INSECTS

Stewart Lockwood

Imperial Damage

September 30, 1954

COPY

Mr. Stewart Lockwood
Bureau of Entomology
Department of Agriculture
Sacramento 14, California

Dear Stewart:

Thank you very much for your letter of the 28th enclosing the copy of your report on the Leaf Roller situation in the Imperial Valley. You can rest assured that I will be pleased to receive a copy of the looseleaf Insect Pest Control manual that you have prepared, and will also be pleased to have my name on the list for any fillers to be sent out.

Both Larry and I were pleased to visit with you upon your return from the Valley and I will be most pleased to see you any time you are in this "neck of the woods".

With kind personal regards, I am

Very truly yours,

hlp/mb

H. L. Pomeroy

LBN
Put in CPSSO file

W. C. JACOBSEN
ACTING DIRECTOR

Goodwin J. Knight
Governor

SACRAMENTO 14 (HDQRS. OFFICE)
STATE OFFICE BLDG. NO. 1
SAN FRANCISCO 5
EMBARCADERO AT MISSION
LOS ANGELES 12
900 MIRROR BUILDING

STATE OF CALIFORNIA

Department of Agriculture

September 28, 1954

Mr. Harold Pomeroy, President
California Planting Cotton Seed Dist.
2001 "F" Street
Bakersfield, California

Dear Harold:

There is attached hereto a copy of a report I presented to the Chief of this Bureau, relative to the leaf roller situation in Imperial County. It occurred to me that the California Planting Cotton Seed Distributors might be interested in this matter.

In line with our conversation when I was last in Bakersfield, I am sending you a copy of the loose leaf manual insect pest control, which is prepared primarily by county agricultural commissioners, inspectors, and field men of this Department. Your name will be put on the mailing list to receive additional copies as they are issued. Money for approximately 1,000 copies of sixteen pages per year of this loose leaf manual is allowed us.

More of these sheets, particularly those dealing with red spider mites, need to be revised, and as I told you, I have been hoping the University would, very shortly, issue their bulletin on the effect of various insectide material on flavor, taste, or odor for fruit and vegetable crops. I think it only just that the men who do the work should be allowed to publish the first information on this matter, but at the same time, I must express hope that the University gets this valuable information out in printed form very shortly.

You, Charlie Grimm, or Seldon Morley, referred me to an article in the September 15th issue of "Fortnight", which contains an article by Dr. Granville Knight, regarding seriousness of DDT, starting on page 28. This is followed immediately by another article of Clement Reicher's, which

takes a decidedly different view. If it wasn't you who informed me of this, and you have not already read the two articles, I think you would be interested in them.

Sincerely yours,

Stewart

Stewart Lockwood
Economic Entomologist
BUREAU OF ENTOMOLOGY

SL:ic

Enc.

If you wish I'll put your name on the mailing list to get other pest control sheets as they are printed.

Stewart

Harold Bowman

H. M. Armitage

Stewart Lockwood

Sacramento

September 17, 1954

LEAF ROLLER, Platynota stultana, IN COTTON

Following a report from the Agricultural Commissioner of Imperial County, relative to an outbreak of this pest, inspections of cotton fields were made with him.

INSPECTION

These inspections covered a larger part of the cotton growing area in Imperial County. Considerable leaf rolling and damage to forms and squares was present in some fields, much less in many others. In some instances, growers were quite apprehensive of the situation.

First inspections carried on during the week ending August 21st, showed that in the northern part of the cotton area of that County, the pests seemed to have reached a peak and were receding in numbers: (a) feeding scars were more prevalent than the number of worms would account for and (b) all worms found were fully grown. Further south, however, to the Mexican border, an increasing amount of damage to the crops could be seen. Adults, eggs, and very young larvae, far outnumbered the fully grown worms.

DAMAGE

During this first inspection, damage seemed to be greater in the southern part of the County where most of the larvae were very young. Many of the leaves were rolled and damaged. Stems of young forms and scars were eaten into. The amount of new growth on the ground was more than normal shedding. Flowers in some instances were webbed and rosetted, somewhat similar to the rosetting caused by the larvae of the pink bollworm.

Older bolls were found chaffed or russeted by the worms. In some instances, the larvae had bored directly into the boll. Some boll rot was found in many of the damaged bolls. As a rule, however, over the entire County, the damage from this pest was more spectacular than actual. But in a few fields actual loss ran to 10 percent of the bolls being dropped or eaten into. Damage could easily continue, particularly in fields where young worms made up the population.

During the forepart of September, a second inspection over the same area was carried out, and it was readily seen that the infestation was much less than it had been in August. In only one field were the young worms present in such numbers as to cause continuing damage to any measurable degree.

Earliest picking had been started and it was learned that the damage would not continue to any marked degree. Boll rot which gave consider-

able indication in August of causing damage, had apparently not developed.

LIFE HISTORY

From 40 to 45 days is probably sufficient to complete a generation of this insect in this area. It would seem likely that there could be 4, possibly 5, broods during the life of a cotton plant. From observations, it would seem that the adults rest out in the sun on the upper surface of the leaves, more than the other members of this family do. Their eggs were deposited as overlapping shingles on the upper surface of the foliage, and were somewhat difficult to see except that a cluster of eggs gave an appearance of shiny green velvet to a small section of the leaf. Larvae, on hatching were found, more often than not, in the young succulent growth of the terminals.

PREVIOUS ACTIVITY

This leaf roller has been known for a number of years as a pest of erratic numbers in green houses on carnations and other plants, in rose plantings and other ornamentals, and has been considered of much less importance to citrus growers than other "orange worms". One year it was responsible for damage to strawberry plantings in Southern California. In scanning the literature on this pest, it would seem that such damage that it is responsible for, is seldom of much importance the second year.

The infested area in Imperial and Riverside counties, as well as the cotton areas in Arizona and Lower California, which also are infested, more or less, likewise in the lower Sonoran area, produce what is known to the cotton trade as dessert cotton.

This year Imperial County has approximately 65,000 acres in cotton,
Riverside County 24,000
Arizona 403,000
Nevada 1,900

In addition, there is in this lower Sonoran area, smaller acreages of cotton in San Bernardino, San Diego and Los Angeles counties.

Should this pest develop, it could amount to quite a financial problem.

COOPERATION

Information from men of the United States Department of Agriculture, and the University of California, was requested and in each instance, given freely. The entomologists of the Riverside Experiment Station, and Farm Advisor of the Imperial County, gave their findings to the County Agricultural Commissioner and myself as fast as they developed.

There is, attached to this report, some observations which were taken from fields which were considered typical of various cotton growing areas in the Imperial Valley.

Stewart Lockwood

SL:ic
Enc.

COTTON LEAFROLLER OBSERVATIONS IN IMPERIAL COUNTY - 1954

#1 - Snyder and Sperba at Holtville, Township Canal Gate #27-28 320 acres - August 20. Upper sides of leaves had several live moths resting in the sun. Very young, fully grown larvae and pupae found on leaves in webs and at base of buds -- some bud chaffing and rot.

BHC was used between August 20 and the second inspection September 3. Inspector Osborn could not find many worms just previous to the application of "2 lbs. actual gamma BHC plus 10 percent DDT at 30 lbs per acre."

Fewer worms were found September 3 - 16 live worms, 3 dead worms and one egg cluster on 30 plants. One mature larva was found inside a boll.

There was more than a normal drop of fruit. Established bolls per plant were 6 - 4 - 6 - 8 - 8 - 8 - 8 - 9 - 9. These counts were made at random over a number of rows.

#2 - Charles Graham, NE of Brawley, Standard Canal Gate #12. Treated August 6-7
6 oz. Parathion on August 19. There were fewer live larvae than past damage would indicate had been present.

#3 - Geo. Casey, NE of Brawley, Narcissus Canal Gate #11. Worms common mostly grown, few adults. Worms common, but not sufficient to account for damage. Some sick worms found.

BHC was applied after the first examination and September 3, on that date examination of over 50 plants showed no live worms, one dead worm and one live pupa. Rot was present on 5 bolls.

Established bolls were 14 - 13 - 10 - 9 - 14 - 13 - 10 - 13 - 10 - 10 on 10 plants chosen at random over the field.

#4 - Bill Dearborn, Withers Ranch, "D" Laterial on Weist Road Calipatria area, 500 acres.

Block treated with Parathion 6 oz - August 11th. Some live large worms found - August 20. No adults. Very heavy previous damage on foliage and buds.

On September 3 inspection of this block showed one live worm and two dead. Two bolls in 50 plants had rot. The field was very dry. Established bolls were 8 - 9 - 5 - 7 - 8 - 9 - 11 - 8 - 14 - 9.

Block treated with TEPP - 1 pint per acre -- August 11ths. Some live worms, but more damage than present worm population would indicate on August 20. On September 3 one live worm was found on 50 plants. Established bolls per plant at that time were: 7 - 8 - 13 - 12 - 8 - 20 - 5 - 15 - 9 - 18.

Block treated with DDT and Toxaphene
5% DDT - 15% Toxaphene - 40% sulphur
Some live worms, but not as many as in Parathion or TEPP blocks. Damage not so extensive either - on August 21.

September 3 there was no more than a nominal shed of fruit. Considerable leaf perforation was observed but very few insects found. In 50 plants two live and two dead worms were found. One boll was rotten. Established bolls per plant were 10 - 11 - 11 - 16 - 10 - 11 - 0 - 9 - 9 - 10.

Untreated block
Very few worms or damage. This part of the field is not comparable to other blocks treated.
In all these fields or blocks as at Brawley, the worm population was made of almost mature, no very young were found and except on the untreated field the damage exceeded the amount that could have been done by the present population.
Later information is to the effect that the entire acreage had been treated with DDT and Toxaphene earlier.
$13.50 per acre for DDT and Toxaphene.

On September 3, one live worm was found on 50 plants. One boll was rotten. There was a normal shed. Established bolls per plant were 15 - 18 - 14 - 13 - 15 - 8 - 9 - 8 - 10 - 9.

#5 - Sperber - Holtville. Heavy damage in the field. University is experimenting. All stages, unhatched eggs, young, and fully grown and pupae are present.

This field was not checked September 3, since it was being used by the University for their observation on the value of a number of insecticides on a number of blocks.

August 12
#6 - Swink Ranch, near Brawley, 10 acres. Very clean, but will have some damaged bolls.

This field was treated with BHC August 12. On September 3 no live or dead worms were found. Very little additional damage had occurred on 50 plants. Established bolls were: 9 - 11 - 6 - 4 - 11 - 12 - 7 - 9 - 11 - 9 - 12 per plant.

This field was treated August 12 with 2 percent BHC, 10 per cent DDT and 40 percent sulphur at 25-30 lbs. per acre. There had been a heavy rain, the soil was still muddy but the odor of BHC was still present on the plants and soil.

There was no numerically measurable damage to the bolls on the plants but there had been considerable shed squares, possibly due to a storm.

No live or dead worms were found. Set of established bolls per plant were: 9 - 11 - 6 - 4 - 11 - 12 - 7 - 9 -11 - 9 - 12.

#7 - Swink, Speech Ranch near Brawley.
7 of 100 bolls had been nibbled.
5 live pupae.
2 live worms, fully grown.
2 bolls had rot.

Treatments. 5-11-54 -- 10% DDT; 50% sulphur; 25 lbs. per acre.
5/21/54 -- 10% DDT; 75% sulphur; 25 lbs. per acre.
6-20/54 -- 10% DDT; 50% sulph r; 25 lbs. per acre.
7/21/54 -- 20% toxaphene; 40% sulphur; 25 lbs. per acre.
8/10/54 -- 15% toxaphene; 5% DDT; 40% sulphur; 25 lbs. per acre.
8/18/54 -- 2% BHC; 50% sulphur

On September 4 there was very little evidence of worm activity. The bottom crop was open, ready for picking. Plants ranged from pocket to waist high. Set of established bolls per plant; 6 - 17 - 13 - 13 - 20 - 8 - 14 - 14 - 4 - 11.

#8 - Jackson ranch north of Brawley
Very few worms and little worm damage.

Treatments. 4/21/54 -- 10% DDT; 50% sulphur; 25 lbs. per acre.
6/16/54 -- 10% DDT; 75% sulphur; 25 lbs. per acre.
7/ ? -- 2% BHC; 10% DDT; 50% sulphur; 25 lbs per acre
8/11/54 -- 15% toxaphene, 5% DDT: 40% sulphur; 25 lbs per acre.

On September 4 the field was very wet. It could not be thoroughly checked but on the row ends and along the borders a new hatch of very young worms was found. Eight of 20 bolls held very small worms at the base between the boll and blossom sepals. No worms were found on young forms nor in squares.

#9 - Swink, Finley Ranch - August 20
5 of 100 bolls had been nibbled
2 live pupae.
1 live worm

On September 4 a new hatch was in progress; 3 in 10 bolls had newly hatched worms under or at the edge of bracts under the sepals.

#10- Gieselman Ranch North of Brawley. On August 12. eight live worms were found in 50 bolls. Some were very young. The field had received the following treatments:

4/18/54 -- 10% DDT; 50% sulphur; 25 lbs. per acre.
6/7/54 -- 10% DDT; 75% sulphur; 25 lbs. per acre.
6/26/54 -- 10% DDT 75% sulphur; 25 lbs. per acre.
7/6/54 -- 10% DDT; 50% sulphur; 25 lbs. per acre.
8/10/54 -- 15% toxaphene; 5% sulphur; 40% sulphur; 25 lbs. per acre.

On September 4 no live worms and one dead worm was found.
Five bolls were rotten on 50 plants.
Set of established bolls were 25 - 12 - 16 - 6 - 22 - 18 - 19 - 11 - 8 - 12.

Stewart Lockwood

Stewart Lockwood

SL:ic

APPENDAGE

Outbreak of the leaf roller Platynota stultana, triggered off a regrettable reaction among a few people in the area. This seemed to be out of proportion to the amount of damage caused by this pest. In conversations with some whom I have known for many years and after listening to others discuss this matter, it seems that in July a dust application of benzene hexachloride was made and shortly after that near the treated field, bees were killed. The inspector felt that the drifting benzene hexachloride had caused this loss.

Previously there had been an understanding that benzene hexachloride would not be applied by any one when drifts could reach alfalfa in bloom, or other crops which might become contaminated. After the bees had died, however, the use of benzene hexachloride was further restricted for a time. A number of growers felt that they would not be allowed to use it under any circumstances.

It seemed apparent too, that there was a considerable warehouse stock of this dust in the Imperial Valley and storage charges would amount to considerable unless it was sold.

With the advent of this worm, some growers believed that benzene hexachloride was the one thing that should be used, and that the Agricultural Commissioner was acting in an arbitrary manner. Later, however, after the facts were better known, this feeling subsided. I personally observed BHC dust being applied but only after inspections had been made of the property intended to be dusted, at which time it was determined that other farmers would not lose from any probable drift. While this situation seems to have calmed down, the knowledge is inescapable that some individuals anxious to sell or to use benzene hexachloride may need further watching.

Stewart Lockwood

Stewart Lockwood

SL:ic

1959

Madera, Calif.,
Febr. 12, 1959.

Dear Larry:

At last I have that Angular Leaf Spot report ready for mailing to you. I have prepared a duplicate for John Dixon, including a map, and will take it into him tomorrow.

The maps show only a few of the actual fields inpected but do show the location of all the fields that were found to have Angular Leaf Spot in 1958. I have other numerous notes and detail maps of location on farms and sections, but I can't see any useful purpose they might serve in the way of records.

No doubt I will see you Tuesday at Shafter and we can talk about them and any plans you have for this year. Having sold most of my ranch I will have considerable time to do off-ranch work this year. Any surveys of Angular Leaf Spot, Pink boll worm, or other cotton problems I am qualified to do, I would be glad to under take for the distributors.

Good rains the past several days have done a world of good for this part of the valley.

Sincerely yours,

R. D. Martin

Cotton Angular Leaf Spot Survey in Fresno County for 1958

by R. D. Martin

Angular Leaf Spot was found on cotton plants in fields belonging to the following list of growers. These fields were all sprinkle irrigated.

Jacoby Ranch	Caruthers	Sec.	34	T 16S	R 19E
G. Marshall	"		21	15	19
Ed. Jones	"		16	16	19
Correia & Quandt	"		3	17	19
Aramada Farms	"		33	16	19
Hughes Ranch	"		19	15	19
Raymond Thomas Ranch	Five Points		32	18	17
" " "	"		6	19	17
Five Points Farming Co.	"		20	19	16
" " "	"		28	19	16
" " "	"		9	15	15
" " "	"		10	15	15
" " "	"		15	15	15
Verras Farms	Coalinga		22	20	15
J. C. Conn	"		11	21	15
W. Weeth	"		5	21	16
"	"		16	21	16
"	"		15	21	16
Harold Weeth	"		14	21	16
Starkey & Irwin	"		27	21	16
" "	"		35	21	16
" "	"		1	22	16
" "	"		2	22	16
Summer Peck	Mendota		1	16	14
Sherman Thomas	"		2	16	14
" "	"		35	15	14
" "	"		3	16	14
" "	"		4	16	14
" "	"		5	16	14
Airway Farms	Huron		2	21	17
" "	"		11	21	17
" "	"		12	21	17
" "	"		14	21	17

Summary

The 1958 season survey shows a large increase in the number of infected fields found.

None was found in the same fields as in 1957.

Practically all fields found infected in 1958 were not planted to cotton in 1957.

Confidential notes for Larry on the Angular Leaf Spot survey in Fresno county for 1958.

Afact in considering the numerous and wide distribution of ALS infection in 1958 is that every infection found was on land not known to have had it before. And in practically every case was not even planted to cotton in 1957. (This does not apply to Airways, Neason and Webster farms near Huron and Murray where the disease has been reported since 1951)

A check was made of every field of cotton that I reported having ALS in 1957. In only two known instances was cotton planted back on the same ground. One was the Linneman ranch 10 miles west of Firebaugh and the other was the R. Giffen ranch on Hiway 33 (Sec. 19 - T17S - R14E). Numerous trips were made to these fields during Aug. and Sept. but we were never able to find any ALS altho both fields had widely distributed infections in 1957.(Giffen used Thimet and Dithane on seed and Linneman, Cerasan)

I inspected many sections (I think nearly every one) of Giffen cotton and never found a single infected spot. In a few cases infected cotton was just across the road. I had lunch one day with R. Giffen, Jack Wolfe and Jim Lowe and they said all their cotton seed for 1958 was Thimet and Dithane treated and they used a 8 - 24 - 0 fertilizer. (This did not include Sumner Peck)

Went with Primo to Verra's cotton about 3/4 mile N of Allen headquarters. Found ALS about 50 feet from corner. Two other places in a few minutes. This field planted to Producer's seed. Not is cotton previous year. Went to two more Verra's fields planted to cotton in 1957 but no ALS found.

Looked at John Conn's field on Sec. 11. Found ALS in big well-grown cotton shoulder high. Ranch foreman had looked for it as he had seen it at Starkey and Irwins, but had not found it. After seeing the spot we found he found two more spots on way to the car. AC seed.

Waldo Weeth. In 1957 a very thoro inspection was made of three fields of his cotton and none found. I was careful in going over his fields because WW was questioning the necessity of the ginning regulations. And I thought if given enough time I might find some ALS. But none was found. On August 27, 1958 I stopped by the WW office to get permission for inspection and talked to Waldo. He drew a map and wanted to know if I found any and report back. I found plenty of ALS in the first field I looked so went back to the office and Waldo came back with me. We looked at several more spots in the same field and easily found ALS. This field was in sprinkled cotton last year and where I couldn't find any ALS. In the adjacent section and only across the road cotton was planted for the first time in

five years (being two years in alfalfa seed, then barley and then cotton). We readily found ALS in this field at several different locations and in big, rank cotton - 6 feet high. It is particular puzzling how both of these fields should have so much disease.

Harold Weeth's field is about a mile east of Waldo's Inspection of this field showed ALS within five minutes. Rotation unknown. Harold gone. Apparently Harold talked to Waldo because the sprinklers were stopped the same day the ALS was found and furrow irrigation started. Both Weeth farms were planted to AC seed.

Starkey and Irwin ranch. Going south of Coalinga on Hiway 33 about six miles, the first of their cotton was inspected. ALS found within a few minutes so I went to the office. Talked to the foreman and found lots of ALS just south of office. The foreman said that they found bolls with rotten spots on them about ten days ago and had called a chemical company. They examined the fields and recommended a dusting for control. All fields but one were dusted with a material costing $8.00 per acre. I met the chenicak field man - John ? from Ortho and was told that when he examined the fields he radio-phoned his office and they recommended treatment. Inspected cotton on six sections and found severe infections in all fields. A great deal of leaf damage had been done and much defoilation There is no doubt that the yield of cotton on this ranch has been reduced by ALS. Starkey was away.

Neason Ranch. At the request of Bill Chislhom (AC gin manager at Huron)I inspected the Neason cotton in Kings Co for ALS. This ranch was badly infected in 1957 and had a loss in yield due to the effects of the disease. The cotton in 1958 was planted on a field that was in cantaloupes in 1957. This inspection on about July 15 showed no sign of ALS in the four parts of the field examined. The foreman (named Marshall) ask me to come back in a couple of weeks. About August 1st I re-inspected this field and found about twenty five spots of infection in a 10 acre area. I found Marshall and told him of the infection starting. He said(" Today is the last day we will use sprinklers)". On August 27th John Turner, Cleary, Nourse and I inspected this same 10 ac. area. Turner and I think that there was little spread of the disease after the sprinklers were turned off and row irrigating started. This is now a very well-grown field and may make 3 bales per acre.

Five Points Farming Co. In 1957 this ranch had a bad and widely distributed ALS infection in Sec. 32. This land is now (1958) part fallow and part alfalfa seed. In 1958, directly across the road east, are two fields of cotton belonging to the same company, sprinkle irrigated (the whole ranch of some 20 sections is). A careful examination of these fields on August 27th by Turner, Cleary, Nourse and myself produced no evidence of ALS. BUT, ten miles away ALS was found on two sections

belonging to this ranch on land never before planted to cotton and having only grown one crop of barley since development from desert (up near the Coalinga foothills). These cotton fields are two or more miles from Sandell's rwo irrigated cotton and probably five miles to the nearest sprinkler cotton. It is said that on the south side of one of these fields considerable damage is being done by the disease. Had lunch with Charlie at 5 Points and Walt Farrell came in and over to our table. He told us all of his cotton is infected to some degree but is not hurt much.as he turned the sprinklers off early.

THE FRESNO COUNTY DEPARTMENT OF AGRICULTURE

JOHN WARDLE DIXON
Commissioner

P. O. BOX 801
1730 SOUTH MAPLE AVENUE
FRESNO, CALIFORNIA

PHONE AD 3-2181

June 17, 1959

L. B. Nourse, Manager
California Planting Cotton Seed Distributors,
2201 F Street,
Bakersfield, California

Dear Larry:

In answer to your letter of June 16th, it will be entirely satisfactory with us for Bob Martin to work through this office.

Very truly yours,

John Wardle Dixon

JOHN WARDLE DIXON
Agricultural Commissioner

JWD/lw

June 16, 1959

COPY

Mr. John Dixon
Argicultural Commissioner, Fresno County
1730 South Maple
Fresno, California

Dear John:

Time is approaching for work in Angular Leaf Plant surveys. To me this is a critical year due to the increase in sprinklers on cotton. We may have to decide whether or not we will just have to live with it due to the fact that it is becoming more difficult each year to keep gins exclusively for planting seed.

If you have no objection, we would like to have Bob Martin work through your office. As in the past we take care of all expense.

Bob will call on you in the next few days and I hope the same arrangements can be made.

Yours,

L. B. Nourse, Manager

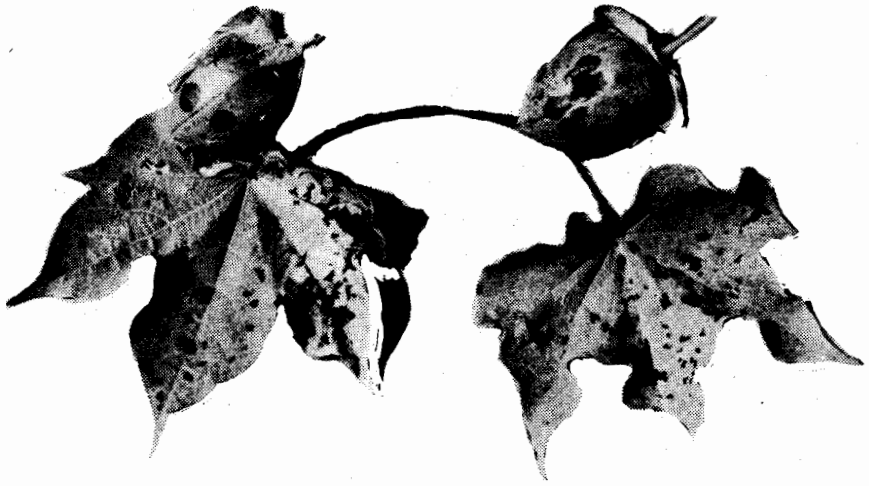
LBN/vl

1956-57

BACTERIAL BLIGHT OF COTTON IN CALIFORNIA

By Marvin Hoover, Extension Cotton Specialist, and Dennis H. Hall, Extension Plant Pathologist.

University of California • Agricultural Extension Service



Leaf and boll injury caused by the bacteria. Symptoms on leaves appear as small, dark-green, water-soaked spots. Infected bolls have small, rounded, dark-green, water-soaked areas. (Photo courtesy of Leo Dollar, *Fresno Bee.*)

Bacterial blight is the only known bacterial disease of cotton which is economically important. The disease is incited by the bacterium *Xanthomonas malvacearum* which gains entry into the plant through natural openings or wounds and attacks the leaves, bolls and stems. It is found throughout the cotton-producing areas of the world. In the United States, it is reported to be most severe in the south-central and south-western portions of the cotton-producing states. The disease was first found in California in 1951 in Fresno County. It has since been found in Kern, Kings, Tulare and Madera counties in the San Joaquin Valley. It is interesting to note that the disease has so far been found only in those fields where irrigation was by sprinkling.

SYMPTOMS

The symptoms of the disease are most noticeable on the leaves. They appear first as small, dark-green, water-soaked areas on the underside that enlarge to form the typical angular spots visible on both the upper and lower surfaces. The early lesions appear translucent when held to the light. The angular outline of the lesions is the result of the infection site being limited by the small veins of the leaf. It is from these typical angular lesions that this phase of the disease gets the name "angular leaf spot." As the lesions, become older, bacterial slime may exude from the tissue that dries to form a shiny film on the surface of the lesion. As the lesions get older, they dry out, become sunken, and turn a reddish-brown color. The affected areas may unite early to form larger spots that may fall away leaving ragged holes in the leaves. Severe leaf infection may cause the leaves to turn yellow and fall off.

