corn will benefit from phosphorous fertilization. A soil test is the best method to determine the need for phosphorous.

If phosphorous is needed, 20-40 lbs/A is adequate and in most areas of the County, an all water soluble source of phosphorous should be used.

IRRIGATION:

During the growing season corn will require approximately 36" of water. The frequency of irrigation and the amount of water to apply at each irrigation should be determined by the depth and texture of the soil. Corn should not suffer from lack of moisture, especially when the plants are tasseling and silking.

*Bill B. Fischer, Farm Advisor, Fresno County; E. A. Yeary, Farm Advisor, Statewide.

VARIETIES:

Several well adapted varieties of hybrid corn are available to Fresno County growers. These varieties will produce mature grain in 120 to 160 days, or silage in 90-120 days.

New varieties of corn are developed and introduced yearly. The performance and local adaptability of old and new varieties are being evaluated continually by personnel of the University of California.

Information about corn varieties to plant is available at the local Farm Advisors Office.

CULTIVATION:

Corn in its early stage of development is a poor competitor with weeds, but once it attains a height of 18 to 20 inches it will shade and keep ahead of the weeds. Therefore, two well-timed cultivations should be adequate.

HARVESTING & STORING:

Corn can be harvested when the moisture content of the kernel is in the range of 22-25%, if grain drying facilities are available. For safe storage the moisture content of shelled corn should be 15% or below.

When harvesting for silage the kernels should be well dented and the average moisture content of the plants should be 67% to 70%.

The average yield of corn in Fresno County is 4,000 lbs per acre. But yields of 6,000 to 8,000 lbs per acre is not uncommon. With good management a grower can produce a satisfactory corn crop.

The cost analysis work sheets that are attached should be useful when planning a crop program, to estimate needed cash, and to make production cost comparisons between two or more crops.

Insects and diseases can be a problem, but the economics of field corn production seldom justify the application of a pesticide.

Land values, taxes, water and labor costs vary from one area of the County to the other. Costs of production vary greatly from farm to farm. Therefore, the actual cost to produce field corn as a full season crop, or in a doublecropping program, on any one farm will vary from the one here presented.

FIELD CORN - SINGLE CROPPED

Cost Analysis Work Sheet

Sample costs to produce field corn, single cropped in Fresno County. Based on a yield of 6000 lbs. per acre. Man labor \$1.05 per hour total, and equipment operator \$1.30 medium wheel tractor per hour cash costs \$1.15, depreciation 54¢ and interest 25¢.

| | <u>Sample Costs</u> | | <u>My Costs</u> | |
|--|---------------------|-----------------|-----------------|-----------------|
| | <u>Per Acre</u> | <u>Per Cwt.</u> | <u>Per Acre</u> | <u>Per Cwt.</u> |
| <u>PRE-HARVEST CASH COSTS</u> | | | | |
| Land preparation: 1 3/4 hrs. man & tractor | 4.29 | | | |
| Fertilize: 1/2 hr. man & tractor | 1.23 | | | |
| Fertilizer: pre-plant & side dress 180 lbs. N @ 8¢ | 14.40 | | | |
| Plant: 1/3 hr. man & tractor | .82 | | | |
| Seed: 15 lbs. @ 25¢ | 3.75 | | | |
| Cultivate: 2 times - 1 hr. man & tractor | 2.45 | | | |
| Irrigate: (1 pre and 5-7 crop) 6 man hrs. | 6.30 | | | |
| Water: power for 3 ac. ft. @ \$2.50 | 7.50 | | | |
| Misc.: 1 man hr. 2/3 tractor hr. 50¢ materials | 2.49 | | | |
| County taxes | 6.75 | | | |
| Office, car, operating capital, etc. | 2.50 | | | |
| Repairs to equipment except tractor | 2.00 | | | |
| TOTAL PRE-HARVEST CASH COSTS | 54.48 | .91 | | |
| <u>HARVESTING COSTS</u> | | | | |
| Combine: man & self propelled combine | 4.50 | | | |
| Haul from field: \$2 per ton | 6.00 | | | |
| TOTAL HARVESTING COSTS | 10.50 | .17 | | |
| TOTAL CASH COSTS | 64.98 | 1.08 | | |
| <u>DEPRECIATION</u> | | | | |
| Irrigation system and bldgs. cost \$120 - 16 yrs. life | 7.50 | | | |
| Tractor: 4 1/2 hrs. @ 54¢ | 2.30 | | | |
| Combine: cost \$52 - 10 yrs. life | 5.20 | | | |
| Other equipment: cost \$15 - 10 yrs. life | 1.50 | | | |
| TOTAL DEPRECIATION | 16.50 | .28 | | |
| <u>INTEREST ON INVESTMENT @ 6%</u> | | | | |
| Irrigation system and bldgs. 1/2 cost \$60 | 3.60 | | | |
| Tractor: 4 1/2 hr. @ 25¢ | 1.06 | | | |
| Combine: 1/2 cost \$26 | 1.56 | | | |
| Other equipment: 1/2 cost \$7.50 | .45 | | | |
| Land: \$700 | 42.00 | | | |
| TOTAL INTEREST ON INVESTMENT | 48.67 | .81 | | |
| TOTAL COST OF PRODUCTION | 130.15 | 2.17 | | |

