

WHAT ABOUT HYBRID CORN FOR TULARE COUNTY

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INTRODUCTION

An important feature of hybrid corn is its versatility. This crop can be grown for grain and used as a cash crop or feed; or it can be grown for ensilage or pastured as a livestock feed.

Growers of hybrid corn for grain in California also have a freight differential advantage over corn shipped in from the middle west corn belt. This differential means added income to local growers. The price for corn locally will depend to a great extent upon the mid-west supply and demand.

Corn grows best on fertile well drained soils. On the poorer soils plant growth may use most of the available nutrients leaving little for grain production.

CULTURAL OPERATIONS

RATE OF PLANTING

Early spring planting, after the danger of frost is past, is recommended for maximum production. Generally after the middle of March is alright. Since corn is a warm weather crop, soil temperature should be above 60°F for best germination.

Plantings may be made as late as early July with a reasonable chance of success using short season varieties. Yields will be reduced; however, and disease and insect damage is likely to be greater.

Planting too early or in a poor seedbed will usually result in a poor stand.

SEEDBED PREPARATION

In years of low rainfall, or with late plantings, a pre-irrigation may be necessary to supply moisture for germination and seedling establishment. A seedbed should be moist, firm and as free of weeds as possible.

Many growers prepare a seedbed by double discing and harrowing. Plowing may be necessary to turn under trash or refuse from the previous crop.

PLANTING

Corn may be planted with a cotton planter using corn plates. Most growers plant on the flat, although on some of the heavier soils or where time does not permit a pre-irrigation, corn can be planted on ridges and irrigated up.

Early in the season corn should not be planted too deep. Seed near the surface will germinate faster because of higher soil temperatures. Depth of planting should be 1 to $1\frac{1}{2}$ inches on heavy soil and about 3 inches on the lighter soils.

In experiments conducted for several years at Davis it appears that on fertile soils, well supplied with nitrogen, a plant population of about 17,500 plants per acre gives optimum yield. With 40 inch rows, this would mean the plants are approximately 9 inches apart. Generally corn is planted in rows spaced 36 to 42 inches apart. On less fertile soil a smaller population (10 to 14 inches between plants) give better results. Using a corn plate, 8 to 10 pounds of seed will plant an acre.

FERTILIZATION



Corn is a heavy user of nitrogen. A 100 bushel crop of corn (5600 pounds shelled) requires about 150 pounds of actual nitrogen. An application of 60 to 120 pounds of actual nitrogen should be

applied on fields of medium to poor fertility. Lack of available nitrogen may be indicated by slight plant growth and light green or yellow green foliage.

Soils in the county where phosphorous is deficient should receive phosphate as well as nitrogen. A phosphate deficiency is indicated by stunted plants or purple leaves in young corn.

Fertilizer can be applied by broadcasting prior to planting or by side dressing. Side dressing appears to be the most efficient way to apply the fertilizer. Side dressing should be applied at or following planting, at least prior to the first irrigation to insure rapid plant development.

Corn will benefit by following a legume, and responds well to use of manure.

CULTIVATION

The main reason to cultivate corn is to control weeds. Weeds compete with corn for moisture and nutrients, making their control essential. In general cultivation should be shallow; deep cultivation will injure the roots of the corn plant. In this area one to three cultivations is the general practice. Cultivation should be discontinued after the corn is tall enough to be damaged.

IRRIGATION

Corn uses large quantities of water especially at tasseling time. Corn will use $2\frac{1}{2}$ to 3 acre feet of water during the growing season. Corn should never be allowed to suffer from moisture at any time. Leaf curl in mid afternoon is common during high summer temperatures. Leaf curl at noon or before, is an indication of a depletion in soil moisture. This latter condition is undesirable.

Light applications of water are adequate during the early part of the season because of the shallow root system. Beginning about tasseling time the applications should be heavier because of the deeper root system. Irrigation after the kernels have dent-ed may delay harvest. The number of irrigations will depend upon the type of soil, season and date of planting.

DISEASES AND INSECTS

Corn smut and fusarium ear rot or pink mold are two serious diseases of corn. These diseases are seldom a serious problem in Tulare County. There is no control for these diseases, as fungi that cause them live in the soil. Generally smut will not be as serious if the corn is planted early. Annual rotation of corn aids in the control of smut.

The corn earworm is a major insect pest of corn. In field corn the insect cannot be controlled economically.