The bacteria will attack the boll in any stage of development. The infected area appears first as small dark-green water-soaked areas. They are usually slightly raised and round in outline in contrast to the angular lesions on the leaf. The boll lesions gradually enlarge, turn black, and become sunken as the tissue dies. Infected bolls may be injured to the extent that they fail to open. If the boll does open, the lint in the infected portion is discolored and of low quality.

Stalks and leaf stems are also attacked by the bacterium. Black elongate lesions form on the outer bark – sometimes causing girdling and death of the stem. This phase of the disease is known as "black arm."

In the seedling stage, the first evidence of the disease is seen on the cotyledons as small, round spots. These lesions enlarge and the bacteria may move into the stem. Continued movement into the terminal region may result in the death of the young plant. This is a good time for the growers to check their fields for the disease. If it is found at this early date, a change from sprinkler irrigation to row irrigation, if possible, would help prevent its spread.

DISEASE CYCLE

The bacterial blight organism survives from one growing season to the next in the fuzz on the seeds and, to a certain extent, within the seed coat. This is an important source of primary inoculum. Dried, undecomposed parts of infected plants also provide a very important means of overwintering. The bacteria may remain viable in dried plant parts for several years and still be capable of causing disease. If debris from infected plants is turned under the soil and allowed to decompose, the bacteria will die. There is no evidence that the blight organism can survive in the soil unless it is in undecayed cotton plant parts. Volunteer plants from seed left in the field from the previous infected crop may also be a source of primary inoculum.

The bacteria are spread within the field principally by splashing or windblown rain. Under California conditions this occurs only in sprinkler-irrigated fields. The water drops onto infected tissue and splashes the bacteria to adjacent noninfected plants or healthy leaves on the same plant. With each succeeding sprinkler irrigation, bacteria from infections spread still further from the inital infection sites. Observations indicate that the movement of sprinkler irrigation equipment in an infected field also helps spread the disease. It is suspected that cultivating equipment and other machines operating in an infected field may spread the bacteria if "free moisture" is present, or if mechanical injury causing abrasions to the stems and leaves occurs.

An abundance of free moisture on the plant foliage and and relatively high temperatures are the conditions most favorable for bacterial blight to occur. In California where rainfall is lacking for most of the growing season, conditions that favor the disease are found only in the fields where sprinkler irrigation is used.

CONTROL

Bacterial blight does not occur in furrow-irrigated fields in California. Obviously, the use of this method of irrigation is the best means of avoiding the disease. Where sprinkler irrigation is used or is necessary, the use of disease-free seed and crop rotation are the best methods known for controlling bacterial blight. Since contaminated seed may be a source of primary inoculum, seed should be saved from fields free of the disease. It is the policy of pure seed organization (The California Planting Cotton Seed Distributors) that seed is not saved from sprinkler-irrigated fields nor seed from gins after cotton from sprinkler-irrigated fields is received for processing. It has been shown that delinting seed with sulphuric acid will eliminate the blight organism from the seed surface. Therefore, it is advisable that growers planning to use sprinkler irrigation should use acid-delinted seed and, in addition, treat the seed with one of the recommended organic mercury compounds. Where growers have followed this practice, but whose neighbors who are also irrigating with sprinklers have not, the clean field may contract extensive and uniform infection from the adjacent field sown with untreated seed.

There is no evidence to show that the blight organism can survive in the soil except in undecomposed plant parts. Therefore, complete turning under of plant debris from the previous cotton crop followed by irrigation to promote decomposition will help eliminate this source of inoculum. Decomposition of plant material under the soil will occur throughout the winter in California due to the relatively mild temperatures. Rotation with other crops for a minimum of one year is advisable to further reduce the inoculum that might be in the plant debris.

Volunteer seedlings should be destroyed before planting since they may be a source of inoculum if the disease was present in the previous cotton crop.

The suggestions given above for controlling bacterial blight – use of disease-free seed, plowing under contaminated debris, destruction of volunteer plants and crop rotation – must be considered one control. The use of disease-free seed alone or crop rotation alone is no assurance that the disease will not appear if the other factors mentioned are not practiced. The grower who uses sprinkler irrigation must utilize all of the suggestions if the control is to be effective.

Co-operative Extension work in Agriculture and Home Economics, College of Agriculture,
University of California, and United States Department of Agriculture co-operating.
Distributed in furtherance of the Acts of Congress of May 8, and June 30, 1914.
George B. Alcorn, Director, California Agricultural Extension Service.

PRINTED BY COURTESY OF CALIFORNIA PLANTING COTTON SEED DISTRIBUTORS

Copy made & sent to
Chas. Chary
10/22/56
Pat

ANGULAR LEAF SPOT REPORT

1956

ANGULAR LEAF SPOT REPORT FOR 1956

GROWER'S NAME	AMOUNT OF INFESTATION	GIN RECEIVING COTTON
Adams, J. L.	None (now in hay)	Caruthers Gin
Barbour, Joe	None	Caruthers Gin
Cox, Dave	None (now in hay)	
Cox, J. P. (Chuck Marshall Farms this land in 1956)	None	Caruthers Gin
Derfelt, L. A. (This was Elmore Peterson's place in 1953)	None	McCall & Conejo
Hughes Brothers	None (now in hay)	
Johnson, Peter Elmer	None	McCall & Conejo
Jones, James	Some	Raisin City
Klepper, Clayton and Bee	Some	Caruthers
Lee, W. A.	None (now in pasture)	
Mills, Joe D.	?	Raisin City
Moore, Charles	None (now in hay)	
Nystrem Farms (The T. O. Sorrell Place of 1953)	None	Caruthers
Pike, Tom	None (now in hay)	
Pimentel, Freddie	None	Clayton-Anderson at Conejo
Shelton, Lester	Considerable Angular Leaf Spot	Raisin City
Saylor, M. M.	None (now in hay)	
Steele, Richard (West side of Blythe, 3rd house north of Conejo)	Considerable Angular Leaf Spot	Raisin City
Watson, O. C.	None (now in hay)	
Whitford, S. W. (Cor. Westlawn & Mt. View)	None (now in hay	

Angular Leaf Spot Report for 1956 (con't)

Whitford, N. W. (Cor. Manning & Marks)	Heavy concentration of Angular Leaf Spot	Midway on Brawley bet. Central & American
Wise, C. F.	None	
Wood, D. B.	Heavy concentration of Angular Leaf Spot	Raisin City

Some growers think conditions during 1956 have been worse than usual as far as Angular Leaf Spot is concerned. Mr. Whitford at Marks and Manning says it is as bad as ever even after two years without cotton.

Telephone Call from Geldon Morley, August 29, 1956

T. R. Carpenter, Field Inspector, State Dept. of Agriculture, Bureau of Plant Pathology - Chief of Dept. - Gilbert Stout.

On August 23, 1956, Carpenter inspected the J. Patterson Ranch 2 miles east of Highway 99 on north side of David Road and a ranch of unknown ownership 1/2 mile north of Valpredo Road on the east side of Rancho Road. On both of these places, positive presence of Angular Leaf Spot was found.

On the J. Bidart Ranch 1/2 mile east of Highway 99 on the north side of David Road conditions similiar to - but not characteristic of - Angular Leaf Spot were found. Leaf samples from this field were taken and have been sent to Sacramento for test. The results are not yet available.

Mr. Morley requests we call Jim Stockton if more information is desired.

Jack

DOMESTIC SERVICE

Check the class of service desired; otherwise this message will be sent as a full rate telegram

FULL RATE TELEGRAM		SERIAL	
DAY LETTER		NIGHT LETTER	

WESTERN UNION

1206

JOSEPH L. EGAN, PRESIDENT

INTERNATIONAL SERVICE

Check the class of service desired; otherwise this message will be sent at the full rate

FULL RATE		DEFERRED	
CODE		NIGHT LETTER	

NO. WDS.-CL. OF SVC.	PD. OR COLL.	CASH NO.	CHARGE TO THE ACCOUNT OF	TIME FILED

Send the following message, subject to the terms on back hereof, which are hereby agreed to

September 17, 1956

C. Seldon Morley
Agricultural Commissioner, 2610 M. Street, Bakersfield, California

Cotton specimen from Glen Moody ranch near Wheeler Ridge diagnosis is ANGULAR LEAF SPOT confirmed by microscopic examination.

T. C. Fuller
Bureau of Plant Pathology

October 22, 1956

Mr. T. C. Fuller
Bureau of Plant Pathology
State of California
Sacramento 14, California

Dear Mr. Fuller:

We received your report on Angular Leaf Spot contained in your telegram to Mr. Seldon Morley on September 17, 1956. We are continuing our voluntary rule of saving no planting seed from gins where sprinklered cotton is processed. We hope that this will be of some help in keeping the planting seed clean.

On behalf of all of the cotton interests in the state, I want to thank you for your cooperation in this survey and hope it can be continued each year.

Yours truly,

L. B. Nourse, Manager

LBN:ps

COPY

October 22, 1956

Mr. E. A. Danison
Agricultural Commissioner
Merced County
740 - 22nd Street
Merced, California

Dear Mr. Danison:

Received your report on Angular Leaf Spot and we are continuing our voluntary rule of saving no planting seed from gins where sprinklered cotton is processed. We hope that this will be some help in keeping the planting seed clean.

On behalf of all of the cotton interests in the state, I want to thank you for your cooperation in this survey and hope it can be continued each year. My offer of some financial assistance in case you need it next year still holds good.

Yours truly,

L. B. Nourse, Manager

LBN:ps

COPY

MERCED COUNTY
DEPARTMENT OF AGRICULTURE

E. A. DANISON
AGRICULTURAL COMMISSIONER
SEALER OF WEIGHTS AND MEASURES

J. P. CLARKSON
ASSISTANT AGRICULTURAL COMMISSIONER

OFFICE: 740 TWENTY-SECOND STREET
TELEPHONE RANDOLPH 2-7411 - EX. 204
MERCED, CALIFORNIA

R. H. MILBOURN
DEPUTY COMMISSIONER

JACK RAHILLY
CHIEF DEPUTY SEALER

Sept. 14, 1956

Mr. L. B. Nourse
Manager
California Planting Cotton Seed Distributors
2201 F Street
Bakersfield, California

Dear Sir:

With regard to Angular Leaf Spot there are no sprinkler irrigated fields in Merced County.

Spot checks and inspections made in the conduct of pest control and for the issuance of permits failed to reveal this disease.

Angular Leaf Spot is not known to occur in Merced County.

Very truly yours,

E. A. Danison
Agricultural Commissioner

EAD:dhl

JOHN WARDLE DIXON
Commissioner

MAILING ADDRESS:
P.O. BOX 601

A CENTURY OF PROGRESS

FRESNO COUNTY CENTENNIAL
1856 1956

FRESNO COUNTY
DEPARTMENT OF AGRICULTURE

1730 SOUTH MAPLE AVENUE
FRESNO, CALIFORNIA

October 22, 1956

Mr. John Wardle Dixon
Agricultural Commissioner
Fresno County
1730 South Maple Avenue
Fresno, California

Dear Mr. Dixon:

Received your report on Angular Leaf Spot and we are continuing our voluntary rule of saving no planting seed from gins where sprinklered cotton is processed. We hope that this will be some help in keeping the planting seed clean.

On behalf of all of the cotton interests in the state, I want to thank you for your cooperation in this survey and hope it can be continued each year. My offer of some financial assistance in case you need it next year still holds good.

Yours truly,

L. B. Nourse, Manager

John Wardle Dixon
JOHN WARDLE DIXON,
Agricultural Commissioner.

LBN:ps

JWD/id
Enclosure

COPY

October 22, 1956

Mr. John Wardle Dixon
Agricultural Commissioner
Fresno County
1730 South Maple Avenue
Fresno, California

Dear Mr. Dixon:

Received your report on Angular Leaf Spot and we are continuing our voluntary rule of saving no planting seed from gins where sprinklered cotton is processed. We hope that this will be some help in keeping the planting seed clean.

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Yours truly,

L. B. Nourse, Manager

LBN:ps

COPY

JOHN WARDLE DIXON
Commissioner

MAILING ADDRESS:
P.O. Box 801

FRESNO COUNTY
DEPARTMENT OF AGRICULTURE
1730 SOUTH MAPLE AVENUE
FRESNO, CALIFORNIA

October 9, 1956

Mr. L. B. Nourse, Manager,
California Planting Cotton Seed Distributors,
2201 "F" Street,
Bakersfield, California.

Dear Mr. Nourse:

I am sending you a copy of the report which was prepared by Inspector John E. Gore on the different places which we find had been sprinkler irrigated and the gins to which the cotton was taken.

To give you some idea, I believe the whole picture is clearing up. If we can control replanting on clean ground with clean seed, I think we can get the best of it.

Very truly yours,

John Wardle Dixon

JOHN WARDLE DIXON,
Agricultural Commissioner.

JWD/id
Enclosure

October 22, 1956

Howard T. McLean
Commissioner of Agriculture
Madera County
221 West 7th Street
Madera, California

Dear Howard:

Received your report on Angular Leaf Spot and we are continuing our voluntary rule of saving no planting seed from gins where sprinklered cotton is processed. We hope that this will be some help in keeping the planting seed clean.

On behalf of all of the cotton interests in the state, I want to thank you for your cooperation in the survey and hope it can be continued each year. My offer of some financial assistance in case you need it next year still holds good.

Yours truly,

L. B. Nourse, Manager

LBN:ps

COPY

HOWARD T. McLEAN
AGRICULTURAL COMMISSIONER
STATE QUARANTINE GUARDIAN

TELEPHONE ORCHARD 4-4641
EXT. 219

Madera County
Department of Agriculture
221 WEST 7TH STREET
Madera, California

September 17, 1956

L. B. Nourse, Manager
California Planting Cotton Seed Distributors
2201 F. Street
Bakersfield, California

Dear Larry:

In a survey of the three sprinkler irrigated cotton plantings in Madera County, no Angular Leaf Spot has been detected.

The following is information you requested:

Grower: (1) Andrew Rogers 33480 Avenue 9
30 acres to be ginned at Producers Gin, Madera

(2) Gus Sawzak 18725 Avenue 17
15 acres - ginning place undecided

(3) Tom Burgess 21466 Avenue 19
6½ acres - to be ginned at Farmers Gin, Madera

Yours truly,

Howard T. McLean

Howard T. Mc Lean
Commissioner of Agriculture

cr

October 22, 1956

Mr. Claude W. Bridges
Deputy Agricultural Commissioner
Kings County
280-11½ Avenue
Hanford, California

Dear Claude:

Received your report on Angular Leaf Spot and we are continuing our voluntary rule of saving no planting seed from gins where sprinklered cotton is processed. We hope that this will be some help in keeping the planting seed clean.

On behalf of all of the cotton interests in the state, I want to thank you for your cooperation in this survey and hope it can be continued each year. My offer of some financial assistance in case you need it next year still holds good.

Yours truly,

L. B. Nourse, Manager

LBN:ps

COPY

September 25, 1956

Claude W. Bridges
Deputy Agricultural Commissioner
280 - 11½ Avenue
Hanford, California

Dear Claude:

Your letter relative to Angular Leaf Spot addressed to Jack Hurt received.

I want to thank you and Lee for your cooperation in making this survey for it is very important to the cotton industry.

We are continuing our voluntary measures of not planting any reproduction seed on sprinklered ground and saving no seed at gins that process sprinklered cotton.

Again thanking you and, if we can be of any service at any time, please do not hesitate to call on us.

Yours truly,

L. B. Nourse, Manager

LBN:ps

COPY

L. O. HAUPT
Commissioner

~~P. O. Box 468~~
280 11½ Ave

OFFICE OF
AGRICULTURAL COMMISSIONER
KINGS COUNTY
HANFORD, CALIFORNIA

24 September 1956

Mr. Jack Hurt
Field Representative
California Planting Cotton
Seed Distributors
2201 F Street
Bakersfield, California

Dear Mr. Hurt,

In regards to your request about Angular Leaf Spot. We have now completed our survey of sprinkled cotton fields and determinations of all specimens, which we submitted to the Bureau of Plant Pathology, have been confirmed by them.

Angular leaf spot was found to be present in two fields only. One was a 217 acre field showing approximately 2% infection and the other an 80 acre field with a somewhat higher percentage of infection, probably as much as 6 or 8 percent.

In both fields the infected areas appeared to be confined to the lower ground where water would stand for a short time after irrigation.

If we can be of further assistance to you, please do not hesitate to call upon us.

Very truly yours,

Claude W. Bridges

Claude W. Bridges
Deputy Agricultural Commissioner

CWB/mlh

P.S. Give my best regards to Mr. Cleary and pass this information on to him. Thank you.

September 5, 1956

Howard T. McLean
Agricultural Commissioner
Madera County
221 West 7th St.
Madera, California

Dear Howard:

Early this season I visited with you regarding the possibility of a spot check by your department to see the status of the Angular Leaf Spot in sprinklered cotton in your county.

At that time it was my understanding that you would carry on such a survey. We offered to assist financially but you did not think that would be necessary.

The reason that the cotton industry is interested is that when the first outbreaks occurred our organization put into effect voluntary measures with our cooperating gins whereby no planting seed would be saved at gins processing sprinklered cotton. This relieved the State Department of the responsibility of putting into effect state regulations. We do not want to keep such rules in effect any longer than necessary as they create quite a problem in ginning pure seed. Neither do we want to relax the rules if Angular Leaf Spot is still a threat.

I would appreciate hearing what results you have had in your county and if nothing has been done our offer of financial assistance still holds if you are short of funds to make a spot check.

Hoping to hear from you as to whether you have found any contaminated sprinklered fields this year, since ginning season is at hand, I am

Yours respectfully,

lbn/mb

L. B. Nourse, Manager

COPY

September 5, 1956

E. A. Danison
Agricultural Commissioner
Merced County
740 - 22nd Street
Merced, Calif.

Dear Mr. Danison:

Early this season I visited with you regarding the possibility of a spot check by your department to see the status of the Angular Leaf Spot in sprinklered cotton in your county.

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Yours respectfully,

lbn/mb

L. B. Nourse, Manager

COPY

September 5, 1956

John Wardle Dixon
Agricultural Commissioner
Fresno County
1730 South Maple Ave.
Fresno, Calif.

Dear John:

Early this season I visited with you regarding the possibility of a spot check by your department to see the status of the Angular Leaf Spot in sprinklered cotton in your county.

At that time it was my understanding that you would carry on such a survey. We offered to assist financially but you did not think that would be necessary.

The reason that the cotton industry is interested is that when the first outbreaks occurred our organization put into effect voluntary measures with our cooperating gins whereby no planting seed would be saved at gins processing sprinklered cotton. This relieved the State Department of the responsibility of putting into effect state regulations. We do not want to keep such rules in effect any longer than necessary as they create quite a problem in ginning pure seed. Neither do we want to relax the rules if Angular Leaf Spot is still a threat.

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Hoping to hear from you as to whether you have found any contaminated sprinklered fields this year, since ginning season is at hand, I am

Yours respectfully,

lbn/mb

L. B. Nourse, Manager

COPY

September 5, 1956

Oscar L. Hemphill
Agricultural Commissioner
Tulare County
P. O. Box 1149
Visalia, Calif.

Dear Oscar:

Early this season I visited with you regarding the possibility of a spot check by your department to see the status of the Angular Leaf Spot in sprinklered cotton in your county.

At that time it was my understanding that you would carry on such a survey. We offered to assist financially but you did not think that would be necessary.

The reason that the cotton industry is interested is that when the first outbreaks occurred our organization put into effect voluntary measures with our cooperating gins whereby no planting seed would be saved at gins processing sprinklered cotton. This relieved the State Department of the responsibility of putting into effect state regulations. We do not want to keep such rules in effect any longer than necessary as they create quite a problem in ginning pure seed. Neither do we want to relax the rules if Angular Leaf Spot is still a threat.

I would appreciate hearing what results you have had in your county and if nothing has been done our offer of financial assistance still holds if you are short of funds to make a spot check.

Hoping to hear from you as to whether you have found any contaminated sprinklered fields this year, since ginning season is at hand, I am

Yours respectfully,

lbn/mb

L. B. Nourse, Manager

COPY

September 5, 1956

Seldon Morley
Agricultural Commissioner
Kern County
2610 "M" Street
Bakersfield, Calif.

Dear Seldon:

Early this season I visited with you regarding the possibility of a spot check by your department to see the status of the Angular Leaf Spot in sprinklered cotton in your county.

At that time it was my understanding that you would carry on such a survey. We offered to assist financially but you did not think that would be necessary.

The reason that the cotton industry is interested is that when the first outbreaks occurred our organization put into effect voluntary measures with our cooperating gins whereby no planting seed would be saved at gins processing sprinklered cotton. This relieved the State Department of the responsibility of putting into effect state regulations. We do not want to keep such rules in effect any longer than necessary as they create quite a problem in ginning pure seed. Neither do we want to relax the rules if Angular Leaf Spot is still a threat.

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Yours respectfully,

lbn/mb

L. B. Nourse, Manager

COPY

September 5, 1956

L. O. Haupt
Agricultural Commissioner
Kings County
221 Lacey Blvd.
Hanford, California

Dear Les:

Early this season I visited with you regarding the possibility of a spot check by your department to see the status of the Angular Leaf Spot in sprinklered cotton in your county.

At that time it was my understanding that you would carry on such a survey. We offered to assist financially but you did not think that would be necessary.

The reason that the cotton industry is interested is that when the first outbreaks occurred our organization put into effect voluntary measures with our cooperating gins whereby no planting seed would be saved at gins processing sprinklered cotton. This relieved the State Department of the responsibility of putting into effect state regulations. We do not want to keep such rules in effect any longer than necessary as they create quite a problem in ginning pure seed. Neither do we want to relax the rules if Angular Leaf Spot is still a threat.

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Hoping to hear from you as to whether you have found any contaminated sprinklered fields this year, since ginning season is at hand, I am

Yours respectfully,

lbn/mb

L. B. Nourse, Manager

COPY

PAUL WILSON - 60 A.C. COTTON
ENOS LANE & HWY #178

L.W. THOMPSON - 63 ACRES
COUNTY LINE RD. AT HIAT AVE
DELANO

W.P. ROMERO = 200 AC.
ON HWY 166 - 1 MI, WEST
OF MARICOPA CUT OFF. NO. SIDE

LOUGHMA - ABOUT 40 AC. AFFECTED
SO. SIDE OF SYCAMORE RD.
NEAR ROCKPILE RD, ARVIN

TOM BOYD - 5 H AC,
JUDITH & SUNSET
ARVIN

BARBER & GOSSIAUX - ABOUT 55 AC,
SEC. 11 T-11 R. 19 W,
Over ON NO NAME RD.

DIVIZICH 6 MI. W. OF ~~Terra Bella~~ DUCOR

Chemical damage on contaminated lot of spray - Similar + 2 4 D damage -

Applied in July.

Lot 4 not later but applied by 500 ft different flying service.

Where plane ran out of material + refilled new lot did not show damage -

9/19/62

Meeting with Pierson of State Dept + Morley Ag Commission

MERCED COUNTY
NO SPRINKLERS

MADERA COUNTY
3 FIELDS - AG COMMR
WILL INSPECT + REPORT

FRESNO COUNTY
USE BOB MARTIN -
PAY BOB DIRECT - HE
WILL WORK UNDER DIXON
AS A DEPUTY -

Call Hayes Tulare
on tags

Mr. Nunes

Glen Moody Ranch has Angular Leaf Spot. Telegram Received by Mr. Morley from Sacramento Lab.

Do you want them to continue with inspection? He thinks you can consider all sprinkled fields as inspected in view of Moody Ranch result, but will continue investigation if you wish. He will send you a copy of telegram received.

9/18/56

Told Morley to let go further.

9/18/56 9:20 A.M.

1958

HISTORY, DISTRIBUTION, RACES, AND DISEASE CYCLE OF XANTHOMONAS MALVACEARUM IN CALIFORNIA[1]

W. C. Schnathorst, P. M. Halisky, and R. D. Martin

Summary

Angular leaf spot of cotton was found in California in 1912 and 1929 but did not become permanently established until 1951. There appear to have been at least four separate introductions of the disease into the State. The disease is confined chiefly to the western part of the San Joaquin Valley in central California and is associated with overhead sprinkler irrigation. Eleven isolates of the causal bacterium, obtained from separate field collections and tested on host differentials, all appear to be Race 1 of Xanthomonas malvacearum. The distribution of the disease suggests that contaminated planting seed is involved in its spread. Other evidence indicates that cotton gins may be sources of contamination of otherwise disease-free planting seed. Acid-delinting of cotton seed proved effective in removing externally seed-borne infestations of X. malvacearum.

Angular leaf spot of cotton incited by Xanthomonas malvacearum (E. F. Sm.) Dow., is world-wide in distribution and usual wherever cotton is grown (7, 17). The most recent world-distribution map of X. malvacearum (8) does not indicate its presence in California, seemingly because of the lack of published records. This paper reports on occurrence of the disease in this State, its history, its distribution, the races present, the disease cycle in California, reasons for its recent increase, and possible measures of control.

HISTORY IN CALIFORNIA

Angular leaf spot in California was first observed in October 1912 by R. L. Piemeisal, at Bard, Imperial County, in southern California[2]. It was not observed again until August 1929, when F. W. Herbert and O. F. Cook found it on seedlings at the U. S. Cotton Field Station, near Shafter, in central California[2]. In both instances the disease was apparently introduced on imported seed. There has been no record of it at the U. S. Cotton Field Station since 1929. In September 1951, however, the disease was found near Caruthers, Fresno County, in central California[2]. Since then the disease has occurred each year in various parts of the San Joaquin Valley of California. Evidence that the pathogen was reintroduced in 1959 was obtained when seed of a variety other than Acala 4-42 was planted in the restricted "one-variety" area of the State. Angular leaf spot developed on the imported variety and spread to adjacent Acala plants. Thus, there appear to have been at least four well-documented instances of introduction of the pathogen into California.

Manifestations of the disease in California are the same as elsewhere. The circular translucent lesions on cotyledons, angular lesions on leaves, systemic infection of leaves, black arm phase on the stems, and boll rot have all been observed (Fig. 1).

DISTRIBUTION OF ANGULAR LEAF SPOT

Cotton disease surveys were conducted in 1951-1959 in the San Joaquin Valley. The most extensive surveys were in 1956-1959. Most of the occurrences recorded in the distribution map (Fig. 2) were observed in 1957-1959. The disease is presently confined to five counties: Fresno, Kern, Kings, Madera, and Tulare. It has not been observed in the southern cotton-growing areas since the original observation in 1912.

In 1951 angular leaf spot recurred in the San Joaquin Valley; since then, it has been concentrated on the western slopes of the valley though it has recently spread to other parts of the valley (Fig. 2). Sixty-six occurrences have been recorded since 1951.