| Yield Lbs. per acre | <u>COSTS PER CWT. AT VARYING YIELDS</u> | | | | | |
|-----------------------------|--|------|------|------|------|------|
| | 3000 | 4000 | 5000 | 6000 | 7000 | 8000 |
| Cash and depreciation costs | 2.62 | 1.99 | 1.61 | 1.36 | 1.18 | 1.04 |
| Total cost per cwt. | 4.24 | 3.20 | 2.58 | 2.17 | 1.87 | 1.65 |

| Yield in Tons per A. | Sample Prod. Costs per A. \$ | <u>HOW MUCH PROFIT PER ACRE?</u> | | | | |
|----------------------|------------------------------|--|--------|--------|--------|--------|
| | | <u>Selling Price of Field Corn per Ton</u> | | | | |
| | | 46.00 | 48.00 | 50.00 | 52.00 | 54.00 |
| 2 | 128.15 | -36.15 | -32.15 | -28.15 | -24.15 | -20.15 |
| 2 1/2 | 129.15 | -14.15 | -9.15 | -4.15 | .85 | 5.85 |
| 3 | 130.15 | 7.85 | 13.85 | 19.85 | 25.85 | 31.85 |
| 3 1/2 | 131.15 | 29.85 | 36.85 | 43.85 | 50.85 | 57.85 |
| 4 | 132.15 | 51.85 | 59.85 | 67.85 | 75.85 | 83.85 |

FIELD CORN DOUBLE CROPPED

Cost Analysis Work Sheet

Sample costs to produce field corn, double cropped, in Fresno County. Based on a yield of 4,000 lbs. per acre. Man labor \$1.05 per hour total, and equipment operator 1.30. Medium wheel tractor per hour cash costs \$1.15, depreciation 54¢ and interest 25¢.

| | Sample Costs | | My Costs | |
|--|---------------|-------------|----------|----------|
| | Per Acre | Per Cwt | Per Acre | Per Cwt. |
| PRE-HARVEST CASH COSTS | | | | |
| Land preparation: 1 hr. man & tractor | 2.45 | | | |
| Fertilize: ¼ hour man and tractor | .61 | | | |
| Fertilizer: 160 lbs. N at 8¢ | 12.80 | | | |
| Plant: 1/3 hr. man and tractor | .82 | | | |
| Seed: 15 lbs. at 25¢ | 3.75 | | | |
| Cultivate: 2 times - 1 hr. man and tractor | 2.45 | | | |
| Irrigate: (1 pre and 4-5 crop) 5 man hrs. | 5.25 | | | |
| Water: power for 2½ ac. ft. at 2.50 | 6.25 | | | |
| Misc. 1 man hr. 2/3 tractor hr. 50¢ materials | 2.49 | | | |
| County Taxes 60% of 6.75 | 4.05 | | | |
| Office, car, operating capital, etc. | 1.80 | | | |
| Repairs to equipment except tractor | 1.50 | | | |
| TOTAL PRE-HARVEST CASH COSTS | 44.22 | 1.10 | | |
| HARVESTING COSTS - Contract basis | | | | |
| Combine: 6.00/acre + 10¢ cwt. | 10.00 | | | |
| Haul from field at 2.00 per ton | 4.00 | | | |
| Drying: 4.75 per ton | 9.50 | | | |
| Haul to storage: 1.00 per ton | 2.00 | | | |
| TOTAL HARVESTING COSTS | 25.50 | .64 | | |
| TOTAL CASH COSTS | 69.72 | 1.74 | | |
| DEPRECIATION | | | | |
| Irrigation system and bldgs. 120. cost - 16 yr. life 60% | 4.50 | | | |
| Tractor: 3½ hrs. at 54¢ | 1.76 | | | |
| Other equipment: cost 15.00, 10 yr. life 60% | .90 | | | |
| TOTAL DEPRECIATION | 7.16 | .18 | | |
| INTEREST ON INVESTMENT AT 6% | | | | |
| Irrigation system and bldgs. ½ cost \$60. - 60% | 2.16 | | | |
| Tractor: 3½ hrs. at 25¢ | .81 | | | |
| Other equipment: ½ cost \$7.50 - 60% | .27 | | | |
| Land: \$700.00 - 60% | 25.20 | | | |
| TOTAL INTEREST ON INVESTMENT | 28.44 | .71 | | |
| TOTAL COST OF PRODUCTION | 105.32 | 2.63 | | |

COSTS PER CWT AT VARYING YIELDS

| Yield: lbs. per acre | 3000 | 4000 | 5000 | 6000 | 7000 |
|-----------------------------|------|------|------|------|------|
| Cash and depreciation costs | 2.40 | 1.92 | 1.64 | 1.45 | 1.31 |
| Total cost per cwt. | 3.35 | 2.63 | 2.20 | 1.92 | 1.71 |

HOW MUCH PROFIT PER ACRE?

| Yield in tons per acre | Sample prod. costs per ton | Selling price of Field Corn per ton | | | | |
|------------------------|----------------------------|-------------------------------------|--------|--------|--------|--------|
| | | 46.00 | 48.00 | 50.00 | 52.00 | 54.00 |
| 1½ | 100.45 | -31.45 | -28.45 | -25.45 | -22.45 | -19.45 |
| 2 | 105.32 | -13.32 | - 9.32 | - 5.32 | - 1.32 | 2.68 |
| 2½ | 110.20 | 4.80 | 9.80 | 14.80 | 19.80 | 24.80 |
| 3 | 115.08 | 22.92 | 28.92 | 34.92 | 40.92 | 46.92 |
| 3½ | 119.95 | 41.05 | 48.05 | 55.05 | 62.05 | 69.05 |