For fields known to contain wireworms, use of Lindane treated seed is recommended.

Use of corn seed treated with one of the organic mercury fungicides such as Arasan, Semesan Jr. and others are recommended to prevent seedling diseases. Treated seed is cheap insurance of a better stand.

HARVEST

Some growers prefer to follow a crop of barley with a summer crop of corn. This summer crop can be used for ensilage or grain.

GRAIN



Corn for grain will mature in about 130 to 145 days, approximately 55 days after silking. Corn for grain can be picked and stored in cribs when the moisture content of the grain is below 25% or can be picked at 30 to 35% moisture and dried with a forced air drier. If drying facilities are available, mechanical pickers cause less shattering of grain if the corn is picked before it becomes extremely dry. Corn can be shelled when the moisture content is about 20%, however, it should not have more than 14% moisture for safe storage of the shelled corn.

Corn for grain can be picked by hand or with a mechanical picker. Picking and shelling can be combined into a single operation by towing a sheller behind the picker. The corn is sacked as it is shelled.

Planting corn for grain after mid June is not recommended. Corn maturing in late October or early November may not dry readily due to damp weather.

ENSILAGE

Corn for ensilage will be in about the right stage for cutting in 110 to 125 days, approximately 40 days after silking. This corn should be in the

hard dough stage, with the kernels well dented with a glazed appearance. The lower leaves should be turning brown.

Corn for ensilage can be planted up to early July with a good chance of maturing the crop. Rainy weather on corn for ensilage does not affect the quality, since it does not deteriorate. However, difficulty may be encountered in harvest. Corn can be harvested by using an ensilage attachment on a hay chopper. More detailed information on corn for silage is available in the University of California Circular 411 entitled "Silage, Silage Crops and Silos."

FEED

Corn may be pastured off by livestock and turkeys. It is usually knocked down for sheep and turkeys. For hogs, controlled grazing is advisable. Shelled corn should be ground when fed to cattle not being followed by hogs. Shelled corn need not be ground for sheep feed.

VARIETIES

Yield results of grain trials in Tulare County are included in table A. From this data the grower may select a variety that will suit his soil and planting date. There may be other varieties that are as good as those tested in these trials.

More detailed information such as height of plant, height of ear, maturity, diseases and other information may be obtained in another pamphlet at the Farm Advisors Office.

COSTS OF PRODUCTION

Table B, presents data from a cost study of Hybrid Corn production in the San Joaquin Valley. These costs are variable and only give a sample of production costs.

5/53
CORN, Field

TABLE A

VARIETY TESTS-YIELD IN POUNDS OF SHELLED CORN PER ACRE - TULARE COUNTY

Variety	Plot 1# (1950)		Plot 2# (1950)		Plot 3# (1952)	
	Yield	Rank	Yield	Rank	Yield	Rank
Pioneer 300	4508	6	5174	5	6238	6
Pioneer 302	5230	4	5387	4	6574	4
Pioneer 352	5488	3	6138	1	6442	5
Pioneer 505 W	6418	1	4743	8	6965	2
DeKalb 666	3298	14	5768	2		
DeKalb 850					6781	3
DeKalb 1002	6054	2	4911	6	5679	9
DeKalb 1022					5766	8
Pfister 347					6131	7
Pfister 381					7037	1
Northrup King KR-2	3629	12	5706	3		
Northrup King KY-4	4004	9	4026	10		
Northrup King K-3	3662	11	3662	12	5649	10
Aggler-Musser Y	3971	10	4810	7		
* King Phillip	2934	15	4570	9		
* Big Jim	3319	13	3394	13		
Vinton K-22	2856	16	3707	11		
* Mexican June W	2688	18	2453	14		
* Hickory King W	2425	19	1350	15		
Sunland 400	4738	5				
Sunland 456	4127	8				
Ferry Morse 68075	4273	7				
* Tulare County White W 2822	17					

White grained corn W

* Not Hybrid

Plot 1 was on the A. Grant Ranch, Visalia Planted 6/5/50 - Harvested 11/9 & 10/50
Soil-Foster fine sandy loam

Plot 2 was on the T. & R. Ranch, Lindsay Planted 4/20/50 - Harvested 9/27 & 28/50
Soil-Madera loam

Plot 3 was on the B. Pennebaker Ranch, Exeter Planted 4/18/52 - Harvested 9/15 & 16/52
Soil-Foster fine sandy loam

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