---

[1]Contribution from the Crops Research Division, Agricultural Research Service, United States Department of Agriculture; Department of Plant Pathology, University of California, Davis; and California Planting Cotton Seed Distributors, Bakersfield, California.

[2]Personal correspondence between Drs. G. L. Stout, Bureau of Plant Pathology, California State Department of Agriculture, and J. B. Kendrick, Sr., Department of Plant Pathology, University of California, Davis, October 16, 1951. Records obtained from State Department of Agriculture card-index files.

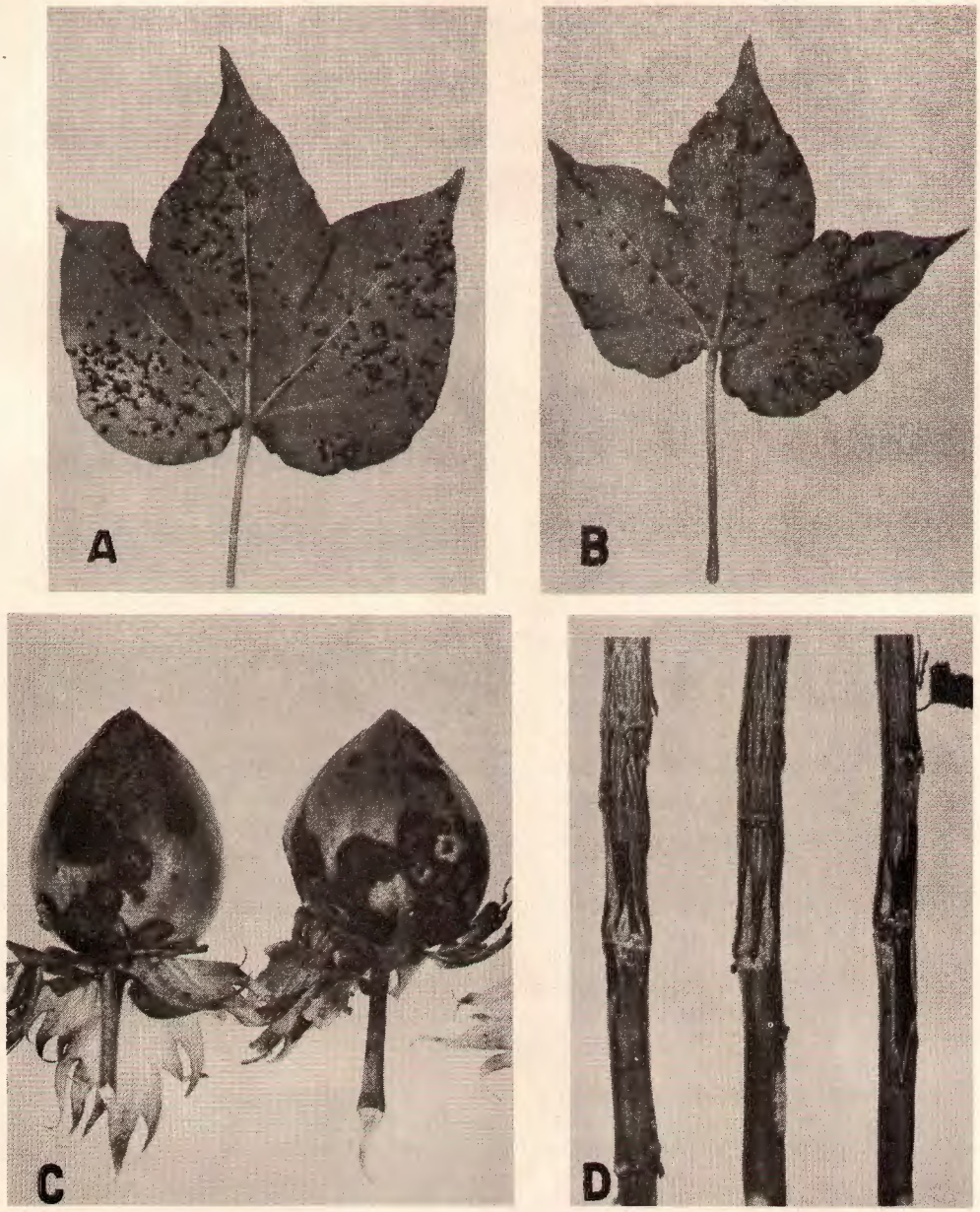

FIGURE 1. Symptoms of bacterial blight on Acala 4-42 cotton in California. A -- angular leaf lesions; B -- systemic leaf infection; C -- lesions on cotton bolls; and D -- lesions on cotton stems known as black arm.

The higher incidence in the western San Joaquin Valley is correlated with widespread use of sprinkler irrigation there. In the eastern portion of the valley most of the fields are furrow-irrigated.

Each occurrence of the disease but one on the map (Fig. 2) is associated with sprinklers. The exception was a furrow-irrigated field flooded by heavy rains when the seedlings were about 2 inches high. In addition, the grower had soaked the seed to hasten germination. The high incidence (32%) strongly suggests that the seed was inoculated during soaking by infested seed in the seed lot.

Sprinkler irrigation for cotton in the San Joaquin Valley is a fairly recent innovation. In the early 1940's sprinklers were introduced into the western portion of the valley. Sprinklers are becoming more common elsewhere in the valley because growers feel that the water use is

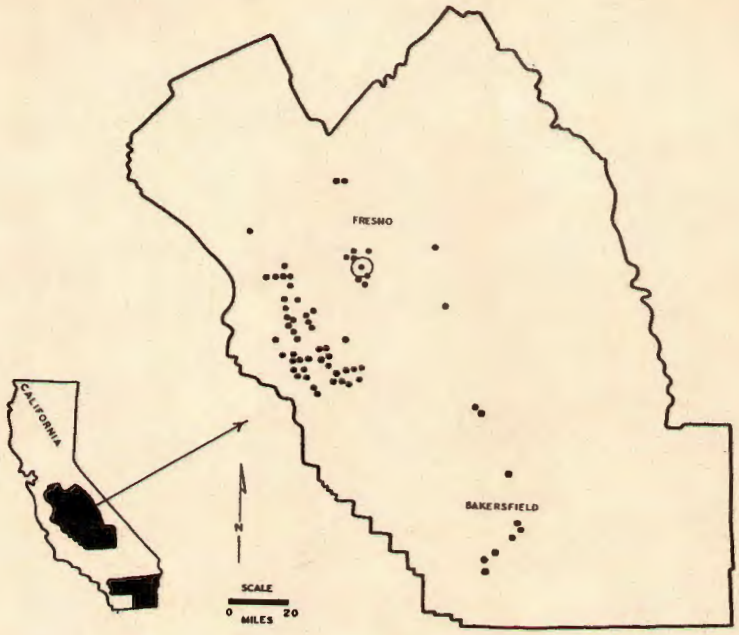

FIGURE 2. Distribution map of angular leaf spot of cotton in California 1951-1959. The blackened areas on the small map represent the cotton-growing regions in California. The enlarged map shows the distribution of the disease in the centrally located San Joaquin Valley. Each dot represents a separate occurrence. The open circle indicates the approximate point of disease origin in 1951.

more efficient and cotton yields are often improved. There is, consequently, a growing concern that the incidence of angular leaf spot may be increased.

RACES OF XANTHOMONAS MALVACEARUM

One of the best methods of controlling angular leaf spot is the growing of resistant varieties. A breeding program, however, requires knowledge of the race or races of the pathogen present. In 1954 Hunter and Blank (11) demonstrated two pathogenic types of X. malvacearum in the United States on the basis of varietal reactions. In 1955 the nomenclature subcommittee designated these two pathogenic types Race 1 and 2 (13). Race 1 is the more prevalent; Race 2 is presently limited to portions of New Mexico and Texas. Studies on races in other parts of the world were reported by Brinkerhoff (3).

Because of evidence of repeated introductions of contaminated cotton seed, it was felt that both races might be present in California. In 1959 infected leaves were collected from nine widely separated fields in western San Joaquin Valley. X. malvacearum was isolated from all collections. Table 1 lists the cotton differential varieties used and their reactions to the two races of the pathogen. Acala 4-42, the predominant California variety, was used as an additional susceptible check. Inoculum was prepared by growing the organism for 3 days on slants of potato-dextrose-peptone agar plus 0.1% $CaCO_3$, flooding the slants with 15 cc of sterile distilled water, and suspending the bacteria by scraping with a sterile glass rod. A sterile DeVilbiss atomizer was used to spray the bacterial suspension onto the leaves. The leaves were sprayed to run off, primarily on the under surface. The inoculations were made between 10:00 and 11:30 a.m., when the stomates in cotton leaves are open (18). Two 7-week-old plants of each differential were separately inoculated with each bacterial isolate. The plants were covered with a polyethylene bag internally atomized heavily with sterile distilled water to produce a high relative humidity. The polyethylene bags were held in place with a rubber band on the rim of each pot. Plants were kept in a greenhouse with an average temperature of 80° F (26° C). Symptoms were evident in 12 days, but the differential reactions were not determined until 21

Table 1. Differential reaction of three cotton varieties to Races 1 and 2 of Xanthomonas malvacearum.

Variety	Race 1[a]	Race 2[a]
Mebane B1	- to +	-
Stoneville 20	-	+++
Texas S-9	++++	+++

[a] - indicates no infection; + indicates susceptibility, increasing with each additional +. Reactions are based in part on the Report of the Nomenclature Subcommittee (13) and correspondence with Dr. John Presley, Plant Industry Station, Beltsville, Maryland.

days had elapsed. Reactions were recorded again 56 days after inoculation.

All nine bacterial collections were Race 1. The isolate that produced the disease in 1951 and one from the 1959 introduction were also identified as Race 1.

DISEASE CYCLE AND CONTROL

Massey (12) showed that X. malvacearum survived on plant remains and infected the succeeding crop. Several workers (4, 9, 10, 15) have shown that the pathogen is seed-borne, and Tennyson (16) demonstrated actual entrance into the seed. The bacterium has been recovered from year-old dried leaves, stems, and bolls of Acala 4-42 cotton stored in this laboratory and from seed taken from infected bolls. Ark (1) isolated the pathogen from dried leaves held in his laboratory for 6 years.

In 1958 the number of cotton fields with angular leaf spot in the San Joaquin Valley increased three- to four-fold. Some of the fields involved had been out of cotton production for several years, one for as long as 12 years. The evidence from one field strongly suggested that the planting seed was contaminated. Since all planting seed used in the San Joaquin Valley is supposedly free of X. malvacearum, an effort was made to determine any sources of contamination.

In California, planting seed is taken only from fields that are furrow-irrigated according to the specifications of the California Planting Cotton Seed Distributors organization. A few fields are contracted for seed in the blight area in western San Joaquin Valley. Some of the cotton gins in this area gin both planting seed and seed from sprinkled fields that may have angular leaf spot. To reduce the chances of contamination of planting seed, a policy was adopted of ginning the planting seed first. Any contamination of planting seed would spread the disease widely, for planting seed of some companies is often bulked before distribution, and planted in fields scattered throughout the entire valley. Contamination would be detected only if the grower used sprinklers, soaked the seed before planting, or encountered heavy rains after seedling emergence.

Attempts were made to demonstrate the presence of the pathogen in gins that handled cotton from blighted fields. Samples of plant refuse and seed were taken primarily from augers of the inclined cleaner, gin stand, and feeder cleaner in several gins[3]. Since some growers use the refuse from the gin piles for fertilizer, samples were also taken from the gin piles.

A method of detection was devised that gives every advantage to the pathogen. Fifty-gram samples of the refuse and seed or refuse alone from the various portions of gins were soaked 18 hours in 500 cc of sterile distilled water. Fifty disease-free, acid-delinted Acala 4-42 seed were placed in containers with each sample. The refuse, seed, and suspensions were placed in large seedling pots in the greenhouse (80° F). Several weeks later, observations for the disease were made.

Angular leaf spot developed when healthy seed was soaked in water suspensions of cotton refuse or refuse and seed from augers in the inclined cleaner, and gin stand (Table 2). The disease did not develop when seed was soaked in suspensions of refuse taken from the gin refuse pile or the auger of the feeder cleaner (Table 2).

Primary infections of cotton in California have been traced to seedlings arising from infested seed. Since there is little rainfall in the San Joaquin Valley, decomposition of plant refuse

[3]The authors are indebted to Marvin Hoover, Extension Cotton Specialist, University of California, for his help in making these collections.

Table 2. Recovery of Xanthomonas malvacearum from refuse taken from various places in cotton gins in central California.

Source of refuse	Number of gins sampled	Number of gins from which pathogen was recovered
Auger inclined cleaner	3	2
Auger gin stand	3	2
Auger feeder cleaner	1	0
Gin refuse pile	1	0

is negligible, and debris probably constitutes an important reservoir of the pathogen. Under California conditions, the pathogen carries-over in virtually 100% of the fields with a history of the disease. Planting contaminated seed appears responsible for the occurrence of the disease in fields far-removed from those with high incidence of the disease, in fields that have been out of cotton production for many years, or on virgin soils. The pathogen is disseminated within a cotton field by sprinklers, and a field with only a few diseased plants can become heavily damaged as the summer progresses.

Use of acid-delinted seed has been recommended as a control measure for many years (2, 4, 5, 6, 14); tests in our laboratory have borne this out. Of 600 seed from severely infected bolls (by California standards), half were acid-delinted in concentrated sulfuric acid for 15 minutes and half were untreated. Both lots were then soaked 18 hours in sterile distilled water to enhance infection and were then planted in sterile soil. No angular leaf spot developed in the acid-delinted lot, whereas 10% of the plants from the untreated seed were infected. The results indicate little or no internal infection of cotton seed under California growing conditions, possibly because the boll-rot phase of the disease is usually not severe. The reason is probably low humidity and lack of rain before and during harvest.

DISCUSSION AND CONCLUSIONS

The major factor contributing to establishment of angular leaf spot of cotton in California appears to be sprinkler irrigation. The distribution pattern of the disease as of 1959 (Fig. 2) strongly suggests that infested seed is involved. Several fields of cotton showing angular leaf spot for the first time in 1958 were planted with seed from a single source. Since the pathogen may remain viable in cotton debris in cotton gins to infest new seed lots ginned in the following season, it is recommended that only gins handling seed from disease-free areas be allowed to process planting seed. Some contamination of planting seed by means of contaminated lint also could occur when the seed is mechanically delinted.

Most of the seed planted in the San Joaquin Valley is mechanically delinted. If irrigation is by sprinkler, planting seed should be acid-delinted and also should be treated with an organic mercury. Deep plowing plus the addition of moisture is recommended to bring about decomposition of infested debris and destruction of the pathogen.

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DEPARTMENT OF PLANT PATHOLOGY, UNIVERSITY OF CALIFORNIA,
DAVIS, CALIFORNIA

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
CROPS RESEARCH DIVISION
ROUTE 1, BOX 17
SHAFTER, CALIFORNIA

OCTOBER 28, 1958

AIRWAY FARMS
602 EQUITABLE BUILDING
FRESNO, CALIFORNIA

ATTN: MR. CARBERRY

DEAR MR. CARBERRY:

THIS IS A NOTE OF THANKS FOR PERMITING US TO CONDUCT A STUDY OF OUR COTTON BREEDING STOCKS ON YOUR HURON FARMS WHERE WE EXPECTED OUTBREAKS OF THE ANGULAR LEAF SPOT DISEASE.

I ESPECIALLY APPRECIATE THE FINE SPIRIT OF COOPERATION SHOWN BY MR. PENNY, YOUR FARM MANAGER, DURING THE SEASON.

ALTHOUGH WE DID NOT MAKE THE PROGRESS HOPED FOR, SOME IMPORTANT INFORMATION WAS GAINED BY HAVING THE COTTON PLOTS ON YOUR FARM. FURTHER EXPERIMENTS WILL BE MADE IN HOPES OF OVERCOMING THE DISEASE IN QUESTION.

SINCERELY,

JOHN H. TURNER
DIRECTOR

LN

CC: R. J. PENNY
J. B. NOURSE, MANAGER, CALIF. PLANTING COTTONSEED DISTRS.

HOWARD T. McLEAN
AGRICULTURAL COMMISSIONER
STATE QUARANTINE GUARDIAN

TELEPHONE ORCHARD 4-4641
EXT. 219

Madera County
Department of Agriculture
221 WEST 7TH STREET
Madera, California

September 8, 1958

L. B. Nourse, Manager
California Planting Cotton Seed Distributors
2201 F Street
Bakersfield, California

Dear Mr. Nourse:

A survey was made in Madera County of the sprinkler irrigated cotton fields on September 4, 1958 and these are the results.

Stephen Erickson 10696 Highway 99	12 acres at Ave. 10½ & Hwy. 99	Farmer's Gin
Bruno Pelanconi 33711 Avenue 9	32 acres	Farmers Gin
Fred Kochergen ½ mile So. Ave. 5	3 acres between Rd. 28 & 29	No information

No Angular Leaf Spot observed.

Sincerely yours,

Howard T. McLean By CR

Howard T. Mc Lean
Agricultural Commissioner

Tulare has not surveyed -

cr

September 10, 1958

COPY

Mr. Howard T. McLean
Agricultural Commissioner
Madera County Department of Agriculture
221 West 7th. Street
Madera, California

Dear Howard:

Received your letter of the 8th. regarding Angular Leaf Spot and your cooperation is appreciated more than I can tell.

The spot is extremely bad this year in the Huron and Westside area. The real damage is south of Huron. In other areas it is widespread, but do not believe the growers are hurt. However, it is a potential threat.

Bob Martin is working here with Morley's men and as yet have found none of it.

Again thanking you and if we can be of service at any time please call on us.

Yours respectfully,

L. B. Nourse, Manager

LBN/vl

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
Crops Research Division
ROUTE 1, BOX 17
SHAFTER, CALIFORNIA

November 6, 1957

Murray Land Co.
Hanford, California
Attn: Robert Sullivan

Dear Mr. Sullivan:

This is just a note of thanks for the use of your land and facilities to speed our efforts for overcoming the angular leaf spot disease.

This Station and its cooperators greatly appreciate the fine cooperation received from your farm people and your fine Farm Advisor, Mr. O. D. McCutcheon.

Many thanks. We will be discussing this problem with you at a later date.

Sincerely yours,

John H. Turner
Director

sm

cc: O. D. McCutcheon
L. B. Nourse
J. T. Den Hartog

November 14, 1957

Mr. John T. Presley, Acting Head
Cotton Disease Section
Cotton & Cordage Fibres Research Branch
U. S. Department of Agriculture
Beltsville, Maryland

Dear John:

Received your letter of the 7th regarding Angular Leaf Spot.

We will continue our voluntary measures and seed treatment, which may help until John can find out more about resistance.

Doubtless we will try to make some kind of a deal with the grower who worked with John this year, even though we may have to pay him something for reduced yield on 2 or 3 acres.

It was a pleasure as always to meet with you and hope to see you soon again. Remember me to all of the gang and with best to you, I am

Yours truly,

L. B. Nourse, Manager

LBN:ps

COPY

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
CROPS RESEARCH DIVISION
BELTSVILLE, MARYLAND

Cotton & Cordage Fibers
Research Branch

November 7, 1957

Mr. L. B. Nourse, Manager
California Planting Cottonseed Distributors
2201 F Street
Bakersfield, California

Dear Larry:

You doubtless have a copy of John Turner's comments on the meeting we had to discuss bacterial blight. This certainly was an unusual opportunity and your efforts in that discussion are very much appreciated.

Under existing conditions there seems to be little more that we can do other than that suggested in the meeting. If, as is indicated, blight continues to spread and become more destructive in the sprinkler-irrigated areas, despite efforts to reduce the damage by sanitation and seed treatment, it may be necessary to take more positive action and intensify our efforts to develop resistance in 4-42. This, however, is something that should be undertaken after other measures have failed. But, in the meantime, we certainly could be exploring sources of resistance which could be used without appreciably altering the agronomic or fiber properties of 4-42.

We are very much interested in this problem and hope that you will keep us advised of developments from time to time.

Very truly yours,

John T. Presley, Acting Head
Cotton Disease Section

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Stabilization and Conservation Committee
Kings ASC County Committee
Cviic Center Bldg., Room 2
321 N. Douty Street
Hanford, California

February 12, 1958

California Planting Cotton Seed Distributors
2201 "F" Street
Bakersfield, California

Attention: L. B. Nourse, Manager

Gentlemen:

Subject: Request for Exemption from Marketing Quota Penalty

Your request for exemption from Marketing Quota Penalties was referred February 3, 1958, to the State Committee for their recommendations.

The Kings County Committee received the following reply:
"We do not believe that this request meets the qualifications of Section 722.920(f)(2) of the 1958 Cotton Allotment Regulations since apparently the Experiment Station will not bear all of the costs and risks of the experiment, nor will the profits, if any, inure to the benefit of the Station. Accordingly, we have no alternative, but to deny the request."

The Kings County Committee concur with the recommendations of the State Committee.

Sincerely yours,

Martin K. Dowd
County Office Manager

Copies: (2/13/58)
John H. Turner, Jr.
O.D. McCutcheon, Farm Adv. Kings County
Robert Sullivan, Murray Land Company

January 31, 1958

Kings County A.S.C. Committee
321 North Douty Street
Hanford, California

Re: Possibility of carrying on research experiments on Bacterial Blight in sprinklered cotton fields in Kings County.

COPY

Gentlemen:

The disease known as Angular Leaf Spot, or Bacterial Blight, in sprinklered cotton fields was found in Fresno County in 1950. Since then it has spread to all counties in the San Joaquin Valley.

As soon as it was found, the California Planting Cotton Seed Distributors, with the assistance of the Cooperating ginning Companies and pure seed growers, put into effect voluntary control measures whereby no planting seed could be saved at any gin that processed sprinklered cotton. This was to avoid rigid State controls. (see rules and regulations attached).

Since this disease has not been found in row-irrigated fields, we felt that such measures were advisable to protect our planting seed against infection. This works a hardship on the ginning companies as well as all growers, many of whom have to pass up one gin and haul their cotton a greater distance to a gin which does not handle sprinklered cotton.

Each year the Agricultural Commissioners and some Farm Advisors have carried on a survey of sprinklered cotton fields, looking for the disease. This past season the Distributors amplified this work by hiring a competent man to assist in inspections and it was found that more fields had contracted the disease and that it was scattered over a wider area than ever before.

Some of the worst infected fields were found in the area south of Huron and between Murray and Kettleman City in Kings County (letter from Kings County Commissioner attached).

Those who know most about the disease have come to the conclusion that the only cure is to develop resistance in the cotton plant through breeding and the process of elimination in various cottons, the results of which can be crossed with our present quality, high yielding A 4-42 cotton.

Such experiments can only be carried on with any degree of success on a piece of ground that is known to be thoroughly contaminated. Only one such piece of ground was found last year, and that is in Kings County, located in the area mentioned above and belonging to Mr. Sullivan. I believe this is in Section 29-21-18.

Some experiments were carried on, using this piece of ground, late last season and should be carried on in the same location in 1958. However, Mr. Sullivan is not planting cotton on the same ground this year and, since we only need two to four acres for experimental work, he cannot afford to move a sprinkling system for that amount of cotton.

We are not attempting to favor any individual. However, Mr. Sullivan is willing to cooperate, but he will need an additional 20 acres, to which he will add 10 acres of his own allotment, so that the operation may be efficient. This 30 acres would permit him to keep one lateral of sprinklers without moving them from the infected area to a clean one. With a possibility that he may get a reduced yield due to the experiments, and planting on the same infected ground, it is felt that it will not be a money-making venture for him.

This year our survey showed that some 20,000 acres located in all counties were found to be infected and that the use of sprinklers is increasing each year, with a possibility of from 50,000 to 100,000 additional acres being under sprinklers within the next three years. If this is true, it is essential that work be started immediately, as development of a resistant strain of cotton takes time. It could soon become a very serious situation for many growers in the San Joaquin (see copy of meeting attached).

We have never asked for additional allotments for any grower, but since the logical place to carry on this work is within your County, we wanted to present the facts to your Committee. If you can see the seriousness of the problem for your growers, as well as for all growers in the San Joaquin Valley, and can work out a plan whereby experiments can be placed on the above mentioned ground without working a hardship on any individual, it will be greatly appreciated by the California Planting Cotton Seed Distributors and the cooperating cotton industry.

Yours truly,

L. B. Nourse, Manager

LBN:ps
cc: John Turner
Sullivan, McCutcheon,
Haupt,

PREVENTATIVE MEASURES RATHER THAN POSSIBLE STATE REGULATIONS FOR CONTROL OF BACTERIAL BLIGHT OR ANGULAR LEAF SPOT

1. ORIGIN OF DISEASE AND VOLUNTARY PREVENTATIVE MEASURES:

A. It was discovered in 1950 in one field.

B. In 1953 it had spread to the following areas; Wheeler Ridge, Jasmine, Fresno, Five Points and Madera. It has been found already this year at Wheeler Ridge and Caruthers.

C. It spreads by rain or other assimilated conditions such as sprinkling, causing over damp conditions.

D. It has never been found in row irrigated fields in California or other states.

E. It is a bacterial disease and contaminates implements and machinery.

F. It reduces your yield by ruining the bolls.

G. **To eliminate the disease one must plow early and cover debris at least 6 inches and irrigate immediately to rot all material or keep cotton off for one or two years.**

H. **It is essential that sprinklered cotton be kept from going through same gin where planting seed is being saved. If it gets into the seed there is no cure.**

I. Composite samples of planting seed from row irrigated fields have been tested at the State laboratories and no trace of the disease has been found in Re-production or Green Tag Seed. WE MUST KEEP IT THAT WAY.

2. WHAT HAS BEEN DONE BY THE DISTRIBUTORS:

A. No Parent or Purple Tag seed has been permitted to be planted in sprinklered fields; or if it was planted by mistake, no seed is saved.

B. Where a company has a single unit gin, no seed will be saved after sprinklered cotton has been received for ginning.

C. Where there are two units on the same property, sprinklered cotton must be run through one unit and planting seed through the other.

3. WHAT A GROWER CAN DO FOR HIS OWN PROTECTION IN THE FUTURE:

A. When your gin manager asks that you delay picking for a day or two if you have sprinklered cotton, **be tolerant and cooperate with him.**

B. If he asks that you wait a little during the peak to gin your trailer of cotton so he may run it through one unit, **cooperate with him. He is only trying to protect the planting seed from becoming infected and to guard against RIGID CONTROLS for your good.**

C. Be sure that you plant only seed that has been treated with Ceresan, has been acid delinted or treated with other suitable disinfectant. These methods kill any surface contamination.

4. CONTROLS WE ARE TRYING TO STAY AWAY FROM BY VOLUNTARY METHODS:

A. In the area where the disease was discovered and again last year the State representative put the following rules into effect.

(a) All sprinklered cotton must go through one gin.

(b) Ranches were quarantined to the extent that materials and machinery could not be removed from the ranch except under certain conditions.

