

J. O. HOYT

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UNIVERSITY OF CALIFORNIA
COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATION

County Project No. _____

State Project No. _____

Subject: Influence of fertilization on yield and quality of cotton.

Cooperating Groups: The Division of Agronomy and Agricultural Extension Service of the University of California cooperating with U. S. Cotton Field Station.

Experimental Plan: To establish through field test plots, the fertility requirements of cotton as grown on the major producing soils of the San Joaquin Valley. Rates and methods of fertilization as they influence yield and cotton quality are to be studied through yield trials and supplemented by soil and plant tissue tests. This program will be conducted over a three to five year period to thoroughly explore the problems involved.

Leaders: Fresno County Farm Advisor, J. O. Hoyt, will act as liaison between the Division of Agronomy, Agricultural Extension Service, U. S. Cotton Field Station and the Cooperator W. W. Weeth.

The Farm Advisor, acting with Mr. Marvin Hoover, Extension Specialist in Cotton, University of California agree to:

- (1) Supervise the project in cooperation with the land owner so that the test may be conducted in a prescribed scientific manner.
- (2) Assist in supervising the various operations such as planting, fertilizing, sampling, harvesting, etc.
- (3) To take soil and plant tissue samples according to instructions supplied by Division of Agronomy.
- (4) To keep a record of crop response as affected by the experimental treatments.

The Division of Agronomy, represented by Dr. D. S. Mikkelsen agrees to:

- (1) Supply technical supervision in planning, establishing and harvesting the experimental plots.
- (2) Supply technical details concerning experimental techniques and procedures to be used.
- (3) Perform all chemical analyses of soil and plant tissue samples.
- (4) Evaluate and interpret the data obtained.
- (5) To assist those engaged in this work in bringing about its successful conclusion.

W. W. Weeth, legal owner of the area selected for a cotton fertilization trial, agrees to be responsible for:

- (1) Providing sufficient land for the experimental plots. This area would not exceed 5 acres unless the cooperator desires.
- (2) Providing equipment and labor to aid in planting, fertilizing, cultivating, irrigating, and harvesting the crop.
- (3) Preparing the land according to usual manner of cotton culture.
- (4) Irrigating the area in accordance with good practices common to the district.
- (5) Treating the experimental area in a uniform manner regarding weeding, thinning, irrigating insect control etc.
- (6) Providing the fertilizer materials whenever possible.
- (7) Making this land available for experimentation with the provision that circumstances not now foreseen may interfere with this agreement.

All cotton produced on the experimental plots shall be the property of the owner. It is understood that this cotton will not be harvested until those concerned with the experimental plot have obtained their yield data. Arrangements shall be made for the cotton harvest by all parties concerned, to both pick and weigh the harvested cotton.

The landowner is in agreement with the policy of the University to permit free dissemination of experimental findings at the discretion of the research group.

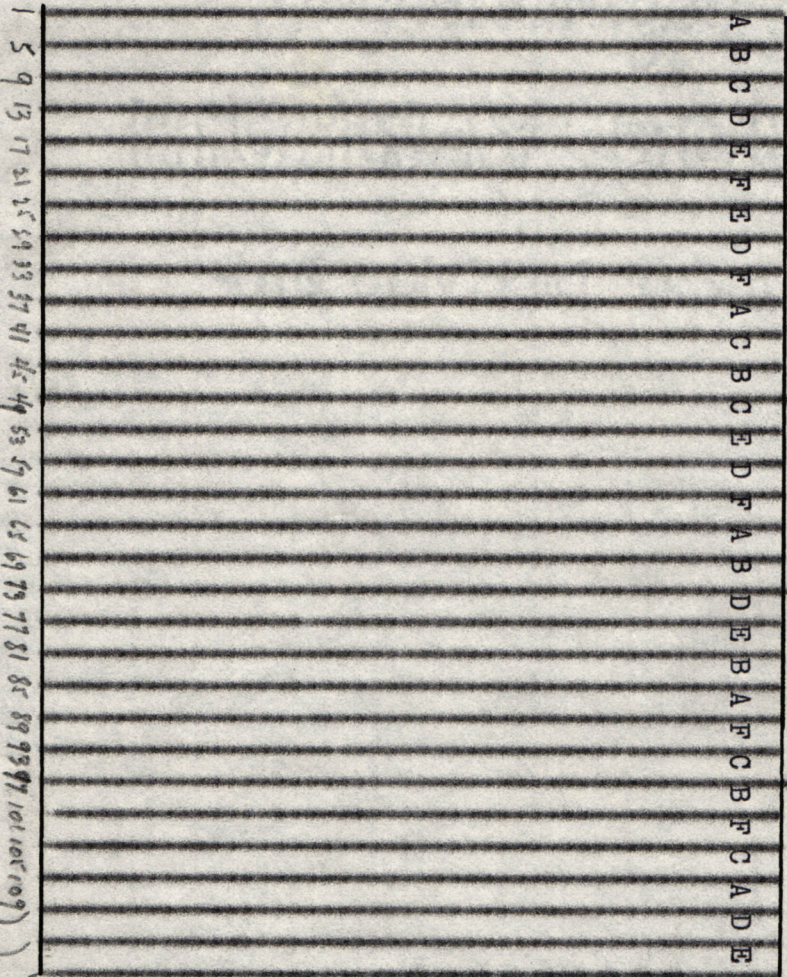
Mr. George Harrison, U. S. Cotton Field Station, agrees to lend his technical assistance in this project. He has agreed to perform quality tests on the cotton fiber and to assist in the interpretation of experimental findings.

