ELEMENTS OF COTTON PRODUCTION IN FRESNO COUNTY FOR THE BEGINNER

March, 1952

UC COOPERATIVE EXTENSION
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in
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Situation and Outlook

The Secretary of Agriculture has issued an appeal to farmers of this nation to produce at least 16,000,000 bales of cotton in 1952. Cotton is listed as a critical material, second only to steel as a strategic material. The support level has been fixed at 90% of parity which represents a price floor of approximately $2.5 for middling, 1 1/16" for California cotton. The carry-over from the 1951 season's crop is apparently not excessive and will be close to what we had going into the 1951 harvest — somewhere around 2½ million bales which is about one-half the normal carry-over supply. Early reports indicate that there will be another increase in acreage over 1951.

Cultural Operations

Planting and Thinning

In general, 15 to 30 pounds per acre are seeded at a depth of one to two inches in rows spaced 36 to 42 inches center to center, from late March to May 15 — depending on the area in the County. Early planting is recommended, or when the soil temperature reaches 58°F at an 8 inch depth at 8:00 a.m. for 3 or 4 consecutive days. Acala 4-42 is the only variety permissible for planting in Fresno County under the one variety law in California. Thinning operations can begin when the plant is 4 to 7 inches tall.

Highest yields have been obtained with plant spacing of two to nine inches. It is not necessary to thin to

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single plants. If the field is to be planted to a stand without any thinning it is suggested that not more than 15 pounds of seed be planted. Field tests indicate that the closer spacing of cotton plants in the drill will induce higher fruiting on the plant, which in turn will increase the mechanical efficiency of machine pickers. It is recommended that cotton for machine picking be planted on 40 inch centers on beds or flat planted. To date, there hasn't been any significant difference in yield with the bed vs. flat methods. However, the machine picking efficiency is better with the bed planted cotton.

Most soils in Fresno County will benefit from applications of fertilizers. Nitrogen appears to be the fertilizer element most needed. Nitrogen at the rate of 40 to 100 pounds actual nitrogen per acre (200 to 500 pounds ammonium sulphate) has given the most economical gain where cotton is to follow cotton in the rotation. It is of prime importance to have the fertilizer applied as early as possible; preferably at planting or before the first crop irrigation after planting.

The material should be applied as a side dressing 4 inches to the side of the drill row and 4 to 5 inches in depth for early season applications. If the side dressing is accomplished later in the season, the fertilizer placement should be increased to 6-8 inches to the side of the plants, 4 to 5 inches deep. CAUTION: The fertilizer should never be placed immediately below the seed. If side dressing attachments are not available for use it is recommended that the fertilizer be applied prior to planting and disked in. Placement of the fertilizer in the irrigation furrow apparently makes for inefficient use of the fertilizer materials.

With April planted cotton the full complement of fertilizer should be applied not later than the first week in June. It has been our experience that a split application of fertilizers has no advantage over a single application.
poor flavor and/or odor; (3) seed treatment with Lindane (purified form of BHC). The cost will vary from 75¢ to $25.00 per acre, according to which method of control is used. Details for cotton soil fumigation are available at the local Farm Advisers office.

Additional Information

Cotton growers who wish to receive supplemental information on cotton culture and related data as it is developed by the University of California or who would like to be notified by mail of field meetings and demonstrations to be conducted this season may obtain this service by sending a card with their name and address to the Agricultural Extension Service, Room 20, Post Office Building, Fresno, California; Phone 3-2284.

Irrigation

Proper irrigation is a major factor which determines profit or loss. It is suggested that the soil have available moisture to a depth of five to six feet at planting. Cotton will require a minimum of 3 1/2 to 4 acre feet of water for maximum production. The number of irrigations per season will vary from three to fourteen irrigations, depending on the soil type. Cotton plants should never be allowed to go into an undue wilt because of lack of water, since it induces excessive square shedding and promotes 3 to 4 lock cotton bolls; thereby affecting yields. The usual guide to determine when water is needed is when an undue wilt is noted during the hottest part of the day or when the plants appear to turn a darker green color. In general, the last irrigation is applied during the first week of September. Late irrigations provide succulent new growth which promotes aphids infestations and results in "honeydew" bales—a serious factor in low quality lint.

Cultivation

The main objective in cultivation is weed control except in isolated areas where tight soils require tillage in order to get adequate water penetration. The cultivations should be shallow since soils usually dry out to the depths stirred. As soon as the plants reach a sufficient height soil can be worked into the drill in order to cover any small weeds that may appear and at the same time begin to develop a furrow for ease in handling subsequent irrigations.

Insects

Early observance and timely insect control are extremely essential. Among the numerous insects which attack cotton, the Lygus or "cotton dauber" is the most serious. Normally, two dustings of DDT, spaced
21 to 30 days apart, will provide adequate protection. Control measures should be taken when a 15 inch diameter not properly swung 50 times through the tops of one row collects an average of 5 young or 10 adult lygus bugs. Therefore, 1 young lygus is equivalent to two adult insects. An average of 3 young and 4 adults is equivalent to 10 adults or 5 young. The first dust application is usually applied around June 15. A complete leaflet on cotton insect control is available.

Defoliation

Cotton defoliation is a process whereby a cotton plant can be induced to shed its leaves through the application of a chemical dust or spray. Cotton is defoliated for the following reasons:

1. To aid in hand picking.
2. To increase efficiency of mechanical cotton pickers.
3. To assist in obtaining cleaner seed cotton.
4. To lessen late season boll rots.

A complete leaflet on materials to use, time, and method of application for cotton defoliation is available.

Picking

Harvest operations may begin as early as September 15, depending on the stage of maturity. The average price paid for hand picking during the 1950 season was $2.00 per hundredweight; contract machine picking averaged $3.00 per hundredweight. Yield may be estimated as follows:

Seven bolls per running foot of row on 38-inch centers equals 1 bale per acre. The boll count should be made on 50 to 100 feet of row on several locations in the field.

Diseases and Pests

Verticillium Wilt

This is a serious disease of cotton and is widespread in Fresno County. Cultural practices which enhance yields such as maintaining optimum moisture and nutrient levels in the soil—promote the degree of Wilt. In order to lessen Verticillium Wilt it is suggested that nitrogen use be minimized and the moisture supply maintained at a high level, with shorter intervals between irrigations.

Sore-Shin; Damping Off (Phizoctonia)

This is a fungus disease. Use treated planting seed and cultivate as early as possible for late planting seed treatment is of doubtful value. A rotary hoe has been used with good results. If the field has to be replanted moving the position of the drill area is desirable and beneficial. Do not irrigate as additional moisture aggravates the condition.

Nematode

Most prevalent on light, sandy soils. Land known to be infested with nematodes should be avoided unless the nematode population is reduced through a soil fumigation with 2D (dichloropropane-dichloro propene) or 9EB (ethylene dibromide) prior to planting. The cost will be between $25 and $35 per acre.

Wireworm

Usually prevalent where cotton follows a sod crop, such as permanent pasture, or is planted in soils high in organic matter. Control methods are (1) soil fumigation with 9EB; (2) soil application of BHC (benzene hexachloride)—CAUTION—the latter should not be used on land upon which potatoes, peas, beans, melons, and other vegetables are to follow cotton, as BHC may cause
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