(c) The State does not want to put rigid controls into effect. If we follow the above rules voluntarily regarding ginning we may be able to check the spread so that your production will not decrease in the future.

5. GUARD YOUR FUTURE BY COOPERATING WITH YOUR GIN MANAGER. HE IS MERELY TRYING TO PROTECT THE INTERESTS OF THE COTTON GROWER.

CALIFORNIA PLANTING COTTON SEED DISTRIBUTORS
2201 F Street Bakersfield, California

L. O. HAUPT
COMMISSIONER

CLAUDE W. BRIDGES
DEPUTY

280 – 11½ AVENUE
LUDLOW 4-2331 - EXT. 74

OFFICE OF

AGRICULTURAL COMMISSIONER

KINGS COUNTY

HANFORD, CALIFORNIA

11 September 1957

Mr. L. B. Nourse, Manager
California Planting Cotton
Seed Distributors,
2201 F Street
Bakersfield, California

Dear Larry,

We have completed our Angular Leaf Spot survey in Kings County, with substantially the following results.

Of all the sprinkled cotton fields in our County, only one showed no symptoms of this disease. The degree of infection, in all other fields, ranged from one percent of total field acreage up to as high as fifteen or possibly twenty percent.

All these infected fields, as near as I could ascertain, had previous cotton history except one. Ironically, this one field was one of the fields most severely infected. The grower admitted however, that no attempt was made to clean or sterilize farm machinery when moving from one field to another. This inter-movement of tools and machinery could be the source of infection.

If we can be of any further service, please do not hesitate to call upon us.

Very truly yours,

Claude W. Bridges,
Deputy Agricultural Commissioner

BACTERIAL BLIGHT CONFERENCE

HELD OCTOBER 14, 1957
U. S. COTTON FIELD STATION
SHAFTER, CALIFORNIA

PERSONNEL PRESENT:

JOHN PRESLEY, DICK GARDER, WM. SCHNATHORST, LARRY NOURSE, JACK HURT, JIM PERSONS, CHARLIE CLAREY, BOB MARTIN, MARVIN HOOVER, JERRY DEN HARTOG AND JOHN TURNER.

- - - - - - - - - - - -

WHILE WE HAD DR. JOHN PRESLEY WITH US, THE PROBLEMS OF BACTERIAL BLIGHT IN COTTON FIELDS OF THE SAN JOAQUIN VALLEY WERE DISCUSSED. PRESLEY GAVE A GENERAL RUN-DOWN REGARDING THE BLIGHT ORGANISM AND THE HISTORY OF ITS DAMAGE IN VARIOUS PARTS OF THE COTTON BELT. ALSO THE VARIOUS MEANS OF CONTROL BEING USED AND TRIED. THE FOLLOWING POINTS MIGHT BE CITED AS THE KEY INFORMATION RESULTING FROM THE CONFERENCE:

1) BREEDERS IN VARIOUS PARTS OF THE NATION HAVE INCORPORATED RESISTANCE INTO COMMERCIAL VARIETIES.

2) AT LEAST TWO RACES OF THE ORGANISM HAVE BEEN IDENTIFIED AND RESISTANCE TO BOTH RACES MAY BE FOUND WITHIN THE SAME BREEDING MATERIAL, BUT IN MOST CASES A STRAIN HAS RESISTANCE TO ONLY ONE OF THE RACES.

3) CLEAN CULTURAL PRACTICES ARE PART OF THE PROGRAM FOR REDUCING BLIGHT DAMAGE IN COTTON CONSISTING OF STALK DISPOSAL, PLANTING ACID-DELINTED SEED, CLEANING ALL EQUIPMENT USED IN FIELDS ADJACENT TO INFECTED SOILS AND PRECAUTIONS REGARDING ANIMAL MOVEMENT FROM FIELD TO FIELD. IT WAS ALSO NOTED THAT THE ORGANISM COULD BE CARRIED BY THE WIND.

4) GIN AND RELATED EQUIPMENT COULD WELL HARBOR THE ORGANISM AND EMPHASIZES THE IMPORTANCE OF SAVING PURE SEED FROM GINS THAT GIN ONLY COTTON FROM NON-SPRINKLER IRRIGATED FIELDS.

5) Den Hartog presented the findings from a screening test at Kettlemen City this Fall, indicating three strains of Shafter cotton may be sources of resistance.

6) Bob Martin, who has made a survey of the prevalence of the disease, indicates a 20,000 acre potential of blight infected fields. This, of course, embraces most of the sprinkler irrigated cotton in the western portion of the valley. He states that a conservative estimate would be that the practice of sprinkler-irrigating is likely to grow. (Perhaps 50,000 to 100,000 acres within the next 3 years.)

* * * * * * * * * * * * *

Conclusions in General:

It seems important to all that we take every possible step to eradicate this disease from our state; hence, it is generally agreed that we will do the following:

1) The Seed Distributors will continue to maintain their regulations regarding pure seed saving from only clean gins (those not having ginned sprinkler-irrigated cottons).

2) Marvin Moover, through the Extension Service, would project a more intensive educational program for the coming year.

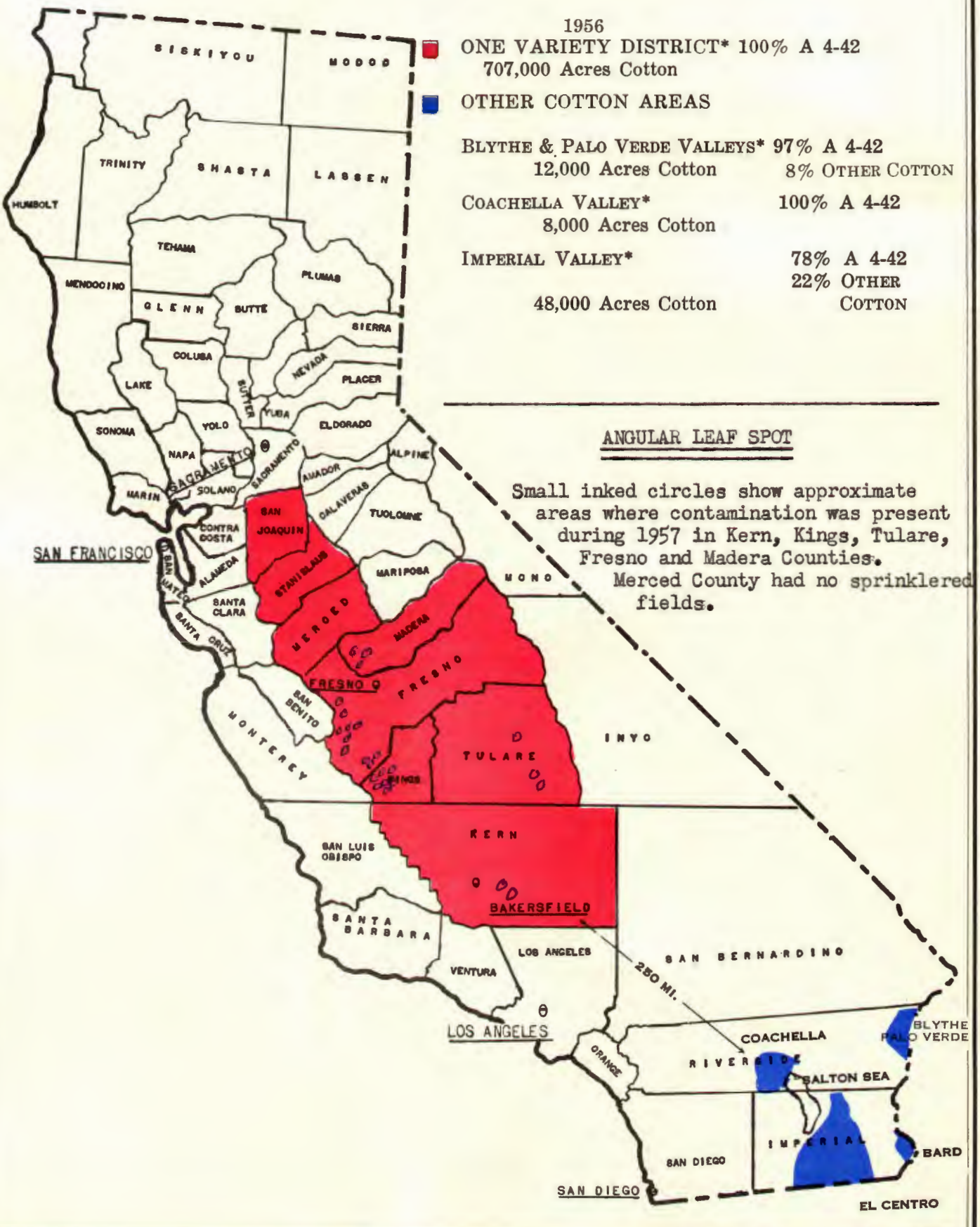
3) Acid delinting of planting seed will be recommended to the particular growers in 1958 who are planting on sprinkler-irrigated fields.

4) The breeding material from Shafter having blight resistance possibilities will be explored to the fullest by: (a) having Luther Bird, Pathologist in Texas, to screen for pure resistance from the most promising material, and (b) conducting detailed breeding of promising strains on land known to be infected on the west side of the valley. Pathologists from Davis may cooperate on these evaluations.

5) The pathologists at Davis (Garber and Schmathorst) conduct a study regarding wind-borne particles that carry the Bacterial Blight organism.

NOTE: This is not to be taken as a word-for-word account of the conference, but to use for your files for future reference of our common problem.

CALIFORNIA



1956

ONE VARIETY DISTRICT* 100% A 4-42
707,000 Acres Cotton

OTHER COTTON AREAS

BLYTHE & PALO VERDE VALLEYS* 97% A 4-42
12,000 Acres Cotton — 8% OTHER COTTON

COACHELLA VALLEY* 100% A 4-42
8,000 Acres Cotton

IMPERIAL VALLEY* 78% A 4-42
22% OTHER COTTON
48,000 Acres Cotton

ANGULAR LEAF SPOT

Small inked circles show approximate areas where contamination was present during 1957 in Kern, Kings, Tulare, Fresno and Madera Counties.
Merced County had no sprinklered fields.

August 27. Martin - Coalinga. 55C0 Co

1. Starkey + Irwin
   A found on 6 sections
   B. Purchased some chemical @ 8 per acre to control
2. Waldo Keith -
   A found scattered — 55C0 Co
3. Harold Keith - — 55C0 Co.
   A found scattered
   B. stopped sprinkling
4. Nervous — Producers
   A found spot
5. Griffen + Griffen — Producers
   A no spot
6. Conn John - west of headquarters has spot
7. Uhl — Producers
   A no spot
8. Gribble Coalinga
   A no spot

August 29. Martin -

1. Obtained last years seed from augers in 55 Huron gin
2. Seed supposed to be infected as sprinklered cotton was processed
3. Planted 4 flats at Norris home in PM
   A 2 flats treated with acid
   B 2 flats with fuzzy seed soaked in water
   C. Soil sterilized
4. Sept 1. seed started breaking thru ground
   Sept 2. some plants up
   Sept 3. some leaves flattened out
   Sept 4. Could find no spots with glass
   A Plants being kept moist with fine spray
   B One flat of acid + one of fuzzy untreated not up yet
   C. Two flats broken thru Sept. 6 - only 4 or 5 plants
   Sept 16 - no leaf spot but 3 plants died Sept 13 - [illegible]
   15 - planted seed from last year diseased bolls. no leaf spot by Sept 26

September 3 - Martin called -

1. Giffen supposed to have planted all acid treated + thimet treated seed.
2. Gilkey — Producers
   A no spot

SURVEY
ANGULAR LEAF SPOT
1958

August 25 - Martin Cleary Nourse

1. Murrietta Farms - Sherman Thomas. S5C0L
   A Spot found on 3 sections
   B. Foreman inferred from Gin mgr that seed has infected
2. Lineman farms —
   A Had leaf spot in 1957 S5C0L
   B. Could not find on this date
3. Gifford Enterprises S5C0L
   A. Could find no spot

August 26 - Martin Turner Cleary Nourse

1. Marvin Wood - S5C0L
   A no spot
2. Sumner Peck S5C0L
   A found spot
3. Price Gifford S5C0L
   A. no spot
4. Airway Farms S5C0L
   A. Spot in all areas - Damage severe
   B. Some plants in Turners test rows showed resistance
5. Nielson. S5C0L.
   A found spot
   B. Had stopped sprinkling - seemed to have checked
6. Brewster. Producers
   A found spot
7. Sullivan S5C0L
   A found spot

3. Tom Oneil — Producers

A no spot

4. Five Points Farming Co. Farrell-Coalinga — Producers

A Spot found

B Never in cotton before

5. Checked with Visalia + Kingsbury acid plants

A Visalia treated none for Giffen

B Kingsbury treated for Mike Giffen. Tres Pecos Farms — Jerry Giffen

C. Talk with Roy Stevens SSCO Co. Chowchilla

A Is sure that Giffens seed was acid delinted

Sept 5 6. Talked with Martin:

A He visited with Russell Giffen — he did not use acid delinted seed. He treated with Thimet + Dythane —

Sept. 8 - Letter from McLean McLean Co. — no leaf spot found.

Sept 8-9-10-11-12

Martin + 4 of Morley's boys visited app 60 fields in Delano McFarland Kern [illegible] [illegible] [illegible] Edison Arvin Wheeler Ridge + Maricopa flats area.

Found only one small field infestation. On [illegible] [illegible] Patch Hayley at [illegible] north of Hill top. Pinkerton field planted with SSCO Co. seed. Mechanically delinted.

Sept. 26 - Started putting wet solution of [illegible] from infested field of [illegible] + [illegible] on part of plant in acid delinted [illegible] + fuzzy tray. Few brown spots appeared September 30 but do not look like leaf spot

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
CROPS RESEARCH DIVISION
ROUTE 1, BOX 17
SHAFTER, CALIFORNIA

JANUARY 31, 1958

KINGS CITY ASC COMMITTEE
321 No. DOWDY STREET
HANFORD, CALIFORNIA

GENTLEMEN:

WE HAVE A PROBLEM WHICH IS NOT ONLY IMPORTANT TO YOUR KINGS COUNTY COTTON GROWERS, BUT TO THE ENTIRE COTTON INDUSTRY IN CALIFORNIA.

BACTERIAL BLIGHT (ALSO CALLED ANGULAR LEAF SPOT) WAS FOUND IN CALIFORNIA SOME 5 YEARS AGO. UP UNTIL 1957 THE DISEASE WAS SO MINOR THAT WE WERE DOUBTFUL OF ITS IMPORTANCE. HOWEVER, THIS PAST YEAR SOME 20,000 ACRES OF COTTON IN FOUR COUNTIES WERE FOUND WITH THE DISEASE PRESENT; IN SOME CASES IT WAS SEVERE. THE MOST UNIFORMLY-INFECTED FIELD WAS ON THE ROBERT SULLIVAN RANCH WHICH IS NORTHWEST OF KETTLEMEN CITY IN KINGS COUNTY. WE WERE ABLE TO USE THIS SPOT IN LATE SUMMER TO MAKE SOME TEST OF COTTON BREEDING MATERIAL. INDICATIONS WERE THAT RESISTANCE TO THE DISEASE IS POSSIBLE.

THE JOB OF THIS STATION IS TO BREED THE SEED FOR OUR ONE-VARIETY COTTON PROGRAM OF THE SAN JOAQUIN VALLEY. ALL SEED IS DERIVED FROM THIS STATION. THE CALIFORNIA PLANTING COTTON SEED DISTRIBUTORS ARE THE TRUSTEES OF THE SEED AND HAVE TAKEN THE RESPONSIBILITY OF MULTIPLYING AND DISTRIBUTING THE SEED ONCE IT IS RELEASED BY THE USDA. IN ORDER FOR US TO DEVELOP A BLIGHT RESISTANT STRAIN OF COTTON WE MUST PERFORM THE ACTUAL BREEDING ON LAND KNOWN TO HAVE THIS DISEASE. THE ONLY TRACT OF LAND I CAN FEEL CERTAIN OF IS THE TRACT MENTIONED IN THE PREVIOUS PARAGRAPH. ITS IDENTITY AS TO TRACT NUMBER WITHIN YOUR COUNTY CAN BE POINTED OUT BY YOUR FARM ADVISOR, MR. O. D. MCCUTCHEON, WHO HAS BEEN QUITE COOPERATIVE IN OUR EXPERIMENTAL ENDEAVORS.

I HOPE THAT SOME WAY CAN BE WORKED OUT WITHIN YOUR COUNTY SO THAT THIS PARTICULAR BLIGHT-INFECTED LAND OF MR. SULLIVAN'S RANCH CAN BE USED FOR THIS IMPORTANT BREEDING ENDEAVOR.

SINCERELY YOURS,

JOHN H. TURNER
DIRECTOR

LM

CC: NOURSE
MCCUTCHEON

1957-58

Hurst Studio
Madera, Calif.

Cotton Diseases

How to Recognize and Control Them

PREPARED BY THE

COTTON DISEASE COUNCIL

IN COOPERATION WITH THE

NATIONAL COTTON COUNCIL

PUBLISHED BY

THE COTTON GIN AND OIL MILL PRESS

DALLAS, TEXAS

APRIL 25, 1953 ISSUE

FOREGROUND shows cotton attacked by root rot. Background shows control obtained by rotation with Hubam clover. Root rot is confined primarily to the highly calcareous and alkaline soils of the Southwest.

Cotton Diseases

How to recognize and control them

IN 1888, A WORKER in Texas named Pammel made the first report on a cotton disease in the United States. He had found and identified "root rot." Since that time, we have found many additional cotton diseases, some highly destructive.

Disease spread has sometimes been unbelievably fast. Verticillium wilt, for example, was discovered in Arkansas, Tennessee and California in the late 1920's; it has now been reported in every major cotton-producing state.

DISEASE LOSSES

DESPITE the rapid increase in cotton diseases, many growers and others interested in cotton are not inclined to take them seriously. Frequently they do not recognize the nature and extent of damage from this source.

Damage is likely to be incorrectly attributed to adverse weather, insects, fertility differences, and the like — thus obscuring the real importance of the problem. However, the results of a survey conducted under the auspices of the Cotton Disease Council indicate that 1952 production losses identified with cotton diseases were almost 2 million bales, worth about 400 million dollars.

Seedling diseases, which attack cotton all across the Belt, accounted for one-fourth of the loss reported by the Cotton Disease Council survey. Bacterial blight was second in importance, accounting for 14 percent of the reported loss. Other important diseases, in terms of their Beltwide contribution to the damage were: Root Knot, 10 percent; Boll Rot, 10 percent; Fusarium Wilt, 8 percent; Root Rot, 7 percent; Anthracnose Boll Rot and Verticillium Wilt, 3 percent each; and Ascochyta or Wet Weather Blight, 1 percent. Moreover, diseases which appear to be minor in relation to the total of the Cotton Belt often are of major importance in a particular state or in a particular locality. On an individual farm, when disease infestation is extensive, accurate identification and control become a problem of major importance.

RESEARCH

FOR MORE THAN a half century, research workers have been studying cotton diseases and learning how to fight them. They noted that cotton, a native of tropical and subtropical regions, was very susceptible to disease during cool, damp weather. They also found that disease damage was related to soil conditions, cultural practices, variety planted, and other factors.

Some of the first research work on disease resistance was carried out by Orton in 1900. He was the first to breed upland cotton for Fusarium-wilt resistance. Today, breeding for resistance is still one of the most promising approaches to disease control. Recent developments in genetics, using wild species of cotton, are opening up many new possibilities along this line.

Chemical treatment for planting seed is now a proven method of disease control. Scientists also have found that chemical treatment of soil can aid in solving certain disease problems.

The results of such scientific research are summarized in this report. They are supplemented by full-color pictures which should aid farmers and others in identifying the major cotton diseases.

RECOGNIZING AND CONTROLLING DISEASES

PARASITIC organisms are responsible for the major diseases. They are caused by fungi, bacteria or nematodes which enter the plants and obtain their food from them.

The material in this summary was prepared by the Cotton Disease Council in cooperation with the National Cotton Council

Fusarium Wilt

Fusarium wilt or cotton wilt is caused by *Fusarium oxysporum* f. *vasinfectum*. This fungus is well adapted to survival on organic matter in the soil for an indefinite period of time. The disease is prevalent from Virginia to Texas, but causes heaviest losses in the sandy, acid soils of the Southeastern states.

Symptoms

Wilt-infected plants characteristically are stunted and fruit earlier than healthy plants. On young plants the leaves wilt and drop, leaving the bare stems. Brown wood, either solid brown or in streaks, severe wilting, fired and yellowed leaves, leaf fall and plant death are symptoms in older plants.

A diagonal cut across the plant stem at the ground line will show this browning of the stalk tissue, and is one way of easily identifying the disease in the field.

Soils in which wilt occurs are also generally favorable for root-knot nematodes and the two organisms are often closely associated. Cotton plants whose roots have been attacked by nematodes are highly susceptible to attack by the Fusarium-wilt organism.

Control

Wilt can be satisfactorily controlled by growing wilt-resistant varieties, such as Coker 100 Wilt, Stonewilt, Empire, White Gold, Pandora, Plains or other varieties that have shown tolerance. Several other control measures help to prevent damage: (1) application of balanced fertilizers with sufficient potash to prevent rust; (2) rotations or the application of soil fumigants to reduce nematodes.

Verticillium Wilt

Verticillium wilt is caused by *Verticillium albo-atrum*, a soil-borne fungus which can persist in the soil over long periods of time. It has been found in all of the cotton-growing states. Although it is a relatively new cotton disease it is now considered one of the most serious, particularly in the irrigated areas of the Southwest, Far West and in the Mississippi Delta.

Symptoms

Verticillium affects the cotton plant in all stages from seedling to mature size. The most outstanding symptom of the disease is the development of chlorotic and brown areas on the leaves, which gives them a distinctive mottled appearance. When young plants are attacked they are often killed outright, but older plants may survive the entire season, shedding their leaves and sending up new growth near the base of the plants. The woody part of the roots and stalk turns brown as the disease progresses upward through the entire plant.

Control

Intensive breeding programs are under way to develop resistant varieties and considerable progress has been made in obtaining varieties tolerant to this disease. In the irrigated areas of the Southwest, it has been found that high beds tend to increase the soil temperature and reduce the severity of the attack. Also thick stands have reduced wilt and increased yield.

Cotton Root Rot

Cotton root rot is caused by *Phymatotrichum omnivorium*, a soil-borne fungus. This disease is confined primarily to the highly calcareous and alkaline soils of the Southwest. The heavy waxy prairie soils with poor internal drainage and aeration, found over a large part of Texas, are particularly favorable to the cotton root-rot fungus. Severe losses are suffered each year in Texas, and in certain areas of New Mexico and Arizona. It is also a minor problem in Arkansas, Louisiana, Oklahoma and California.

Symptoms

First evidence of the disease is a slight yellowing of the leaves followed by a sudden wilting. The entire plant soon dries out and the leaves turn brown and cling to the stems. At this stage the root bark tissue is destroyed. The most conspicuous symptom of root rot is the occurrence of areas of dead or browned plants in a field.

Control

Due to the nature of the fungus it is very difficult to control. Cotton rotation with Hubam clover has given practical control in Texas. Other practices that have been found helpful in reducing losses from this severe disease are: (1) early fall plowing; (2) the addition of nitrogen and manure to the soil; (3) deep tillage; (4) rotations with sorghum, small grain or corn for a period of years.

Bacterial Blight

Bacterial blight is caused by *Xanthomonas malvacearum*. The disease is variously called angular leaf spot, black arm, vein blight and boll rot, depending upon the part of the plant attacked. This disease attacks cotton in all sections of the Cotton Belt and in foreign countries.

Symptoms

The characteristic symptoms of bacterial blight are the greasy water-soaked lesions on the cotyledons, leaves or bolls. From these primary lesions or spots the disease may spread rapidly to surrounding plants by means of wind-blown rain or irrigation water. Shedding of leaves, squares and young bolls follows cases of severe infection. Thus, it may injure seedlings and cause poor stands, or it may attack older plants and bolls, reducing lint yield and fiber quality.

Control

Partial control has been obtained by treating planting seed with recommended fungicides and by acid delinting. This practice does not insure complete protection because the organism may be carried inside the seed in small amounts and cannot be destroyed by seed treatment. It may also over-winter on old stalks and produce centers of infection in the following crop.

The discovery of a resistant strain of cotton has made it possible to introduce this desirable trait into commercially available varieties.

Root Knot

Root knot is caused by nematodes or microscopic eel worms which live in the soil. The root knot nematode, *Meloidogyne incognita*, is by far the most serious nematode attacking cotton. It is found in sandy soils wherever cotton is grown. This is particularly true in the rainbelt area and in the lighter irrigated soils in Arizona and California. The presence of nematodes in soils also infested with Fusarium wilt offers a serious problem since both attack the cotton plant simultaneously with disastrous results.

Symptoms

The symptoms of root knot are prominent galls or knots on the roots. The galls vary in size from very minute on

FUSARIUM WILT is prevalent from Virginia to Texas, but causes heaviest losses in the sandy, acid soils of the Southeastern states. Photograph shows the difference between Fusarium wilt-resistant and susceptible varieties of cotton.

FUSARIUM WILT A mold-like fungus thot con live in soil or old plants for several yeors. Attacks young plants but more severe on older plants. **Symptoms:** Leaves wilt, fire, fall off and the plant dies. The wood is brown when the bark is removed from the roots or stems. **Insert** shows an infected leaf.

VERTICILLIUM WILT A soil-borne fungus which offects plont in oll stages from seedling to moturity. **Symptoms:** Appeorance of chlorotic areas on the margin and between principal veins of the leaves which give them o distinct mottled appearance. Longitudinol cut into wood at base of stalk may reveal a slight browning of the vascular system. **Inserts** show stem and leaf symptoms.

COTTON ROOT ROT A soil-borne fungus. Confined primarily to the highly calcareous soils af the Southwest. **Symptoms:** Attacked plants wilt quickly and die usually within two or three doys and the leaves cling ta the dead plants. **Insert** shaws tap roots of diseased plants.

BACTERIAL BLIGHT (Angular Leaf Spot) Bacteria is seed-borne. Spreod by splashing or blowing of rain drops from leaf to leaf. **Symptoms:** Angular, watersoaked spots on leaves that later turn dark, and round spots on boll. Attacks seedlings. **Inserts** show leaf and boll symptoms.

ROOT KNOT (Nematode) Caused by microscopic eel worms which live in the soil. **Symptoms:** Knotty, irregular swellings on the roots. Plants ore dwarfed, pale and unthrifty. **Insert** shows closeup of diseased root.

SEEDLING DISEASES Organism exists in the soil. **Picture at top** shows how organism attacks seedling below soil line. **Symptoms:** Young plants are pale, unhealthy and often die. **Bottom picture** shows damping off.