MINIMUM COTTON FERTILIZATION EXPERIMENTAL DESIGN

Proposed Plot Layout
Randomized Block - 6 Treatments - 5 Replications

Robert

Block 1 | Block 2 | Block 3 | Block 4 | Block 5



Number of blocks may be increased
Minimum Length Row 500'
4 Rows/Treatment, 30' - 40' Spacing

113 117 120

Treatments

A	.	.	.	.	.	Check
B	.	.	.	.	.	N50
C	.	.	.	.	.	N100
D	.	.	.	.	.	N150
E	.	.	.	.	.	N100 P ₂₀ 5
F	.	.	.	.	.	N100 P ₂₀ 5 120 K ₂₀ 100

RM

00000) opening 000000000000 Tree line
roadway

FERTILIZER REQUIREMENTS

<u>Treatment</u>	<u>Rate</u>	<u>Source</u>	<u>Material required</u> <u>5 reps. x 500' rows</u>
Check			
N 50	N 50	$(\text{NH}_4)_2 \text{SO}_4$	250 lb/acre
N 100	N 100	$(\text{NH}_4)_2 \text{SO}_4$	500 lb/acre
N 150	N 150	$(\text{NH}_4)_2 \text{SO}_4$	750 lb/acre
N 100 P 120	N 100 P 120	16-20-0	600 lb/acre
N 100 P 120 K 100	N 100 P 120 K 100	10-12-10	1000 lb/acre

TOTAL FERTILIZER REQUIREMENTS

<u>Materials</u>	<u>5 reps. x 500' rows</u>
$(\text{NH}_4)_2 \text{SO}_4$	1500 Pounds
16-20-0	600 "
10-12-10	1000 "

CALENDAR OF OPERATIONS

DATE	WHAT	WHO	WHERE
March 1951	Write Project	Research Group	Davis & Shafter
	Select Cooperator	Farm Advisor & Research Group	Fresno, Kern, Kings County
	Plan project with cooperator	Farm Advisor Research Group	Fresno, Kern, Kings County
	Pre-irrigate land & prepare seed bed	Cooperator	Fresno, Kern, Kings County
Late March - April	Plant seed and fertilize if possible	Research Group Cooperator	Fresno, Kern, Kings County
	Take soil samples	Farm Advisor	Fresno, Kern, Kings County
May-June	Fertilize, if not done earlier	Research Group Cooperator	Fresno, Kern, Kings County
	Thin stand	Cooperator	Fresno, Kern, Kings County
June-November	Irrigate, cultivate, weed and control insects according to good cultural practices	Cooperator	Fresno, Kern, Kings County
	Take soil and plant tissue samples. Record growth characteristics of treated plants.	Farm Advisor	Fresno, Kern, Kings County
	Analyze soil and plant tissue samples	Agronomy Division	Davis
October-December	Harvest plots and sample for quality and chemical tests	Research Group Cooperator	Fresno, Kern, Kings County

Signed:

J. Earl Coke, Director of
Agricultural Extension Service

R. C. Crouch, County Director
Fresno County

Fred N. Briggs, Head, Division of
Agronomy
Chmn. Cotton Fertilization Committee

J. O. Hoyt, Farm Advisor
Fresno County

D. S. Mikkelsen, Division of Agronomy

Marvin Hoover, Extension
Specialist in Cotton

George Harrison, U. S. Cotton
Field Station

W. W. Weeth, Cooperator