ASCOCHYTA or WET-WEATHER BLIGHT A seed-borne disease. May live over winter on old stalks. **Symptoms:** Affects all above-ground parts of plants except the flowers. Stem cankers, which are brownish, originate at base of leaf and spread to other parts of plant. **Top picture** shows leaf spots. **Bottom picture** shows affected plants in field.

BOLL ROTS Caused by a large number of organisms. **Symptoms:** Discolored spots on outside of the boll, followed frequently by staining and rotting of the seed and fiber.

COOPERATORS

The cotton industry is indebted to the federal and state workers and the many individuals in private industry who have contributed to our growing knowledge of cotton diseases and how to control them. While it was impossible to compile a complete roster of these individuals, every effort was made to include in the following list each federal and state worker who has indicated a special interest in this development.

ALABAMA

O. N. Andrews, Alabama Agricultural Extension Service, Auburn.

A. L. Smith, Alabama Agricultural Experiment Station, Auburn.

H. B. Tisdale, Alabama Agricultural Experiment Station, Auburn.

ARIZONA

R. H. Peebles, United States Field Station, Sacaton.

A. H. Pressley, Arizona Agricultural Experiment Station, Tucson.

H. W. Reynolds, United States Field Station, Sacaton.

Ivan J. Shields, Arizona Agricultural Extension Service, Phoenix.

R. B. Streets, Arizona Agricultural Experiment Station, Tucson.

ARKANSAS

C. A. Moosberg, Arkansas Agricultural Experiment Station, Marianna.

H. E. Smith, Arkansas Agricultural Extension Service, Fayetteville.

V. H. Young, Arkansas Agricultural Experiment Station, Fayetteville.

J. O. Ware, Arkansas Agricultural Experiment Station, Fayetteville.

CALIFORNIA

G. J. Harrison, United States Cotton Field Station, Shafter.

Marvin Hoover, California Agricultural Extension Service, Shafter.

R. A. Kortsen, California Agricultural Extension Service, El Centro.

B. A. Rudolph, California Agricultural Experiment Station, San Jose.

J. H. Turner, Jr., United States Cotton Field Station, Shafter.

GEORGIA

W. W. Ballard, Georgia Agricultural Experiment Station, Experiment.

B. B. Higgins, Georgia Agricultural Experiment Station, Griffin.

J. G. Jenkins, Georgia Agricultural Experiment Station, Tifton.

J. H. Miller, Georgia Agricultural Experiment Station, Athens.

E. C. Westbrook, Georgia Agricultural Extension Service, Athens.

LOUISIANA

I. W. Carson, Louisiana Agricultural Extension Service, Baton Rouge.

S. J. P. Chilton, Louisiana Agricultural Experiment Station, Baton Rouge.

D. C. Neal, Louisiana Agricultural Experiment Station, Baton Rouge.

MARYLAND

H. D. Barker, Division of Cotton and Other Fiber Crops and Diseases, Beltsville.

P. B. Marsh, Division of Cotton and Other Fiber Crops and Diseases, Beltsville.

P. R. Miller, Division of Mycology and Disease Survey, Beltsville.

J. T. Presley, Division of Cotton and Other Fiber Crops and Diseases, Beltsville.

W. H. Tharp, Division of Cotton and Other Fiber Crops and Diseases, Beltsville.

MISSISSIPPI

H. R. Carns, United States Cotton Field Station, Stoneville.

J. B. Dick, United States Cotton Field Station, Stoneville.

T. M. Waller, Mississippi Agricultural Extension Service, State College.

A. B. Wiles, Mississippi Agricultural Experiment Station, State College.

MISSOURI

E. M. Brown, Missouri Agricultural Experiment Station, Columbia.

W. J. Murphy, Missouri Agricultural Extension Service, Columbia.

NEW MEXICO

L. M. Blank, New Mexico Agricultural Experiment Station, State College.

R. E. Hunter, New Mexico Agricultural Experiment Station, State College.

A. R. Leding, United States Cotton Field Station, State College.

P. J. Leyendecker, Jr., New Mexico Agricultural Experiment Station, State College.

R. M. Nakayama, New Mexico Agricultural Experiment Station, State College.

G. N. Stroman, New Mexico Agricultural Experiment Station, State College.

NORTH CAROLINA

H. R. Garris, North Carolina Agricultural Extension Service, Raleigh.

S. G. Lehman, North Carolina Agricultural Experiment Station, Raleigh.

OKLAHOMA

L. A. Brinkerhoff, Oklahoma Agricultural Experiment Station, Stillwater.

J. M. Green, Oklahoma Agricultural Experiment Station, Stillwater.

W. W. Hanson, Oklahoma Agricultural Experiment Station, Stillwater.

G. E. Stroup, Oklahoma Agricultural Extension Service, Stillwater.

SOUTH CAROLINA

G. M. Armstrong, South Carolina Agricultural Experiment Station, Clemson.

C. H. Arndt, South Carolina Agricultural Experiment Station, Clemson.

Q. L. Holdeman, Pee Dee Agricultural Experiment Station, Florence.

W. H. Jenkins, Pee Dee Agricultural Experiment Station, Florence.

W. C. Nettles, South Carolina Agricultural Extension Service, Clemson.

TENNESSEE

E. N. Duncan, United States Cotton Field Station, Knoxville.

J. M. Epps, West Tennessee Agricultural Experiment Station, Jackson.

W. L. Lett, National Cotton Council, Memphis.

R. P. Mullett, Tennessee Agricultural Extension Service, Knoxville.

D. M. Simpson, United States Cotton Field Station, Knoxville.

C. L. Welch, National Cotton Council, Memphis.

TEXAS

L. S. Bird, Texas Agricultural Experiment Station, College Station.

E. D. Cook, Texas Agricultural Experiment Station, Temple.

F. C. Elliott, Texas Agricultural Extension Service, College Station.

C. E. Fisher, Texas Agricultural Experiment Station, Spur.

G. H. Godfrey, Texas Agricultural Experiment Station, Weslaco.

J. L. Hubbard, Texas Agricultural Experiment Station, Weslaco.

D. L. Jones, Texas Agricultural Experiment Station, Lubbock.

D. D. Porter, United States Cotton Field Station, Greenville.

J. R. Quinby, Texas Agricultural Experiment Station, Chillicothe.

L. L. Ray, Texas Agricultural Experiment Station, Lubbock.

C. B. Spencer, Texas Cottonseed Crushers' Association, Dallas.

L. S. Stith, Texas Agricultural Experiment Station, Ysleta.

G. M. Watkins, Texas Agricultural Experiment Station, College Station.

WASHINGTON, D. C.

R. J. Haskell, Federal Extension Service, USDA.

J. M. Saunders, Federal Extension Service, USDA.

October 6, 1954

COPY

Mr. Webb Cullington
Producers Cotton Oil Co.
P. O. Box 1984
Pheonix, Arizona

Dear Webb:

Have just had a call from Harry Brunet and find you are having trouble with Angular Leaf Spot.

We have been drilling away on this since 1951 and are getting very good cooperation, but it is a matter of education. We find here that the growers are willing to cooperate if the matter is properly presented, but our biggest trouble is with the gin managers, who for some reason or other feel hesitant to talk with their growers fearing they will lose some business. This is a very short sighted attitude for if you gain a few bales today and lose several hundred in a year or two due to leaf spot, it does not add up.

Where a gin man thinks he has trouble we contact his grower with him, and, without exception, the growers have cooperated -- even to the extent of hauling the seed to a gin that is not handling sprinklered cotton. It can be done.

Am enclosing the following material, which we have put out:

1. Letter to Companies and Gin Men from State Department.
2. Letter to Companies and Gin Men.
3. Letter to Growers.
4. Letter to Gins.
5. Our Annual Report which carries warnings on Leaf Spot (Page 4). Such warnings have been put in each report made to our Directors and Cooperators since 1951.

We feel that these voluntary measures may ward off a serious situation and keep out governmental controls.

This plan of ours is not perfect but working very well, and we are looking for ideas. However, if there is anything I can do to assist you do not hesitate to give me a ring.

Give my best to all the gang.

Yours very truly,

L. B. Nourse
Manager

lbn/mb
encl.

COPY

BACTERIAL BLIGHT CONFERENCE

HELD OCTOBER 14, 1957
U. S. COTTON FIELD STATION
SHAFTER, CALIFORNIA

PERSONNEL PRESENT:

JOHN PRESLEY, DICK GARBER, WM. SCHNATHORST, LARRY NOURSE, JACK HURT, JIM PERSONS, CHARLIE CLAREY, BOB MARTIN, MARVIN HOOVER, JERRY DEN HARTOG AND JOHN TURNER.

- - - - - - - - - - -

WHILE WE HAD DR. JOHN PRESLEY WITH US, THE PROBLEMS OF BACTERIAL BLIGHT IN COTTON FIELDS OF THE SAN JOAQUIN VALLEY WERE DISCUSSED. PRESLEY GAVE A GENERAL RUN-DOWN REGARDING THE BLIGHT ORGANISM AND THE HISTORY OF ITS DAMAGE IN VARIOUS PARTS OF THE COTTON BELT. ALSO THE VARIOUS MEANS OF CONTROL BEING USED AND TRIED. THE FOLLOWING POINTS MIGHT BE CITED AS THE KEY INFORMATION RESULTING FROM THE CONFERENCE:

1) BREEDERS IN VARIOUS PARTS OF THE NATION HAVE INCORPORATED RESISTANCE INTO COMMERCIAL VARIETIES.
2) AT LEAST TWO RACES OF THE ORGANISM HAVE BEEN IDENTIFIED AND RESISTANCE TO BOTH RACES MAY BE FOUND WITHIN THE SAME BREEDING MATERIAL, BUT IN MOST CASES A STRAIN HAS RESISTANCE TO ONLY ONE OF THE RACES.
3) CLEAN CULTURAL PRACTICES ARE PART OF THE PROGRAM FOR REDUCING BLIGHT DAMAGE IN COTTON CONSISTING OF STALK DISPOSAL, PLANTING ACID-DELINTED SEED, CLEANING ALL EQUIPMENT USED IN FIELDS ADJACENT TO INFECTED SOILS AND PRECAUTIONS REGARDING ANIMAL MOVEMENT FROM FIELD TO FIELD. IT WAS ALSO NOTED THAT THE ORGANISM COULD BE CARRIED BY THE WIND.
4) GIN AND RELATED EQUIPMENT COULD WELL HARBOR THE ORGANISM AND EMPHASIZES THE IMPORTANCE OF SAVING PURE SEED FROM GINS THAT GIN ONLY COTTON FROM NON-SPRINKLER IRRIGATED FIELDS.

5) Den Hartog presented the findings from a screening test at Kettlemen City this Fall, indicating three strains of Shafter cotton may be sources of resistance.

6) Bob Martin, who has made a survey of the prevalence of the disease, indicates a 20,000 acre potential of blight infected fields. This, of course, embraces most of the sprinkler irrigated cotton in the western portion of the valley. He states that a conservative estimate would be that the practice of sprinkler-irrigating is likely to grow. (Perhaps 50,000 to 100,000 acres within the next 3 years.)

* * * * * * * * * * * * *

Conclusions in General:

It seems important to all that we take every possible step to eradicate this disease from our state; hence, it is generally agreed that we will do the following:

1) The Seed Distributors will continue to maintain their regulations regarding pure seed saving from only clean gins (those not having ginned sprinkler-irrigated cottons).

2) Marvin Hoover, through the Extension Service, would project a more intensive educational program for the coning year.

3) Acid delinting of planting seed will be recommended to the particular growers in 1958 who are planting on sprinkler-irrigated fields.

4) The breeding material from Shafter having blight resistance possibilities will be explored to the fullest by: (a) having Luther Bird, Pathologist in Texas, to screen for pure resistance from the most promising material, and (b) conducting detailed breeding of promising strains on land known to be infected on the west side of the valley. Pathologists from Davis may cooperate on these evaluations.

5) THE PATHOLOGISTS AT DAVIS (GARBER AND SCHNATHORST) CONDUCT A STUDY REGARDING WIND-BORNE PARTICLES THAT CARRY THE BACTERIAL BLIGHT ORGANISM.

NOTE: THIS IS NOT TO BE TAKEN AS A WORD-FOR-WORD ACCOUNT OF THE CONFERENCE, BUT TO USE FOR YOUR FILES FOR FUTURE REFERENCE OF OUR COMMON PROBLEM.

DISTRIBUTORS OF CALIFORNIA A 4-42 ACALA PLANTING SEED

DIRECTORS:
H. L. POMEROY
R. H. OESTING
FLOYD NELSON
JOE CARDWELL
L. A. HARNISH
KENNETH FRICK
MARVIN FARLEY

CALIFORNIA
PLANTING COTTON SEED DISTRIBUTORS
2201 F STREET
BAKERSFIELD, CALIFORNIA
TELEPHONE FAIRVIEW 4-6538

MANAGER-SECRETARY-TREASURER
L. B. NOURSE

August 24, 1957

Dear Larry:

The following is a list of the samples given to John Turner for analysis for Angular Leaf Spot:

#13	Huron Area	Producers Cotton Oil Co.	Calflax Co.-Murray
14	"	" " "	Tom Hansen
15	Five Points	" " "	Calflax Co.-Five Points Ranch
16	"	" " "	Frank C. Diener
#17	Madera Area	Madera Co-op.	Leslie Markarian
#18	Five Points Area	San Joaquin Cotton Oil Co.	Sandell, Inc.
19	" "	" " "	Raymond Thomas, Inc.
20	Huron Area	" " "	Ramon Chavarria
21	" "	" " "	Giffen, Inc.

The above are taken from duplicates of the official samples of the 1956 seed, are fuzzy and are untreated.

Given to Dick Garber - Harlan at Davis

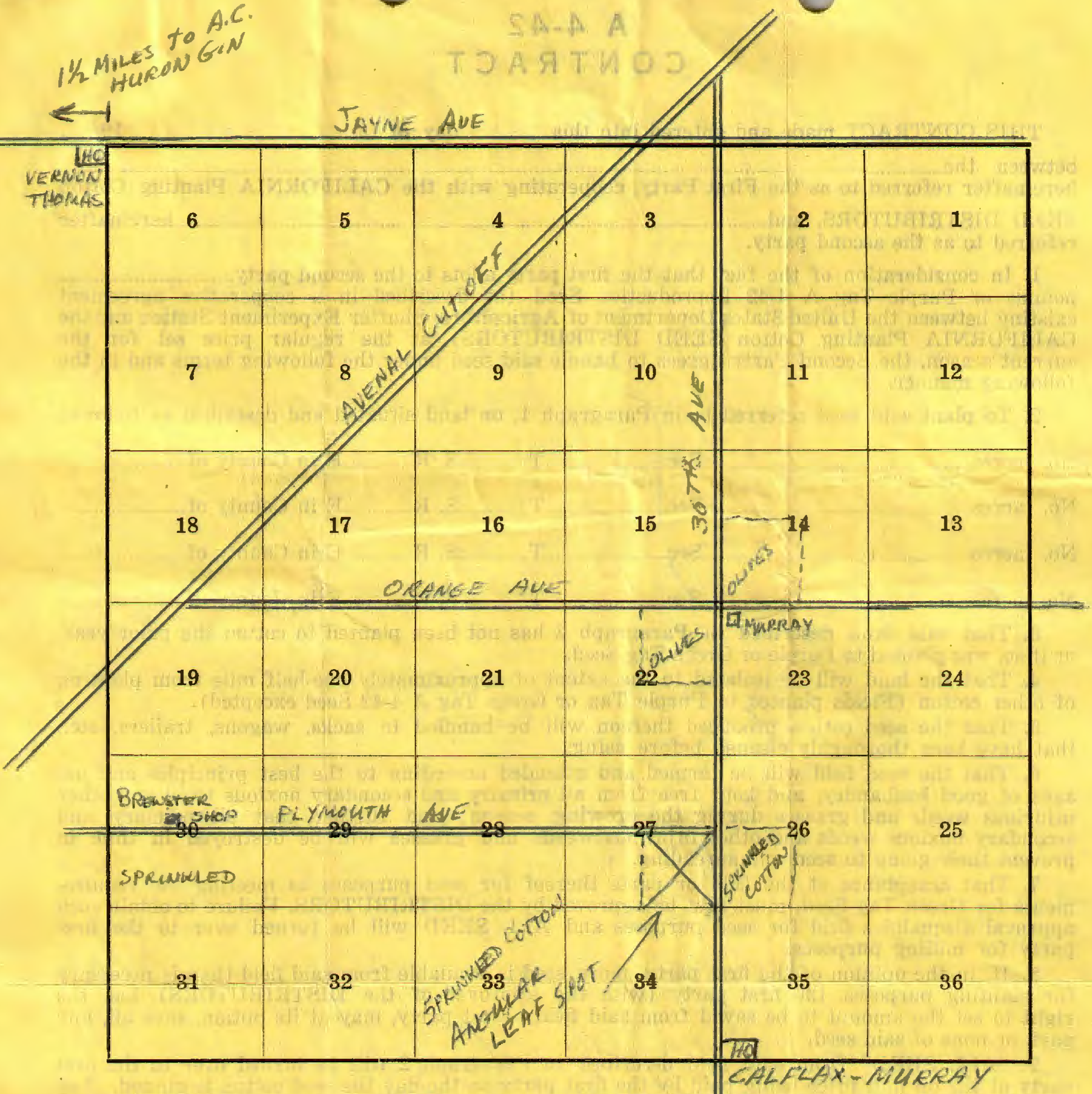
Yours truly,

Charlie

From Bakersfield

1. R Pfeiffer — Wheeler Ridge
2. R A Hildebrand — "
3. Parker & Garber — Maricopa
4. Bernard Bros — "
5. O W Houston — Belridge
6. Sycamore Farms — Arvin
7. Derby Farms — Arvin
8. J Q Boswell — Corcoran
9. E A Home — Hanford
10. Ted Fisher — Tulare
11. R S Mc Coy — Semi Tropic

12 CR medal — Semi Tropic



TOWNSHIP................, RANGE................, COUNTY OF................

GROWER OR GIN MANAGER PLEASE NOTE: Locate acreage as described on contract on above plot map. Please fill in with any landmarks, highways, etc. which would assist field inspectors in locating respective fields.

Leaf Spot
Brewster
Faulk
Pullman Murray Land
Anderson Land Comp.
Niesen

Angular Leaf Spot
1957

[Aug] 22 Met McCutcheon (Fm Ad) + Claude Bridges (Ag Comm) at Hanford with Turner, Hunt, Person and Cleary.
Visited cotton fields south of Hanford on east + west side of 30th Ave + north – South of Plymouth Ave near Murray.

The following fields are infected –
Brewster (Producer)
Faulk
Mulligan (Murray Land)
Producer West Camp ?
Niesen (San Joaquin)
Took treated seed from part of each planted this spring in land now infected
Called Stout, Pathologist State Dept + they will run tests on seed as has done in 1954.

Aug 23 Visited fields of Albert Hunt on Edison Road + Panama Lane which have infection –
Mainly will start checking fields Monday the 26th

Turner will plant seed under infected rows – try + raise some seedling plants + see if they become infected + determine susceptibility.

Larry:

Add these to the Angular Leaf Spot sample List: —

#23 Producers Cotton Oil Co
Treated + Del (Panogen)
San Joaquin Valley Area
Green Tag

#24 Carruthers Co-op
Treated + Del (Panogen)
Carruthers Area
Green Tag

Larry:

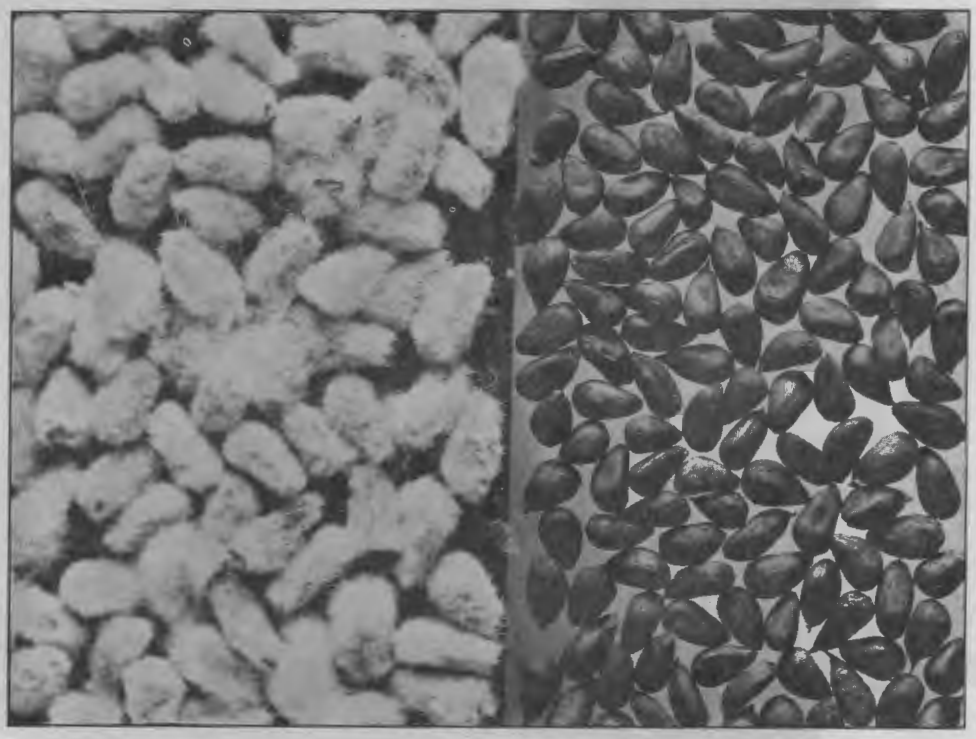
Add this to the list I already sent you on Angular Leaf Spot Samples -

#22 Carruthers Area
Carruthers Co-op.
W. O. Freeman + Son

Charlie

SULPHURIC ACID
DELINTED COTTONSEED FOR PLANTING

PROCESSED UNDER BROWN-STREETS PATENTS



Machine-Cleaned Planting Seed **Same Seed Delinted with Sulphuric Acid**

Destroys All External Seed-Carried Disease Germs
Increases Lint Yield

Germinates Three to Ten Days Ahead of Fuzzy Seed

Saving in Seed Alone More Than Repays Cost of Treatment.

A Very Definite Step Forward in the Agriculture of Cotton

•●•

~~Your Nearest Plant Is Operated by~~

GUY T. SLAUGHTER & CO.
24 CALIFORNIA ST.
SAN FRANCISCO, CALIFORNIA

Representing ~~Licensee of~~

CHEMICAL SEED TREATING AND DELINTING CORPORATION

2116 E. 3rd St. — Tucson, Arizona

CERTIFIED GROWERS OF STATE CERTIFIED ACALA COTTONSEED

SARTARTIA PLANTATION

D. C. BUCHANAN, Manager

Sugar Land, Texas, August 15, 1936.

Chemical Seed Treating and Delinting Corporation,
2116 East Third Street,
Tucson, Ariz.

Gentlemen:

This will acknowledge the receipt of your letter of Aug. 10th in which you request an account of my experience in using cotton seed for planting which has been delinted by the Brown-Streets process.

In reply thereto I am pleased to submit the following:

We plant approximately 800 acres of cotton.

We have used cotton seed delinted by the Brown-Streets process exclusively for the past six years.

We plant eight pounds of this seed per acre.

For five of these six years we did not spend a single penny for chopping. One year we had to do some replanting and then it was necessary to chop a small portion of our fields. This chopping amounted to $75.00 and this sum represents our total chopping expense for the entire six years.

We have never had any disease in our fields.

We find that our cotton sprouts and is out of the ground from three to seven days ahead of fuzzy seed and that the plants are healthier than surrounding cotton.

Our lint yield is the best in this district. In my opinion cotton from delinted seed yields at least ten per cent more lint than does cotton from fuzzy seed.

In conclusion I will say that I consider that your process of treating cotton seed represents a very definite step forward in the agriculture of cotton, and I shall never plant fuzzy seed when acid delinted seed is available.

Please feel free to use this letter for any purpose you wish.

Yours very truly,

(Signed) D. C. BUCHANAN, Mgr. Sartartia Plantation.

Sartartia is among the finest and most progressive of Texas plantations. Is not the above letter, covering SIX YEARS EXPERIENCE, proof positive of the tremendous superiority of delinted seed over fuzzy seed?

•●•

MIDVALE FARM CO.

Tucson, Arizona

September 11th, 1936

Chemical Seed Treating & Delinting Corporation
Tucson, Arizona.

Gentlemen:

I wish to state that I have used acid delinted cotton seed delinted by your process with the best of results.

The American Egyptian long staple cotton is subject to "black arm" unless the seed are treated by your chemical process. I would not plant untreated seed.

I find germination of treated seed to be very much better and less seed required.

Yours very truly,

E. C. STEVENS, Manager.

PROOFS OF INCREASE IN YIELD

44th Annual Report—1931

SOUTH CAROLINA EXPERIMENT STATION

Clemson College, South Carolina

PAGE 93, PARAGRAPH 2, LINE 15, says: "Seed delinted with acid gave an increase in stand of 37.0 per cent over untreated seed."

Bulletin 225—1926

SOUTH CAROLINA EXPERIMENT STATION

Clemson College, South Carolina

PAGE 30, PARAGRAPH 6, SUMMARY: "Seed delinted with sulphuric acid gave earlier stands and greater yields than were obtained from any other seed treatment."

The following data from the same publication gives the yields secured from these plots:

TABLE 2.—YEARLY AND AVERAGE YIELDS WITH GAIN OR LOSS FROM METHODS OF SEED TREATMENT

Treatment	Yields in Pounds of Seed Cotton				
	1923	1924	1925	Av.	Av. Gain or Loss
Normal seed	1336	1443	1614	1531	.....
Delinted with acid	1665	1662	1708	1678	+157
Delinted with machine	1457	1643	1712	1604	+ 73

TABLE 3.—AVERAGE YIELD OF SEED COTTON PER ACRE SECURED IN SEED TREATMENT TEST, CLEMSON COLLEGE

Treatment	4-Year Average
Untreated seed	875
Acid delinted	1004
Oil mill delinted	868

43rd Annual Report—1930

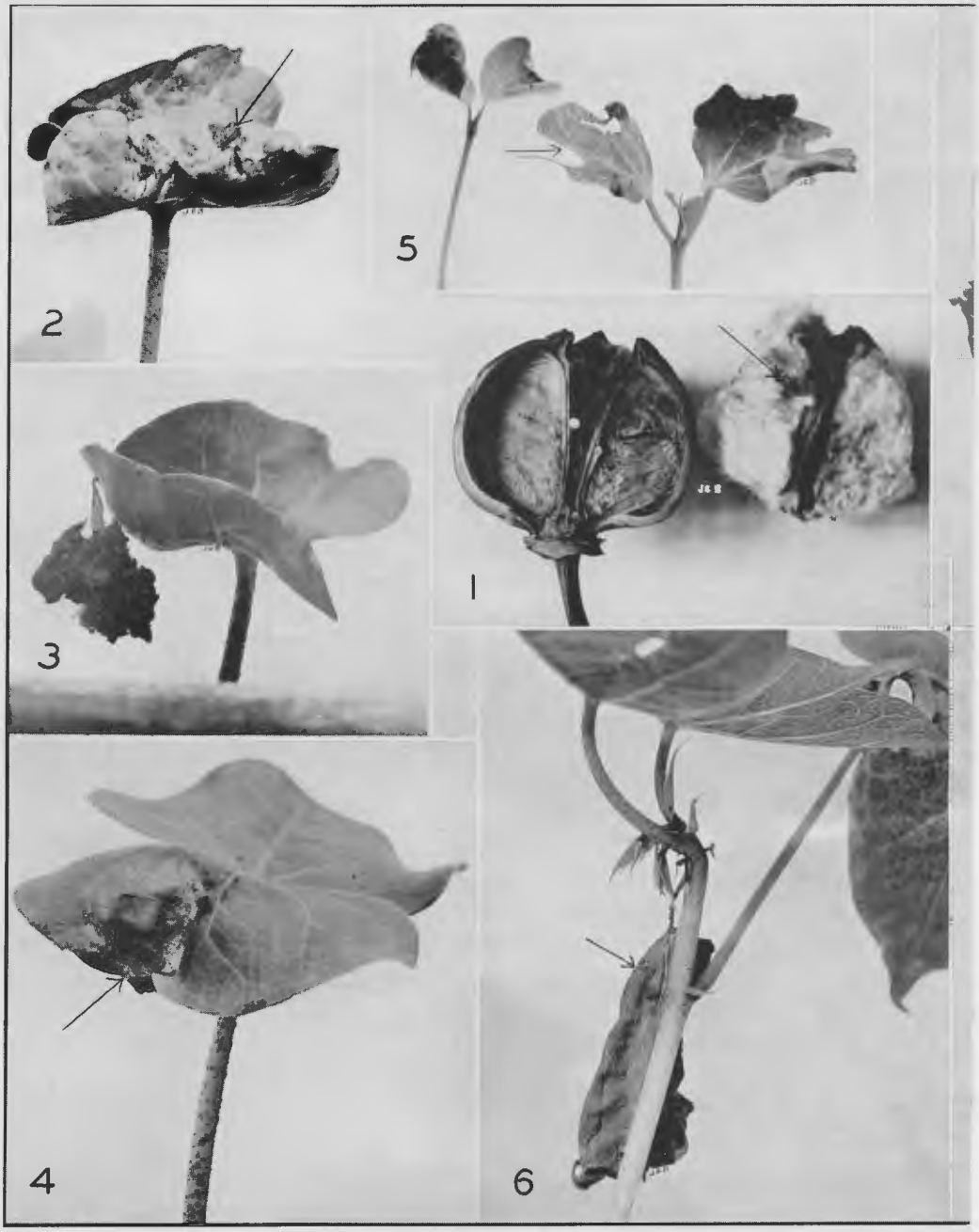
SOUTH CAROLINA EXPERIMENT STATION

Clemson College, South Carolina

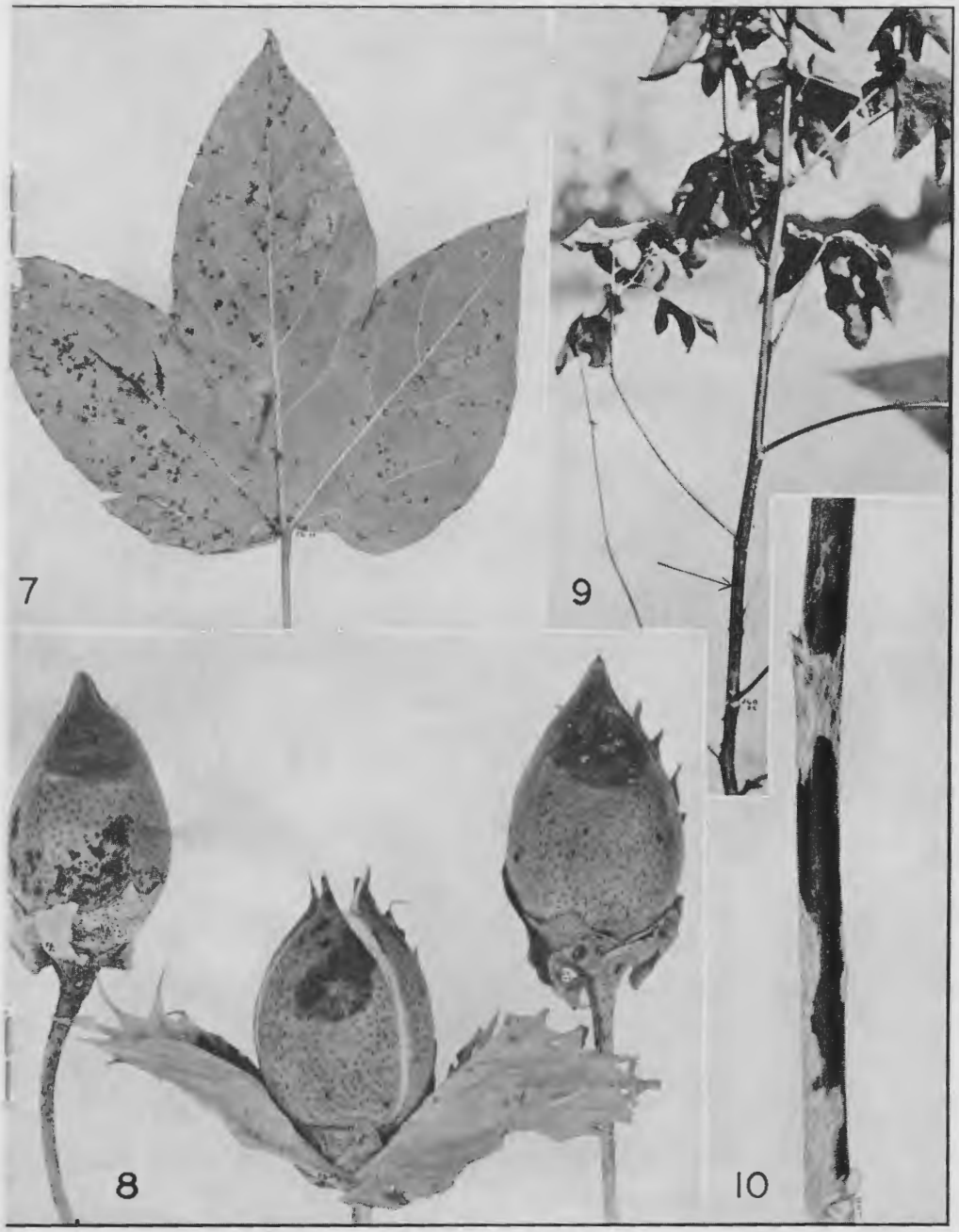
PAGE 103: "Planting made with acid-delinted seed had 77,100 plants per acre, on May 13th; on same date machine-delinted seed had 57,789 plants per acre. Untreated seed had 43,657, and 45,157 when treated with Ceresan. Seven other dusts in addition to Ceresan were used on normal seed with no increase in stand."

From "PHYTOPATHOLOGY," VOLUME 25, PAGE 970, we quote: "Acid delinting of seed increased the average stand 50% and the average yield 8.5% as compared to natural, linted seed."

ANGULAR LEAF SPOT ON COTTON FR



(1) Diseased cotton boll showing staining of lint by bacteria causing angular leaf spot. (2) Lesions on seed leaves of day-old cotton seedling. (3) Infected seed coat and soil clinging to seed leaf. (4) Infected seed coat adhering to seed leaf. (5) Seedlings with leaves torn and infected. (6) Young plant showing leaf killed by angular leaf spot,



and beginning of black arm on growing tip. (7) Angular leaf spot lesions on leaf of Pima cotton. (8) Lesions on cotton bolls, center boll opening prematurely. (9) Black arm lesions on stalk and branches. (10) Detail of black arm lesion of cotton stalk.

PROOFS OF DISEASE CONTROL

Bulletin No. 105—1933

UNIVERSITY OF ARIZONA

Tucson, Arizona

PAGES 384 AND 385: "In the attempt to find an effective disinfectant for cotton seed, concentrated sulphuric acid is the most satisfactory. It dissolves completely the lint on the seed coat and kills all germs and spores clinging to the surface of the seed without injuring the embryo cotton plant inside the seed."

PAGE 386: "A test field was planted with treated seed which showed only .8 per cent of plants infested with angular leaf spot as compared to 90.5 per cent of infected plants in the untreated field.

"It is quite possible that if all cotton seed planted in the state were delinted with sulphuric acid, in 2 or 3 years angular leaf spot would be eliminated."

Bulletin No. 173—1921

UNIVERSITY OF ARKANSAS

Agricultural Experiment Station

Fayetteville, Arkansas

PAGE 1, PARAGRAPH 2: "The toll of cotton diseases in Arkansas during the time that fairly reliable records have been kept has been from 10 to 30 per cent of the crop.

"In 1919 the total loss to the state from cotton diseases was not less than fifteen million dollars."

PAGE 6: "The disease which is most generally distributed in the state, and which in some seasons does more damage than any other, is angular leaf spot."

PAGE 7, PARAGRAPH 2, says disease may be controlled by delinting the cotton seed with sulphuric acid. Experiments were carried on for two seasons at Fayetteville and Burdette, Arkansas.

PAGE 8, PARAGRAPH 2: "The infection never spread to the disease-free rows and the healthy plants kept all their leaves until they were killed by frost."

Wish we could print the whole bulletin.

Information Sheet 48—July, 1934

MISSISSIPPI AGRICULTURAL EXPERIMENT STATION

State College, Mississippi

ANGULAR LEAF SPOT ON COTTON

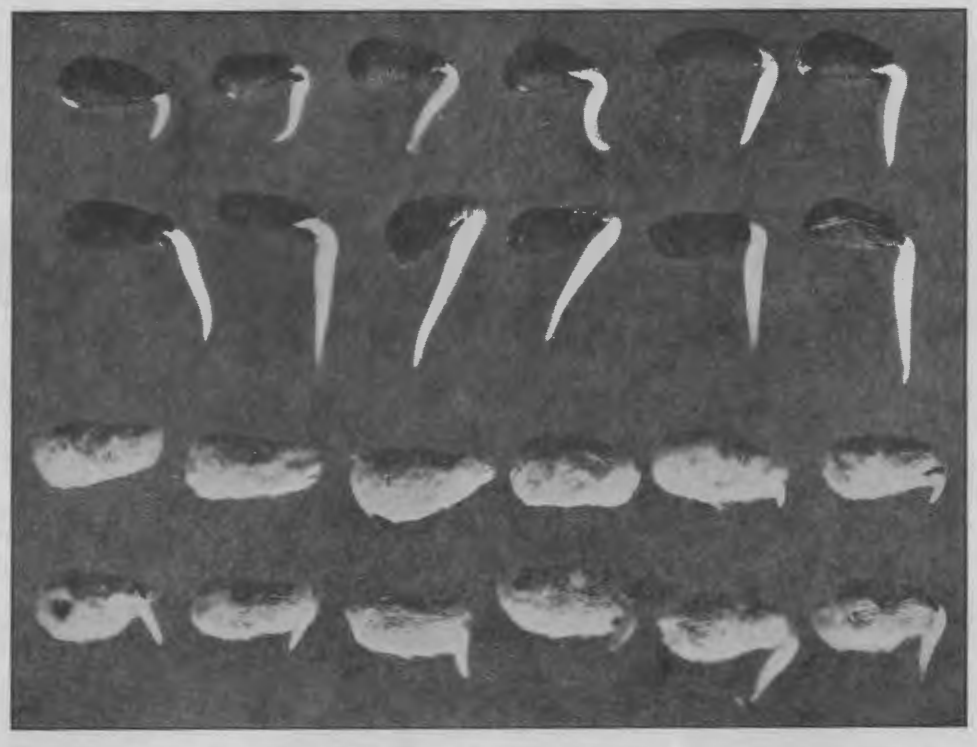
By L. E. MILES. Plant Pathologist

This trouble is very widely spread in the state and is causing great uneasiness of mind to a very large number of growers. It is a very common disease of cotton and is present, year after year, in practically every field in the state. This heavy reduction of leaf surface interferes with food-manufacturing processes in the plant and as a consequence a severe dropping of squares and young bolls may result. Frequently, other fungi, as the anthracnose and diplodia boll rot organisms, get into the lesions and outgrow the angular leaf spot organism, causing a more rapid and complete rot of bolls than would otherwise occur. Since, however, the disease is seed-borne, they should be delinted with sulphuric acid.

PROOFS OF FASTER GERMINATION

Mississippi Agricultural Experiment Station Information Sheet 53

"With no consideration of disease control, delinted seeds germinate more quickly and give a better stand with a smaller amount of seed than undelinted seed."



Photograph shows that sulphuric acid delinted seed takes up water faster and so germinates more rapidly. Other advantages include better seed classification, simplified planting practices, healthier stands and increased yields." —*From "Chemical Industries," Feb., 1936.*

The Agronomy Division

SOUTH CAROLINA EXPERIMENT STATION

Clemson College, South Carolina

DELINTING COTTON SEED WITH SULPHURIC ACID

The matter of securing an early stand of cotton is of great importance, and many farmers are very much interested in how they may hasten germination by delinting planting seed with sulphuric acid. The Agronomy Division of Clemson College does not recommend this practice generally, not because of unsatisfactory results secured, but because the majority of farmers are not prepared to so treat their seed.

Results secured at both Clemson College and Florence show very clearly the benefits which may be expected to result from such treatment.

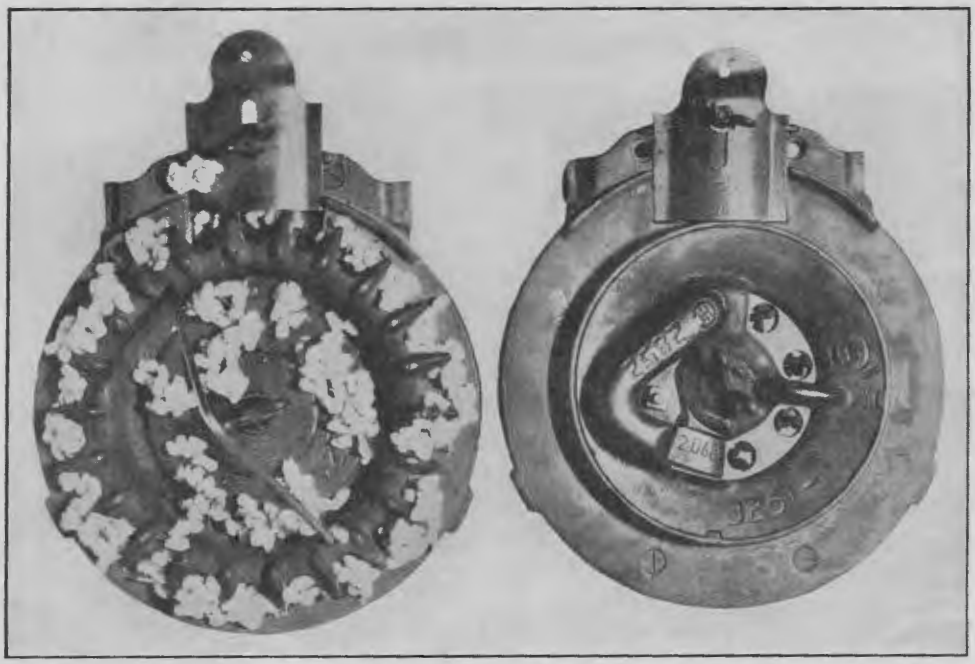
The following table quoted from South Carolina Experiment Station Bulletin 225 gives the time in days required to secure a stand at Florence where different methods of treating the seed were employed just prior to planting.

TABLE 1.—TIME IN DAYS TO OBTAIN A STAND FROM SEED TREATMENTS.

Treatment	1923	1924	1925
Delinted in acid	12 + 6	8 + 5	7 + 19
Delinted with machine	18	11 + 2	23 + 3
Not delinted	18	13	26

It will be noted that the time required to secure a good stand has varied for different years. This is due largely to the temperature and the moisture content of the soil at planting time.

EASE OF HANDLING



Left—Fuzzy cotton seed on plate at bottom of hopper. Note how it sticks together. Right—Cotton seed delinted with concentrated sulphuric acid with the Brown-Streets machine; plate adapted to smooth seed; seed as easily planted as peas or beans.
From "Cotton and Cotton Oil Press," Jan. 11, 1936.

THE GENERAL ADVANTAGES OF DELINTING COTTON SEED

The advantage of delinting cotton seed for planting purposes is indicated by experiments which have been conducted at various places. Delinting results in quicker germination, a more vigorous seedling, and therefore an earlier fruiting plant. Delinted seed gives a stand from two days to a week earlier than does untreated seed. **Careful observations made on representative plants from delinted and undelinted seed during the past several years show that the plants from the delinted seed grow off more quickly, begin blooming first, and continue fruiting more rapidly** during the early season. This is a very important factor in cotton production, for it is well known that the early season blooms have a much better chance of producing open bolls than do those appearing later in the season.

As the importance of earliness can hardly be overestimated in the production of cotton under boll weevil conditions, any practice which will result in greater earliness is to be desired and delinting is rapidly gaining in favor.

THE PROGRESSIVE FARMER AND SOUTHERN RURALIST.
Memphis, Tenn., Birmingham, Ala., Dallas, Texas,
Raleigh, N. C., Louisville, Ky., Atlanta, Ga.

BROWN-STREETS PROCESS
SULPHURIC ACID DELINTED COTTON SEED

1. SAVES PLANTS—Prevents Angular Leaf Spot (Black Arm) which kills seedlings and injures mature plants.
2. SAVES SEEDS—Gives better germination. Half the usual amount of seed gives perfect stand.
3. SAVES TIME—Gives quicker germination by 2 to 10 days depending upon temperature.
4. SAVES TROUBLE—Easier to plant. Does not clog planter. Seed spaced accurately by corn plates, giving uniform stand. Reduced labor chopping.
5. SAVES MONEY—Cost of treatment is recovered in saving of seed alone.
6. SAVES REPLANTING—Comes up before soil has time to bake, crust or dry out.

BECAUSE

Sulphuric acid delinting destroys all disease germs on surface of seed, and allows seed coat to absorb water twice as fast.

DELINTING DOES NOT

Make good farming unnecessary. Careful preparations of seed bed, timely planting, cultivation and irrigation (where necessary) are just as necessary as ever.

Delinted Seed Should Not Be Planted Over 2 Inches Deep.

WATCH YOUR PLANTER DEPTH.

Haron, [illegible] [illegible]

Carberry - 1 [illegible] [illegible] year
[illegible] year
1 - first year [illegible] in cotton.

Giffen - Level - [illegible] below Haron

Sherman Thomas.

Five pts [illegible]
3 mi north - 2 mi [illegible] of [illegible]
bad infestation road +
Demand Farm 1 mi north of
[illegible]
no cotton for at least
4 years or more

Peck - Yearout Canter
no cotton for 4 years.
bad infestation

Lineman - [illegible]
[illegible] Hammonds [illegible]
1 field [illegible] cotton
1 field no previous cotton

Bruster -

Tulare Field -

not bacterial Blight.
secondary disease in
Tulare County -

[illegible] + Davis.
Alternaria
prevalent in Tulare -
photo secondary -

Lineman
Mid way north 33
Yearout - bad
Peck [illegible]

2 acres on Giffen
[illegible] 33 north of Calgro 15 mi
Walt Fenelec - bad -
10 [illegible] west of 5 pts.

Sherman Thomas (not much damage)
spotted Pyrple [illegible]

Giffen 5 pts [illegible]

9/13/57

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tton

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the character ob-
boll weevil at-
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e College pub-

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Wannamaker,
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HAIRY COTTON—Here is a comparison of "hairiness" of cotton bolls from a standard variety, left, and an experimental line. In tests, this hairness has resulted in less boll weevil damage.

Angular Leaf Spot Reduces Yield By 25 Per Cent, Agent Reports

CORPUS CHRISTI, Texas, Sept. 7—(Spl.)—Bacterial (light

rot" when it attacks bolls and

DISTRIBUTORS OF CALIFORNIA A 4-42 ACALA PLANTING SEED

DIRECTORS:
H. L. POMEROY
R. H. OESTING
FLOYD NELSON
JOE CARDWELL
L. A. HARNISH
KENNETH FRICK
MARVIN FARLEY

CALIFORNIA
PLANTING COTTON SEED DISTRIBUTORS
2201 F STREET
BAKERSFIELD, CALIFORNIA
TELEPHONE FAIRVIEW 4-6538

MANAGER-SECRETARY-TREASURER
L. B. NOURSE

August 29, 1957

Dear Larry:

The following is a list of fuzzy seed samples taken for study of Angular Leaf Spot:

# 9	Madera Area	Golden State Cot. Oil Co.	Ralph Webster
#10	Kerman Area	Kerman Co-op.	Henry Overgaard
#11	Five Points Area	H&H Cotton Co.	Jack Harris, Inc.
#12	Firebaugh Area	Firebaugh Ginning Co.	The Garin Co.
#13	Huron Area	San Joaquin Cotton Oil Co.	Airway Farms, Inc.
#14	Huron Area	Producers Cotton Oil Co.	R. S. Barlow
#15	Los Banos Area	San Joaquin Cot. Oil Co.	Lindemann Farms
#16	Coalinga Area	Producers Cotton Oil Co.	Griffin & Griffin

Yours truly,

Charlie

August 29, 1957

COPY

Dear Larry:

The following is a list of fuzzy seed samples taken for study of Angular Leaf Spot:

# 9	Madera Area	Golden State Cot. Oil Co.	Ralph Webster
#10	Kerman Area	Kerman Co-op.	Henry Overgaard
#11	Five Points Area	H&H Cotton Co.	Jack Harris, Inc.
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#15	Los Banos Area	San Joaquin Cot. Oil Co.	Lindemann Farms
#16	Coalinga Area	Producers Cotton Oil Co.	Griffin & Griffin

Yours truly,

Charlie

COPY

August 26, 1957

Mr. Charles M. Cleary
2690 Third Ave.
Merced, California

Dear Charlie:

Attached you will find data we sent out on Angular Leaf Spot in case you do not have it. This was in 1954 but it still applies.

When we get a little more data on this year's crop, we will put out additional material.

At one time we permitted gins to save seed up to the time they received sprinklered cotton after a summer cleanup, but I think we had better not say anything about this and just say we save no seed at a gin where sprinklered cotton is processed until we know more.

Yours truly,

L. B. Nourse, Manager

LBN:ps
Enc.

MERCED COUNTY
DEPARTMENT OF AGRICULTURE
OFFICE: 740 WEST TWENTY-SECOND STREET
TELEPHONE RANDOLPH 2-7411 - EX. 204
MERCED, CALIFORNIA

E. A. DANISON
AGRICULTURAL COMMISSIONER
SEALER OF WEIGHTS AND MEASURES

JAMES T. REED
ASSISTANT AGRICULTURAL COMMISSIONER

R. H. MILBOURN
DEPUTY COMMISSIONER

JACK RAHILLY
CHIEF DEPUTY SEALER

August 8, 1957

Mr. C. M. Cleary
2690 3rd Avenue
Merced, California

Dear Sir:

There is no sprinkled cotton acreage in Merced County.

Very truly yours,

E. A. Danison

E. A. Danison
Agricultural Commissioner

EAD:dhl

August 23, 1957

COPY

Dr. Gilbert L. Stout, Chief
Bureau of Plant Pathology
State Department of Agriculture
Sacramento 14, California

Dear Mr. Stout:

Following our phone conversation of the 22nd regarding Angular Leaf Spot, am attaching a copy of a letter from C. C. Weigle, which will be a starting point.

Since 1953 some checking has been done by the Agricultural Commission each year except 1955, and we thought the spot was better, but so far this year it looks rather serious.

A survey will be made this year by the Commission, but as of today the only one that has done anything is Haupt of Kings County where some seven fields are infected in varying degrees. Some surveys will start Monday.

Today a Farm Advisor found two fields in Kern County, north of the Weed Patch.

Am forwarding you a sample of seed, mechanically delinted and treated with Ceresan. This is from a part sack of seed (the balance of which was planted this spring in the now infected acreage) which I would like to have tested to see if the seed is clean and free of the Leaf Spot organism.

John Turner suggests that we should use the fuzzy seed as Ceresan is supposed to kill any surface contamination on the seed. If you agree with this, and can handle more than the one sample above mentioned, we can furnish the seed. Should such a sample be from an individual ranch or a composite sample of several growers.

I will be in Sacramento Friday, the 30th, and could bring any additional sample at that time, if they can be handled, and would like to talk with you or your assistant in the forenoon.

One point I forgot to mention. I handled this seed after we had handled leaves and bolls that were infected in the field. If you think this might have contaminated this seed I can send up some more that has not been handled in this way.

There is a copy of this letter in the box of seed. If this is not sufficient I can send more.

Yours respectfully,

lbn/mb
encl.

L. B. Nourse, Manager

COPY

BUREAU OF PLANT PATHOLOGY

STATE OF CALIFORNIA
Department of Agriculture
SACRAMENTO 14

January 26, 1954

Mr. L. B. Nourse, Manager
California Planting Cotton
Seed Distributors
2801 F Street
Bakersfield, California

Dear Mr. Nourse:

On November 10, 1953, we received a sample of cotton seed sent by Mr. Ray Hoekstra of your organization. The specimen was labeled "B.B.I." and the letter of transmittal requested examination for the presence of the bacterial blight organism.

This letter is to confirm information given to you by Mr. G. L. Stout regarding this specimen during a phone conversation on December 28, 1953.

Examination for bacterial pathogens in the seed received was directed along several lines. The entire lot (approximately 1½ pounds) was examined grossly for evidence of abnormal or discolored seeds. Eight slightly discolored seeds were found and picked out for further examination. Two flats of seeds were planted in the greenhouse and held for examination of the developing plants. At the end of three weeks the plants had developed two leaves in addition to the cotyledons. None of the plants showed any evidence of bacterial infection.

The eight discolored seeds were at this time macerated in sterile water. A portion of the resulting suspension was cultured on nutrient medium and a portion was atomized over one of the flats of young plants in the greenhouse after mechanically injuring some of the leaves. No bacteria grew in the cultures and none of the atomized plants developed bacterial infection.

C 3588

About one half pound of the remaining seed was macerated with sterile water in a mechanical homogenizer. A portion of this suspension was cultured and also inoculated into mechanically injured plants in the second flat. The cultures were negative for bacterial growth and none of the plants developed bacterial infection.

The conclusions are that no evidence of the bacterial blight organism was found in the sample of seed when examined as described above.

Very truly yours,

C. G. Wei
Assoc.

CGW:dsc

August 26, 1957

COPY

Mr. John T. Pressley, Acting Head
Section of Pathology
Cotton & Cordage Fiber Branch
U. S. Department of Agriculture
Beltsville, Maryland

Dear John:

We are having what seems to be an unusual amount of Angular Leaf Spot so far this year and the survey which the Agricultural Commissioners have agreed to carry on has just begun.

John and I were in the Huron district southwest of Fresno Thursday and seven or eight fields are heavily infested and, upon our return to Bakersfield, one of the Farm Advisors had stumbled on to two in the vicinity of the Weed Patch.

John is returning to the Huron district Monday and they will plant some seed under the plants and try to see whether the seedlings will become infected for their breeding work.

From our last tests of our planting seed, no infection showed up. We are now sending to Gilbert Stout some of the seed planted this spring on one of the fields which now shows Angular Leaf Spot to have it tested. We are also sending fuzzy samples of individual grower's seed that was planted this spring to Dick Garber at Davis for testing.

Being one of the laymen who know little about Pathology, I have a thought which may be rather silly. If our planting seed shows no infection and the disease does not show up in row irrigated cotton, isn't it possible that this bacteria is present in some form other than in the seed and lays dormant but develops under certain favorable conditions. The doctors tell us that everyone has T.B. germs in their system but it only develops fully when conditions are right.

John tells me you will be in our country soon and it will be a pleasure as always to have a visit with you.

Yours truly,

L. B. Nourse, Manager

LBN:ps
cc: John Turner

COPY

August 29, 1957

Dr. Gilbert L. Stout, Chief
Bureau of Plant Pathology
State Department of Agriculture
Sacramento 14, California

Dear Dr. Stout:

Am delivering 17 samples of cotton planting seed that was planted this spring. List is attached. All samples are fuzzy except #17, which is a duplicate of the mechanical delinted and treated one sent to you on August 23rd. The original sample was handled by me after being in an infected field.

The reason for the fuzzy samples is that John Turner, Director of the Shafter Experimental Station, figured that we should test some fuzzy seed since Ceresan and like treatments are supposed to remove any surface infection.

The industry will appreciate it if you can test these samples for Angular Leaf Spot.

Yours truly,

L. B. Nourse, Manager

LBN:ps
Att.

COPY

TO BE TESTED FOR ANGULAR LEAF SPOT INFECTION

1. Pomeroy & Jewett	Arvin
2. Bob Cauzza	Buttonwillow
3. E. O. Mitchell	Weed Patch
4. Menno Siemen	Wasco
5. R. M. Parks	Tule River
6. O. D. Handel	Shafter
7. Kennedy & Stephens	McFarland
8. Roy Brinkley	Woodville
9. Ralph Webster	Madera
10. Henry Overgaard	Kerman
11. Jack Harris	Five Points
12. Garin Company	Firebaugh
13. Airway Farms	Huron
14. R. F. Barlow	Huron
15. Linderman Farms	Los Banos
16. Griffen & Griffen	Coalinga
17. L. Niesen (Duplicate sample of mechanical delinted & treated seed sent to you on August 23, 1957.)	Murray

Date. Oct. 5, 1954

Conversation with Joe Irino: Re: Moving of his cotton to Commanche rather than Tyson gin as he was now doing.

Said he was just getting started and that he was short on help and had only taken 22 bales into the Tyson gin. That at the present time the cost of acquiring ~~and~~ an extra man and another truck would equalize any profit that he might realize from our seed settlement (I reminded him that he received $2044 from last years seed production) He suggested that if we wanted the

seed desperately that Producers provide trailers and labor to move the seed to the gin. I told Irino that we didnt have the authority to make such an offer and if we did it would set a bad precedent - something that wasn't necessary for all the other seed growers in the area that had agreed to and were taking their seed to Commanche Gin.

The conversation ended with Irino agreeing to possibly taking his Cotton to Commanche once he had a full crew and was picking at full speed.

This conversation related to Roy Merriam.

8/2-8/57

Turner - visited Sullivan project at Murray. Agalea Reef Spur found seed that has planted Lot 26 35004 - Tag # 37017

planted seed under infected plants + ... seedlings became infected -

Office Memorandum

TO :

FROM :

SUBJECT:

DATE:

10-15 % INFESTATION

160 AC SE 1/4 S 27 T21 R18 } - CHARLIE CALLED - NIESON
160 AC SW 1/4 S 26 T21 R18

300 AC S 1/2 S 29 T21 R18 - ROBERT SULLIVAN
15% INFESTATION MURRAY LAND CO.

ANGULAR LEAF SPOT SURVEY

1957

ANGULAR LEAF SPOT LOCATIONS
Kings Cpunty

Sullivan-Murray Land Company		Section 29	T21	R18
Fritz Faulk		21	21	18
Neisen		26	21	18
		27	20	18
Brewster, Gerald		30	21	18
Mike Chavarria		33	21	18
Unger Farms		35	21	18
	and either	25 or		
		36 or both	21	18

Angular Leaf Spot

Tulare County - 1957

Sam Kerner 40 acres on El Monte Way West of Dinuba NW¼ S13 T16 R23

S*K Ranch (Dick Shannon) 160 acres corner Ave. 312 and Rd. 80 SE¼ S17 T18 R24.

Clyd M. Carlisle 160 acrd west of Ducor S29 T23 R27

Roberts Farms 80 acres 5 miles west of Ducor S23 T23 R26

ANGULAR LEAF SPOT REPORT FOR 1957

RANCH	LOCATION	AMOUNT OF INFECTION	GINNING COMPANY
Mike Linnaman	Sec. 28 15/12	Infected	Producers Cotton Oil (Sunset Gin)
R. B. Clark	Sec. 6 14/13	None	Producers Cotton Oil (Sunset Gin)
Employees Enterprise	Sec. 18 14/13	None	San Joaquin Cotton Oil (Fairfax Gin)
" "	Sec. 25 14/13	None	"
" "	Sec. 26 14/13	None	"
" "	Sec. 29 14/13	None	"
" "	Sec 28 14/13	None	"
" "	Sec. 21 14/13	None	"
" "	Sec. 16 14/13	None	"
" "	Sec. 18 15/13	None	Cheney Gin
" "	Sec. 4 15/13	None	"
" "	Sec. 8 15/13	None	"
" "	Sec. 10 15/13	None	"
" "	Sec. 14 15/13	None	Adams Gin
" "	Sec. 15 15/13	None	"
" "	Sec. 12 15/13	None	"
" "	Sec. 27 15/13	None	"
" "	Sec. 26 15/13	None	"
" "	Sec. 24 15/13	None	"
" "	Sec. 29 15/14	None	"
" "	Sec. 30 15/14	None	"
" "	Sec. 36 15/13	None	"
" "	Sec. 1 16/13	None	"
" "	Sec. 31 15/14	None	"
Looney Ranch	Sec. 22 15/14	None	"

ANGULAR LEAF SPOT REPORT FOR 1967 (con't)

Frank Coit	Sec. 7 15/14	None	Coit Gin
"	Sec. 18 15/14	None	"
"	Sec. 19 15/14	None	"
Orff Ranch	Sec. 31 15/15	None	S.J.C.C. (Hendota Gin)
Sumner Peek	Sec. 1 16/14	None	" "
"	Sec. 12 16	None	" "
"	Sec. 36 15/14	None	" "
"	Sec. 18 16/15	Infected	" "
Deal Ranch	Sec. 4 16/14	None	Producer C. O. (Adams Gin)
"	Sec. 7 16/14	None	"
"	Sec. 9 16/14	None	"
"	Sec 10 16/14	None	"
"	Sec. 17 16/14	None	"
"	Sec. 20 16/14	None	"
Russel Giffen	Sec. 24 16/14	None	S.J.C.C. (Cantua Gin)
"	Sec. 19 16/15	None	"
"	Sec. 30 16/15	None	"
"	Sec. 7 17/15	None	"
"	Sec. 18 17/15	Infected	"
"	Sec/19 17/15	None	"
"	Sec. 30 17/15	None	"
"	Sec. 31 17/15	None	"
"	Sec. 12 16/14	None	S.J.C.C. (Cantua Gin)
"	Sec. 13 17/14	None	"
"	Sec. 24 17/14	None	"
"	Sec. 25 17/14	None	"
"	Sec. 5 16/15	Infected	"
"	Sec. 6 16/ 15	Infected	"

Angular Leaf Spot Report For 1957 (con't)

Mike Giffen	Sec. 27 17/15	N one	S.J.C.O. (Canton Gin)
Five Points Farm Co.	Sec. 9 16/15	None	"
"	Sec. 14 16/15	None	Mt. Whitney Gin
"	Sec. 24 16/15	N one	"
"	Sec. 25 17/15	N one	"
"	Sec. 30 17/16	Ranch Reports	"
"	Sec. 20 16/16	8 Sec. Infested	"
"	Sec. 32 17/16	Infected	"
Jack H arris	Sec. 29 16/16	N one	H . & H. Gin Co.
"	Sec. 29 16/16	N one	"
"	Sec. 32 16/16	None	"
Tom O'N eill	Sec. 8 19/16	N one	Producers Cotton Oil(Spts. Gin)
Sherman Thomas	Sec. 6 19/17	Infected	S.J.C.O. (Butte Gin)
R. Giffin	Sec. 19 19/17	Infected	S.J.C. O.(Westhaven Gin)
"	Sec. 24 19/16	N one	"
"	Sec. 31 20/17	N one	"
"	Sec. 6 19/17	None	"
"	Sec. 31 20/17	N one	" (Eldorado Gin)
"	Sec. 5 21/17	None	"
W. W. Heath	Sec. 8 21/16	None	" (Coalinga Gin)
"	Sec. 16 21/16	None	"
"	Sec. 15 21/16	None	"
Carbury	Sec. 8 21/17	Infected	" (Huron Gin)
"	Sec. 24 21/17	Infected	"
"	Sec. 6 21/17	Infected	"
H. W. P irkle	Adams & Fig	N one	Caruthers CoOp
Irwin Harleton	Bryan & Floral	None	"
Herman Berg	Hayes & Manning	Infected	"

ANGULAR LEAF SPOT REPORT FOR 1957 (con't)

Hughes B ros.	Hayes & Manning South Side	Infected	Kingsburg Cotton Oil (Raisin City Gin)
Hughes Bros.	H ayes & Manning North Side	Infected	"
Fred Pimental	½ Mi. W. of Grantland H ome on Manning		Producers Oil Co.(Caruthers Gin)
Charles Moore	1 Mi. W. of Grantland Home On Manning		"

HOWARD T. McLEAN
AGRICULTURAL COMMISSIONER
STATE QUARANTINE GUARDIAN

TELEPHONE ORCHARD 4-4641
EXT. 219

Madera County
Department of Agriculture
221 WEST 7TH STREET
Madera, California

September 26, 1957

L. B. Nourse, Manager
California Planting Cotton Seed Distributors
2201 F. Street
Bakersfield, California

Dear Larry:

In a survey of the two sprinkler irrigated cotton plantings in Madera County we have found Angular Leaf Spot.

The following is the information you requested:

Grower # 1 Andrew Rogers, Avenue 9 at Road 33½ has 23 acres to be ginned at Producers Gin, Madera, located at 27214 Avenue 13½.

Grower # 2 Clyde Cavin, Avenue 9 and Road 33 on Northwest corner, has 80 acres to be ginned at the Golden State Gin, 22570 Avenue 12, Madera.

Very truly yours,

Howard T. McLean

Howard T. McLean
Agricultural Commissioner

HTMc:cr

ANGULAR LEAF SPOT REPORT FOR 1967

RANCH	LOCATION	AMOUNT OF INFECTION	GINNING COMPANY
Mike Linneman	Sec. 28 13/12	Infected	Producers Cotton Oil (Sunset Gin)
R. B. Clark	Sec. 6 14/13	None	Producers Cotton Oil (Sunset Gin)
Employees Enterprise	Sec. 18 14/13	None	San Joaquin Cotton Oil (Fairfax Gin)
" "	Sec. 25 14/13	None	"
" "	Sec. 36 14/13	None	"
" "	Sec. 29 14/13	None	"
" "	Sec 28 14/13	None	"
" "	Sec. 21 14/13	None	"
" "	Sec. 16 14/13	None	"
" "	Sec. 18 15/13	None	Cheney Gin
" "	Sec. 4 15/13	None	"
" "	Sec. 8 15/13	None	"
" "	Sec. 10 15/13	None	"
" "	Sec. 14 15/13	None	Adams Gin
" "	Sec. 13 15/13	None	"
" "	Sec. 12 15/13	None	"
" "	Sec. 27 15/13	None	"
" "	Sec. 26 15/13	None	"
" "	Sec. 24 15/13	None	"
" "	Sec. 29 15/14	None	"
" "	Sec. 30 15/14	None	"
" "	Sec. 36 15/13	None	"
" "	Sec. 1 16/13	None	"
" "	Sec. 31 15/14	None	"
Leoney Ranch	Sec. 22 15/14	None	"

Frank Coit	Sec. 7 15/14	None	Coit Gin
"	Sec. 16 15/14	None	"
"	Sec. 19 15/14	None	"
Orff Ranch	Sec. 31 15/15	None	S.J.C.O. (Hendota Gin)
Sumner Peck	Sec. 1 16/14	None	" "
"	Sec. 12 16	None	" "
"	Sec. 36 16/14	None	" "
"	Sec. 18 16/15	Infected	" "
Deal Ranch	Sec. 4 16/14	None	Producer C. O. (Adams Gin)
"	Sec. 7 16/14	None	"
"	Sec. 9 16/14	None	"
"	Sec 10 16/14	None	"
"	Sec. 17 16/14	None	"
"	Sec. 20 16/14	None	"
Russel Giffen	Sec. 24 16/14	None	S.J.C.O. (Cantua Gin)
"	Sec. 19 16/15	None	"
"	Sec. 20 16/15	None	"
"	Sec. 7 17/15	None	"
"	Sec. 18 17/15	Infected	"
"	Sec/19 17/15	None	"
"	Sec. 30 17/15	None	"
"	Sec. 31 17/15	None	"
"	Sec. 12 16/14	None	S.J.C.O. (Cantua Gin)
"	Sec. 13 17/14	None	"
"	Sec. 24 17/14	None	"
"	Sec. 25 17/14	None	"
"	Sec. 5 18/15	Infected	"
"	Sec. 6 18/ 15	Infected	"

Angular Leaf Spot Report For 1967 (con't)

Mike Giffen	Sec. 27 17/15	None	S.J.C.O. (Canton Gin)
Five Points Farm Co.	Sec. 9 19/15	None	"
"	Sec. 14 19/15	None	Mt. Whitney Gin
"	Sec. 24 19/15	None	"
"	Sec. 25 17/15	None	"
"	Sec. 30 17/16	Ranch Reports	"
"	Sec. 20 18/16	8 Sec. Infested	"
"	Sec. 32 17/15	Infested	"
Jack Harris	Sec. 29 19/16	None	H. & H. Gin Co.
"	Sec. 29 19/16	None	"
"	Sec. 32 19/16	None	"
Tom O'Neill	Sec. 8 19/15	None	Producers Cotton Oil(Spto. Gin)
Sherman Thomas	Sec. 6 19/17	Infested	S.J.C.O. (Butte Gin)
R. Giffin	Sec. 19 19/17	Infested	S.J.C. O.(Westhaven Gin)
"	Sec. 24 19/16	None	"
"	Sec. 31 20/17	None	"
"	Sec. 6 19/17	None	"
"	Sec. 31 20/17	None	" (Eldorado Gin)
"	Sec. 5 21/17	None	"
W. W. Heath	Sec. 5 21/16	None	" (Conlings Gin)
"	Sec. 16 21/16	None	"
"	Sec. 15 21/16	None	"
Carbury	Sec. 5 21/17	Infested	" (Huron Gin)
"	Sec. 24 21/17	Infested	"
"	Sec. 6 21/17	Infested	"
H. W. Fricke	Adams & Fig	None	Carruthers CoOp
Irwin Harleton	Bryan & Floral	None	"
Herman Berg	Hayes & Manning	Infested	"

ANGULAR LEAF SPOT REPORT FOR 1957 (con't)

Hughes B rea.	Hayes & Manning South Side	Infected	Kingsburg Cotton Oil (Raisin City Gin)
Hughes Bros.	Hayes & Manning North Side	Infected	"
Fred Pimental	½ Mi. W. of Grantland on Manning	None	Producers Oil Co.(Caruthers Gin)
Charles Moore	1 Mi. W. of Grantland On Manning	None	"

CALIFORNIA PLANTING COTTON SEED DISTRIBUTORS
2201 F Street
Bakersfield, California

October 9, 1957

S E E D S A V I N G

Dear Member:

1. A MEMBER:

   Is any cotton grower who signs a seed contract and plants Purple Tag reproduction seed.

2. FIELD INSPECTIONS and NOTICES:

   A. MADE BY: The Distributor's staff throughout growing season.

   B. PURPOSE: To observe condition of fields as to proper growth and weedy conditions.

   C. NOTICES: 1. Written report on weed conditions in your fields. They are not written to antagonize you but are made as a service to you so that you may correct a condition before the weeds get ahead of you.

   2. The notices are delivered to your gin manager for delivery to you. If you do not receive our reports, ask your gin manager for them.

3. FINAL INSPECTIONS:

   A. PURPOSE: To either accept or reject fields for saving seed.

   B. WHEN MADE: Just prior to time of picking, to give you time enough to correct any minor weedy condition if you care to do so.

4. REASONS FOR FIELD REJECTIONS:

   A. WEEDS: Too many noxious and other weeds in fields.

   B. GENERAL APPEARANCE: Whether there is improper growth, patches of burned cotton, or any condition that might injure germination of seed.

   C. SEED SAVING: NO SEED CAN BE SAVED FROM REJECTED FIELDS.

5. SEED SAVING:

A. The total amount of seed needed for every grower in the state is figured. When this total amount has been saved, no more seed may be saved from Purple Tag fields, and the balance must be milled.

B. To reach this total, we have to save as much seed as possible as early as possible to avoid bad weather. Another reason for early seed saving is that seed from the top third of the plant is usually weaker in germination.

C. In order for you to realize as much of a return on your planting seed as possible, it is up to you to pick your Purple Tag fields as early as possible and to urge your Gin Manager to save as much as possible before we stop saving seed.

You can assist your Gin Manager, as he is sometimes criticized by growers who do not have planting seed, when he gins your cotton ahead of theirs. Explain to these growers that, when spring comes they demand good seed and, unless planting seed is ginned early, the supply of good seed might be short.

6. YOUR SEED PROGRAM:

A. You are a part of the team that has made California cotton acceptable and in demand by the mills, both domestic and foreign.

B. The good seed you produce has helped bring our yield up from 225 lbs. per acre to over 950 lbs. per acre as a state average.

C. Your One Variety seed program, of which you are a part, is the biggest factor in making the mills want California cotton.

We appreciate your cooperation in the past and hope that we may continue to have it in the future so that California may continue to hold it's lead over other cotton growing areas.

Yours truly,

L. B. Nourse, Manager

LBN:ps

W. C. JACOBSEN
DIRECTOR

Goodwin J. Knight
Governor

SACRAMENTO 14 (HDQRS. OFFICE)
1220 N STREET
SAN FRANCISCO 5
EMBARCADERO AT MISSION
LOS ANGELES 12
900 MIRROR BUILDING

STATE OF CALIFORNIA

Department of Agriculture

Sacramento 14, California
October 15, 1957

Mr. Larry Nourse, Manager
California Planting Cotton
Seed Distributors
2201 F Street
Bakersfield, California

Dear Mr. Nourse:

On September 3, 1957, we received into our laboratory 18 samples of cotton planting seed that you requested examination for the angular leaf spot organism, Xanthomonas malvacearum.

Each lot of seed was examined macroscopically for abnormalities possibly indicating bacterial infection. No evidence of bacterial disease was suggested by this examination.

Eighteen flats of sterile soil were prepared in our greenhouse, then 50 seeds from each lot were planted in these flats. Observations were made daily after 12 days from the date of planting. Final readings were recorded on the 21st day. All lots germinated and showed no evidence of angular leaf spot infection.

Eighteen flats of sterile sand also were prepared, and another representative 50 seeds from each lot were planted under controlled conditions. For a period of twelve days, the germinating seed was kept at 20°C. night temperature and 30°C. day temperature. On the twelfth day, the flats were moved into our greenhouse for daily observations. Final readings were recorded on the 21st day. All lots germinated and showed no evidence of angular leaf spot infection.

We conclude from the method used that no bacterial blight organism was found in the seed tested, but are aware of the fact that time and space limited us to test only a small representative sample of the entire lot.

Very truly yours,

C. G. Weigle

C. G. Weigle
Associate Plant Pathologist
Bureau of Plant Pathology

sym

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
~~FIELD CROPS RESEARCH BRANCH~~
BELTSVILLE, MARYLAND
Crops Research Division

Cotton & Cordage Fibers
Research Branch

September 20, 1957

Mr. Larry B. Nourse
California Planting Cotton Seed Distributors
2201 F Street
Bakersfield, California

Dear Larry:

Your letter of August 26 was on my desk when I returned from my southeastern field trip earlier this week. I am sorry to hear that Angular Leaf Spot has been found again in the Fresno area and I certainly am at a loss to explain its presence if all planting seed were treated properly and adequately. There was not sufficient infection in California last year, so far as I know, to produce internal infection of seed, therefore seed treatments should have cleaned up any surface infection.

In response to your phone call, we have today airmailed to you bulletins dealing with bacterial blight. I shall be very much interested in the results obtained by Mr. Stout and by Richard Garber on the material you sent them.

My present travel plans will bring me to Bakersfield on October 12 and I plan to leave on the morning of the 15th. Sometime during my stay I hope it will be possible for us to get together with John Turner and the pathology boys from Davis to discuss the blight problem and possibly develop some plan of action which might be helpful. I shall look forward to seeing you at your convenience during the period indicated.

Very truly yours,

John

John T. Presley, Acting Head
Cotton Disease Section

cc: John H. Turner

1954-55

W. C. JACOBSEN
DIRECTOR

Goodwin J. Knight
Governor

SACRAMENTO 14 (HDQRS. OFFICE)
1220 N STREET
SAN FRANCISCO 5
EMBARCADERO AT MISSION
LOS ANGELES 12
900 MIRROR BUILDING

STATE OF CALIFORNIA

Department of Agriculture

Sacramento 14, California
December 6, 1955

L. B. Nourse, Manager
California Planting Cotton Seed Distributors
2201 F Street
Bakersfield, California

Dear Mr. Nourse:

Mr. Walter Ball has referred your letter of November 23 concerning angular leaf spot of cotton to this bureau.

We did not conduct an organized survey of cotton for angular leaf spot this year, but we may be able to secure some information from the Agricultural Commissioners in the San Joaquin Valley concerning the incidence of the disease during the past season.

As to your question regarding possible assistance from the Industry in making a survey next season, we feel that such a matter might be best approached through the Agricultural Commissioners in the counties concerned. We do not know whether they could accept direct financial assistance or not, but it might be possible to make certain manpower available to them to work under county supervision.

As far as this Bureau is concerned, we could furnish technical assistance to the counties including the training of personnel and the determination of disease specimens.

We feel that there is likely to be some infection in overhead irrigated cotton as long as this method of irrigation is used. However, care in the selection of planting seed from disease free fields, plus seed treatments may tend to reduce the amount of the disease. A survey next season could help in determining just how much infection is prevalent in the cotton producing area.

Very truly yours,

George E. Altstatt

George E. Altstatt
Assistant Chief
Bureau of Plant Pathology

GEA:jmm

September 6, 1954

Larry:

Just a few comments from reactions received from growers in the Arvin-Wheeler Ridge areas who will be directly affected with the preventative measures in the control of angular leaf spot.

1. <u>all</u> ~~expressed~~ pledged their cooperation with the gins and ourselves in attempting to control the disease.
2. <u>all</u> appreciated our calling on them and fully explaining the character and hazards of the disease
3. <u>all</u> appreciated, after explanation, the control measures necessary and the need for full grower cooperation
4. Grower reaction as it turned out, was entirely different than that described by Producers men. - In every case where a full explanation of the hazards of the disease was given - growers in spite of some inconvenience expressed their willingness to go along with our recommendations.

<u>Conclusions</u>

1. We (the Distributors) will have to contact <u>all</u> growers in the area affected - preferably in the company of a Producers representative
2. Develop some plan of planting for 1955 which will eleminate this same problem for next year.
3. We will have to possibly stop saving seed a little earlier this year in the affected areas

September 12, 1954

COPY

Dear Harry;

I tried to reach you at home today even though it is Sunday as I have to leave for an inspection trip at 5:30 A. M. Monday up the valley, but could not contact you.

I have talked the matter of our rules over with several Cooperators and also a few growers of Purple Tag seed since I saw you and they all feel that it is necessary to do all we can to prevent any possible chance of the leaf spot spreading even though the measures are drastic. I also discussed the matter with Harold.

Saturday John Turner and I got some of the Pathologists our at their homes and they say that the bacteria would not live over a summer in a gin due to the fact that all machinery remains dry and bacteria cannot withstand or live over under these conditions. This places us back where we started from by having sprinklered and damp cotton running through the same gin with our seed supply. Under these conditions if any of the bacteria is present it would contaminate things.

We have been harping on this since it broke out in 1951 at each of our meetings, it has been in all of my reports and we have sent out information to all of the gins in between times. Our advisory Board recommended to the Directors that our actions in the Carruthers area were necessary and the Directors and all Cooperators have approved the reports at each meeting.

On Febraury 6th., 1954 when we sent out the contracts for this years seed a letter accompanied the contracts relative to planting and alloting Purple Tag seed and also a paragraph about the Angular Leaf Spot with the following warning

"If you cannot arrange to run all planting seed through a seperate gin from Sprinklered Cotton, call this office before you sign any contracts with a grower. Thisis important due to the spread of the Angular Leaf Spot."

This was sent out to try and avoid any trouble such as we find ourselves faced with now.

I wonder if the solution for your situation isnt to hold off the sprinklered cotton until you have produced enough seed for your own use and we will make up the difference in some district where they have no sprinklered cotton or have more than one gin, unless you can make a trade between Red and Frank as we discussed.

I am leaving this letter at your home so you wont think that I had forgotten about the matter.

I will be at Pomeroy's tonight after about 8 P. M. if you wnat to call me or if you dont get back I will be in the office Tuesday and hen have to go on inspection trips Wednesday and Thursday.

I am sure we can work something out but we cannot disregard these precautions for the good of all concerned

Yours respectfully,

L. B. Nourse, Manager

xxxxxxxxxxxxxxxxx

2201 F Street

October 16, 1953

Mr. Kenneth Frick
Route 5, Box 437
Bakersfield, California

COPY

Dear Ken:

Attached is a copy of a letter written at Mr. Pomeroy's suggestion to our Advisory Committee after talking to them on the phone.

This has to do with the spread of a very dangerous blight about which little is known in California. The only cure seems to be to leave the land lay out until all trash has rotted and disappeared.

The Committee agreed we should save no seed from this gin due to the fact that the blight is a bacteria.

This is rather drastic since we had already accepted some of the fields for seed saving and the growers had put their money into clearing their fields. Some thought should be given as to whether we could compensate these growers by giving them the same spread that is paid to all growers of reproduction seed and still not set a precedent in case this spread becomes general. This is an emergency measure which has arisen just as seed saving is starting so it might be worked out on this basis.

Yours respectfully,

L. B. Nourse, Manager

LBN:bm
encl.

bcc: Mr. H. L. Pomeroy

Same letter sent to:
Lloyd Harnish
Floyd Nelson
Ray H. Oesting
J. H. Cardwell
Marvin Farley

FILE COPY

Re: Bacterial Blight or Angular Leaf Spot - Caruthers Area

9. For this reason it is deemed wise to give the gin the following choice:

(a) If they wish to have their growers of reproduction seed take their cotton to some gin outside of this district where no cotton from the infected area is ginned, they may then save the seed.

(b) If this is not done, no seed will be saved from these fields belonging to the Caruthers Cooperative Gin.

I have talked with the manager of the Caruthers Cooperative Gin and he suggested methods of clean-up at the gin; however, in the interests of the seed program it is felt that no seed should be saved through this gin as a clean-up would not be adequate.

Yours respectfully,

L. B. Nourse, Manager

LBN:bm

APPROVED:

John H. Turner
(John Turner)

COPY

CALIFORNIA PLANTI.. COTTON SEED DISTRIBUTORS 2[illegible] F Street
Bakersfield, California

October 15, 1953

Professor B. A. Madson — University of California, Agricultural College, Davis, California
Mr. Charles Grimm — Agriculture Commissioner, P. O. Box 946, Bakersfield, California
Mr. John Turner — U. S. Experimental Station, Shafter, California
Mr. George Harrison — " " " " "
Mr. Eugene Hayes — Route 2, Box 80, Madera, California
Mr. W. L. Smith — Route 1, Box 25, Buttonwillow, California

COPY

Following my conversation with you as a member of our Advisory Committee, relative to the increasing danger of the spread of Bacterial Blight, or Angular Leaf Spot, in the sprinklered cotton fields in the Caruthers area, am asking that you okay the copy of this letter to me as a recommendation to the Board of Directors in case anything comes up in the future relative to the matter.

Developments in the past:

1. This was discovered in the Caruthers area on sprinklered cotton in 1950 and no serious spreading was reported until last week.

2. At the time it was reported in 1950 we arbitrarily ruled that any seed planted on sprinklered cotton that year would be rejected and no reproduction seed could be planted on sprinklered acreage in the future. This has proved to be a wise decision.

3. As of today this infection has spread to about 10 known fields, all sprinklered, comprising some 1200 acres.

4. So far no infestation of row-irrigated cotton is known.

5. It is felt that anything we can do as a preventative measure, even though drastic, should be done.

6. In the Caruthers area we have some 250 acres of reproduction seed planted.

7. The gin that processes our seed will also gin some sprinklered cotton from this area.

8. Even though we could clean up the gin of all seed and trash, the Bacteria would doubtless be in the machinery.

UNIVERSITY OF CALIFORNIA
COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATION

FIELD STATION ADMINISTRATION
DAVIS, CALIFORNIA

October 20, 1953

Mr L. B. Nourse
California Planting Cotton Seed Association
2201 F Street
Bakersfield, California

Dear Mr. Nourse:

I am approving the copy of your letter outlining plans for handling seed cotton grown in areas where Angular Leaf Spot occurs. The procedure you suggest is not only a wise but necessary precaution.

I discussed this problem with Dr. Kendrick of the Department of Plant Pathology, and he believes, as I do, that it would be practically impossible to clean up a gin to the point where uninfected cotton seed would not be contaminated.

Very truly yours,

B A Madson

B. A. Madson

BAM:jr

November 3, 1953

Dr. J. B. Kendrik
Dept. of Plant Pathology
College of Agriculture
Davis, California

COPY

Dear Dr. Kendrik:

Enclosed you will find cotton bolls from fields of cotton in the Arvin area.

Sample one is from a row irrigated field labeled #1 across farm road from sprinklered irrigated field sample #2; both have been defoliated.

I showed these to George Harrison and although neither of us thinks or hopes it is Bacterial Blight, we thought we should forward it to you to make sure.

Am also enclosing some information we are sending to all of our cooperating gins with the hope that such preventative measures will lessen the chances of a spread of this disease.

Hoping to hear from you when you have determined the cause of the scars, I am,

Yours respectfully,

L. B. Nourse, Manager

LBN:bm
encls.

UNIVERSITY OF CALIFORNIA
COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATION

DIVISION OF PLANT PATHOLOGY
DAVIS, CALIFORNIA

November 11, 1953

Mr. L. B. Nourse
Manager - Secretary - Treasurer
California Planting Cotton Seed Distributors
2201 F. Street
Bakersfield, California

Dear Mr. Nourse:

The cotton ball specimens from the Arvin area have proven not to be bacterial blight. They show superficial injuries which are apparently not due to any pathogen. At least the initiation of the injury is non-pathogenic even though there is evidence that fungi are now involved in the tissue.

I was very interested in reading your list of preventative measures for blight and feel that you are doing all that can be done at the moment in this regard.

Very truly yours,

Byron R. Houston

Byron R. Houston
Associate Plant Pathologist

BRH:prs

DISTRIBUTORS OF CALIFORNIA A 4-42 ACALA PLANTING SEED

DIRECTORS:
H. L. POMEROY
R. H. OESTING
FLOYD NELSON
JOE CARDWELL
L. A. HARNISH
KENNETH FRICK
MARVIN FARLEY

CALIFORNIA
PLANTING COTTON SEED DISTRIBUTORS
2201 F STREET
BAKERSFIELD, CALIFORNIA
TELEPHONE FAIRVIEW 4-6538

MANAGER-SECRETARY-TREASURER
L. B. NOURSE

September 7, 1954

John Shrieber
c/o Farmers Ginning Co.
RR 1, Box 15
Buttonwillow, Calif.

Dear Sir:

A copy of the attached card, regarding Angular Leaf Spot, will appear at your gin. This is sent to you asking your cooperation in assisting us to carry out voluntary protective measures to prevent the spread of a disease which will be serious if it should get into our seed supply.

If your gin man asks you to do certain things it is not to work a hardship on you, but for your own protection and the protection of our total seed supply for everyone.

Yours very truly,

Larry

L. B. Nourse
Manager

lbn/mb

ANNUAL MEETING
of
MEMBERS, DIRECTORS AND COOPERATORS

CALIFORNIA PLANTING COTTON SEED DISTRIBUTORS

Tagus Ranch Barbecue Restaurant
Tagus, California
July 28, 1954

REPORTS:

1. Manager's - from January 1, 1954 to June 30, 1954.

2. Auditor's - from July 1, 1953 to June 30, 1954.

VALUE OF SEED SOLD:

1. Current and Reserve sales will approximate $2,900,000.00.

COSTS:

1. Previous reports showed that costs would increase. However, we have been able to reduce costs slightly over last years operations in spite of:

   a. Complete years rent in new location.
   b. Additional Cooperators in the program causing increase in spread of fields.
   c. Saving experimental seed South of Tehachapi, which finally had to be milled.
   d. Maintaining one seed price in all parts of the State.

SEED POOL SETTLEMENTS.

1. Figures are late due to some Cooperators not turning in seed figures before going on vacations, therefore there is no way to predict what the Growers' return will be.

   The few who hold up figures so that $3,000,000 worth of seed cannot be settled for on time are usually the first ones to complain if someone else inconveniences them. Hereafter, the deadline of June 15th (when a Cooperator has to carry over any seed not reported and he has to report it in as sold at planting seed price) will be adhered to.

2. As usual some Cooperators will OWE MONEY to the pool, others will have money coming which cannot be paid until those owing money send in their checks. Please be prompt when you receive the final statement.

3. Mr. Nelson's committee on pool settlements did not meet since no complaints have been received, therefore, settlement to the Growers will be on the basis of 75% actual tonnage and 25% on acreage percentage basis.

4. The SPREAD will remain the same for this settlement. First $7.50 to the Grower, the balance split 50-50. Next year the spread will be split, the first $7.50 to the Grower, up to the next $5.00 to the Cooperator and the balance split 50-50.

OPERATION OF STATE WIDE SEED POOL:

The following statements may help to clear up some confusion that exists regarding pool operations:

1. The present system of pool settlements whereby a common pooling price is established so that the settlement is uniform for all growers was requested by the Cooperators and approved by the Distributors.

2. It requires that:

   a. All Cooperators supply to the Distributors at the end of the Planting season, or not later than June 15th, their figures of tons sold at planting seed price, plus tons of surplus seed left on hand. These figures have to equal the total production of seed in their particular pool.

      The Cooperator keeps all money collected for seed sold at planting seed price until final pool settlement figures are issued.

   b. The Distributors sell any surplus seed for crushing that is not taken into the Reserve. Money collected for this, plus the amount paid for Reserve Seed, plus whatever funds the Cooperators, who sold all of their seed, have to pay into the pool is paid out by the Distributors to equalize the seed pool.

      This distribution lowers the Cooperator who sold all of his seed at planting seed price to the value of all of his seed at the common pooling price and raises the Cooperator who had surplus seed up to the value of all of his seed at the pooling price. Example below.

c. The difference between the planting seed price and the pooling price has to come out of the spread, therefore, the spread of $26.82 decreases in proportion to the amount of seed left over. This difference cannot come out of the oil mill price nor extra charges as these figures represent actual "out of pocket" costs advanced by the Cooperators.

d. That all surplus seed must be crushed or taken into the Reserve immediately at the end of the planting season. This surplus is allotted to the Cooperating mills in proportion to the amount of seed they produced the previous year. If any mill is closed down and does not want to purchase their share and hold it until they start crushing again, that portion is distributed to the remaining mills.

One oil mill was closed down this year. One gin, which holds stock in that mill, feels that they should be allowed to hold their surplus seed over at the price bid by the mills until that mill reopens, even though the mill refused the seed. There is no more logic to this than if we were to allow a grower to take his planting seed home at oil mill price instead of paying planting seed price for it. Such concessions could wreck the seed program overnight.

The seed program was originally set up on the principle that it was for the benefit of all; that it is bigger than any individual or any Cooperator and therefore certain broad basic principles have to be adhered to that have proven successful over the years, and cannot be varied to accomodate the individual case.

EXAMPLE:

These figures merely demonstrate a point.

	Tons sold for Planting Seed	Tons to Crush or to Reserve	Value at Planting Price $130	Value all Seed Pool Price $119.639	Owe Pool	Receive from Pool
a.	622.285	00	$86,097.05	$79,235.15	$6861.90	
b.	257.0	149.67	33,410.00	46,653.62		$15,243.62

AVERAGE OIL MILL POOL SETTLEMENT:

1. Due to several prices paid for oil mill seed, this has to be handled on a pool basis.

2. Difference between January and June tonnages reported have been adjusted by adding or subtracting at the average oil mill price.

ACREAGE FOR REPRODUCTION:

1. Approximately 70,000 acres of Purple and 3,800 acres of Parent seed have been planted in the San Joaquin and Imperial Valleys. None at Blythe or Coachella. This is the first time parent seed has been planted in the Imperial. Purpose, -to find if seed becomes acclimated after several generations.

   As long as our reproduction fields are under the able supervision of Stan Jones, Charles Cleary, Ray Hoekstra and Tom Cherry Jr., every one can feel assured that our seed will be of the highest quality and program will function smoothly.

2. Part of the gin manager's responsibility is to allocate the purple tag seed, see that the fields are properly isolated, select the best growers with the cleanest land, know the location of the fields, consult with the growers about keeping their fields in good condition and to deliver to Purple Tag growers field notices issued by the Distributors. If just one lacks interest in these things, years of research and breeding can be cancelled.

3. Due to the uncertainty of quotas we could not afford to make a drastic reduction in the acreage. Therefore, it will approximate last seasons net acreage.

4. Several reported infractions of the rules for allocating Purple Tag seed were investigated this year. All reports will be investigated as they occur. A letter was sent to Cooperators to refresh everyone's memory regarding the rules.

ANGULAR LEAF SPOT AND SPRINKLERED COTTON:

1. Repeated warnings have been given that no reproduction seed was to be planted on sprinklered ground. In spite of this, we find several of our seed fields being sprinklered. These will be rejected.

2. Until more is known about the Leaf Spot or resistant strains are developed we will continue to save seed only where seed can be run through a gin that is not handling sprinklered cotton, or as soon as sprinklered cotton is received at a gin, no more seed will be saved.

   This may appear difficult to accomplish, but if we do a few things on a voluntary basis it will be much simpler than if we get governmental controls.

SEED SAVING:

1. Mr. Frost's committee did not meet as quotas are not settled and it was felt that we should save seed for 1,000,000 acres or about 23,000 tons.

RESERVE SEED:

1. All of last year's 1,037 tons have been sold out of State.

2. All Cooperators were warned before delinting season and again in January that they would have to regulate their supply by leaving a part fuzzy and part delinted but not treated so that it could be milled. In this way we can control the amount of carry over. This was adhered to by all except two Cooperators. We will carry over about 900 tons of treated and delinted seed, and about 800 tons of fuzzy Purple and Parent, which it was thought wise to carry over as insurance against some unforeseen condition.

   One Cooperator has delivered some seed in old bags with 1952 tags for our Reserve, which we have rejected. If any Cooperator permits such carelessness there is no reason why the Distributors should be penalized. This seed is being dumped and burned.

3. The following rules recommended by a special committee and adopted by the Directors and Cooperators are a repetition but are put in this report as we seem to forget.

   a. That all Cooperators must send in accurate reports promptly when requested.

   b. That each Cooperator must estimate his requirements at the beginning of the year for his first planting and treat and delint only this amount. The balance of his supply to be held as an emergency backlog for replanting and left in a fuzzy state or delinted only.

   c. That any Cooperator who fails to comply with this would have to carry over the surplus of treated and delinted seed above the amount that the Distributors decided to take into the Reserve and report this amount in as sold at planting seed price.

   d. That any Company or Cooperator over-ordering seed from another pool will be obligated to carry this seed over until the next season.

   e. That any seed, not reported in by June 15 by any Cooperator, that belongs in his seed pool will have to be carried over a nd reported in as sold at planting seed price.

A copy of these rules was sent to all Cooperators.

SACKS:

1. The use of heavy 10 oz. sacks has proved a wise move. It has cut the loss in seed and makes a better looking package.

2. To eliminate overloading of sacks, the size has been reduced this year. Sacks should carry 85 pounds of fuzzy and 100 pounds of delinted seed.

3. Sacks have been ordered for all Cooperators. Those who have not let us know their requirements, please do so at once.

4. ALL SEED MUST BE IN NEW SACKS.

5. Where a Cooperator has a few new 10 oz. sacks on hand from last year's supply, these can be used to eliminate waste providing only 100 pounds is placed in them.

GROWERS RESERVE:

1. Growers Reserves for 1951-52 amounting to $13,829.23 will be paid off in August.

2. No money was borrowed to carry last year's Reserve seed.

3. Your Manager has applied to the Berkeley Bank for Cooperatives for a line of credit not to exceed $100,000.00. We may not need to use this loan.

4. Your Manager recommends that the President and Secretary be authorized to borrow sufficient funds to carry the Reserve, if and when found necessary, up to the limit of $100,000.00.

SHAFTER STATION AND OHANNESON "40":

1. Mechanization work is being carried on as usual on the "40" with the cooperation of the U.S.D.A. and small contributions by the University.

   Herb Miller, who has headed the project, has been transferred to the Division of Engineering at Beltsville, Maryland. He is being replaced by Harold Stanton.

2. The lease has been renewed.

3. The humidifying and cooling system in the laboratory has been completed by the Distributors at a cost of $1,935.00.

4. The Green House erected by the Distributors is in operation. Contract cost was $15,006.00. It has been deeded to the County of Kern.

5. A check in the amount of $10,997.00 has been sent to the U. S. Treasurer to pay non-technical salaries at the Shafter Station.

DEFOLIATION:

1. Work is progressing nicely under the leadership of Dr. Addicott.

2. We have again granted the University $20,000.00 for this year.

WEED CONTROL PROGRAM:

1. At the request of Dr. Cheadle we have given the University another grant of $7,115.31 as the University again eliminated any support from their budget. The grant was to have been $10,000.00 but there was a balance left from last year.

STRAIN TESTS:

1. These have proved very beneficial and will be continued to assist in the breeding work.

2. Audy Bell, whom we employed last year, is doing an outstanding job.

3. Two new locations have been planted this year.

INSURANCE:

1. Unless the oil mill price increases over our average of $53.93, insure the new planting seed at $128.00 per ton. If it starts to increase, add the increase to $128.00. If it decreases, subtract the decrease from $128.00.

2. Unless you report the correct amount and you have a loss you are still responsible to the Grower for his portion of the spread.

3. Uniform basis of value clauses must be signed by your agent and attached to your seed policy. A supply will be sent after this meeting. We had a fire loss this season and where this clause was attached to the policy, there was no question about the settlement.

Annual Meeting - Members, Directors & Cooperators
July 28, 1954

SEED CLEANING:

1. Some new machinery is being installed each year. As was predicted, Grower pressure is taking care of this.

IMPERIAL, COACHELLA AND BLYTHE:

1. After two years experience in the Imperial, our seed program is working smoothly, guided by Tom Cherry Jr. and with the able cooperation of Dr. Sappenfield at the Brawley Station, everything points to continued progress.

2. Some 1,600 tons of Green Tag was produced and all but 91 sacks have been used in the three Districts. Our ruling that no seed would be shipped from this Valley, but if it were, it would be plus freight, proved its value in getting the Growers to use the local seed. This rule will stand for the future.

3. We received 100% cooperation from everyone and much of the success we had was due to Mr. Farley's assistance.

SHAFTER FIELD DAY:

1. Due to the expanded program at the Station and the fact that we had to make advance arrangement for the School Cafeteria, we will hold another Field Day, September 2, 1954.

In closing, I want to thank the Members, Directors and Cooperators and those working with me for their support, without which the seed program could not go forward.

Larry

L. B. Nourse
Manager

SEED DATA

A4-42

ACREAGE

1952-53		% Of Total Acreage	1953-54	1954-55
Parent	4,815	0.35%	4,227	3,700
Purple	90,000	6.42%	81,000	67,300
Green	1,305,185	93.23%	1,314,773	836,000
	1,400,000	100.00%	1,400,000	907,000 Estimate

RESERVE STORAGE

Parent	80 Tons	65 Tons	162.5 Tons
Purple	2	0	724
Green	2,252	966	871
	2,334	1,031	1,757.5

SALES

1953-54

CURRENT SEED

	PRODUCTION	IN STATE	OUT OF STATE	IILLED	TO BE TAKEN INTO RESERVE
Parent	237	75	0	0	162
Purple	2,393	1,669	0	0	724
Green	20,764	18,159	00	1707	898

RESERVE SEED

Parent	65	42	23	0	0
Purple	0	0	0	0	0
Green	966	0	966	0	0

John Presley, Section of Cotton & Other Fiber Crops, Plant Industry Station, Beltsville, Md.

July 15, 1954

John H. Turner, U. S. Cotton Field Station
Shafter, California

Dear John:

It seems that bacterial blight dangers should be given serious consideration in our breeding program. Sprinkler irrigation is increasing each year and there are some of these farmers who must follow cotton with cotton if they continue to operate under their present set-up. Precautions being followed by the Seed Distributors are likely to become troublesome and costly.

I am growing several of Blank's lines in an observational nursery this year. We cannot afford to bring the organism on the Station for breeding purposes. This, of course, puts us at a disadvantage. If we make plantings of breeding material on farms where the organism is present, we have two complications; (1) the dangers involved from bringing selected plants back to the Station and (2) the likelihood of the grower saving seed if Blank's resistant lines looked good to him -- regardless of undesirable features it may have.

I would like to have your reaction to the following idea after discussing the situation with Tom Kerr: If I locate fields in the next few weeks where blight is present and sprinklers are being used and it seems that we could work with the grower. Go in and plant seed from breeding stocks in skips and with irrigations coming weekly we should obtain reasonable germination. This should give ideal conditions for spread of the blight from his old cotton so that any resistance could be determined on the young seedlings. This would eliminate the need of growing the breeding stocks out to maturity and running the risk of farmers saving seed. Should this work out, it seems that we could make progress transferring resistance into 4-42 by growing ½ of the seed from segregates at the Station and selecting from only those showing resistance (the other ½ of the seed supply being grown on farms with blight present.)

Let me hear from you on this matter.

Sincerely yours,

J.H.T.

John H. Turner
Agronomist in Charge

JHT/nm

cc: Tom Kerr
L. B. Nourse

Angular Leaf Spot 8/20/51

Helwick - County Ag. inspector
Turner - USDA
Nourse - Distr
Ackman - Coberly West

Fields reported by State man.

Chas West -
3 mi W of 99 on Maricopa Rd.
Sec 9 11-20

Copus Rd V. Wright
2 mi W of 99
just west - of white house [illegible]
then north [illegible]

Look at Icardo -
Big house east of Mettler Sta.
Field east of house.
North end + center strip
sprinklered.

Selden Morley

Kern Co. Dept of Agr.

Gilbert Stout 6 checked
5 carried organism

Producers
Cotton Oil Co.

Southern District	2034
Weedpatch	466
Arvin Coop	787
A.A. Camp	217
Coberly-West Co.	820
San Joaquin Cotton Oil	2269
	6593

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CALIFORNIA
PLANTING COTTON SEED DISTRIBUTORS
2201 F STREET
BAKERSFIELD, CALIFORNIA
TELEPHONE 4-6538

MANAGER-SECRETARY-TREASURER
L. B. NOURSE

February 6, 1954

IMPORTANT

USE NO OLD CONTRACTS

Dear

Enclosed you will find the following;

1. Memorandum of Agreement in duplicate between your Company and the Distributors, showing the tons of Purple Tag Seed alloted to you for 1954. Kindly sign and return one copy to this office.

2. Purple Tag Contracts in triplicate between your Company and your Growers. Please see that these are filled out correctly in all places. Be sure the Growers correct mailing address is on them. Have them signed and return the Distributors copy to us as soon as possible. Be sure to place location of fields on back of our copy on the section map.

3. Proxy cards that have to be signed by the Grower and returned with the contracts. The law requires that we have these for the Annual Meeting. Save time and get them signed when the contracts are signed.

I M P O R T A N T

1. There is a change in these contracts, Paragraph 11, section d. Memorandum of Agreement and paragraph 10, section c. Contract as follows;

   A. Up to the first $7.50 to the Grower.
   B. Up to the next $5.00 to the Company.
   C. Balance split equally between Grower and Cooperator.

2. The total acres on your contracts last year were_____, of which _____ acres or _____% were rejected due to foulness and or lack of care. This is a waste of good seed.

3. You have Growers in your district who keep their fields clean as a general practice. Select these growers.

4. ANGULAR LEAF SPOT:

   A. If you cannot arrange to run all planting seed through a separate gin from Sprinklered Cotton, call this office before you sign any contracts with a Grower. This is important due to the spread of the Angular Leaf Spot.

5. Due to the uncertainty of acreage controls in the future, it is important that we plant about the same acreage as last year. We may not be able to save all of the seed planted but it will be available if needed.

6. You will find some growers this year who will want to plant Purple Tag seed just for the Wilt Tolerance without any idea of taking care of their fields for seed purposes. YOU MUST NOT PERMIT ANY SUCH GROWER TO GET PURPLE TAG SEED.

7. NO PURPLE TAG SEED CAN BE USED TO SECURE NEW ACCOUNTS.

8. If you have more than one gin, send a copy of this to them.

Yours respectfully,

Larry

L. B. Nourse, Manager

P. S. Remember that we are trying to have the seed produced in the Imperial Valley used in that District which includes Borego, Coachella, Indio, Blythe, Palo Verde, Bard and the Imperial Valley.

At the Mid year meeting it was decided that no seed can be shipped to this district from the San Joaquin Valley or if any is shipped it must be F. O. B. the San Joaquin Valley fuzzy basis.

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MANAGER-SECRETARY-TREASURER
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February 6, 1954

Dear

I thought this copy of a letter regarding the Angular Leaf Spot or Bacterial Blight would be of interest to you.

The sample mentioned was a composite of seed taken from Purple Tag fields which produced Green Tag seed that will be planted this season.

Larry.
L. B. Nourse, Manager

C O P Y

Bureau of Plant Pathology
Gilbert L. Stout
Chief

STATE OF CALIFORNIA
DEPARTMENT OF AGRICULTURE
Sacramento 14
January 25, 1954

Mr. L. B. Nourse, Manager
California Planting Cotton Seed Distributors
2201 F Street
Bakersfield, California

Dear Mr. Nourse:

On November 10, 1953, we received a sample of cotton seed sent by Mr. Ray Hoekstra of your organization. The specimen was labeled "B.B.I." and the letter of transmittal requested examination for the presence of the bacterial blight organism.

This letter is to confirm information given to you by Mr. G. L. Stout regarding this specimen during a phone conversation on December 28, 1953.

Examination for bacterial pathogens in the seed received was directed along several lines. The entire lot (approximately 1½ pounds) was examined grossly for evidence of abnormal or discolored seeds. Eight slightly discolored seeds were found and picked out for further examination. Two flats of seeds were planted in the greenhouse and held for examination of the developing plants. At the end of three weeks the plants had developed two leaves in addition to the cotyledons. None of the plants showed any evidence of bacterial infection.

The eight discolored seeds were at this time macerated in sterile water. A portion of the resulting suspension was cultured on nutrient medium and a portion was atomized over one of the flats of young plants in the greenhouse after mechanically injuring some of the leaves. No bacteria grew in the cultures and none of the atomized plants developed bacterial infection.

About one half pound of the remaining seed was macerated with sterile water in a mechanical homogenizer. A portion of this suspension was cultured and also inoculated into mechanically injured plants in the second flat. The cultures were negative for bacterial growth and none of the plants developed bacterial infection.

The conclusions are that no evidence of the bacterial blight organism was found in the sample of seed when examined as described above.

Very truly yours,

C. G. Weigle

C. G. Weigle
Assoc. Plant Pathologist

CGW:dsc

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Sacramento 14
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C. G. Weigle

C. G. Weigle
Assoc. Plant Pathologist

CGW:dsc

February 1, 1954

C. G. Weigle
Assoc. Plant Pathologist
Bureau of Plant Pathology
State Department of Agriculture
Sacramento 14, California

Dear Mr. Weigle:

Received your detailed letter of the 25th relative to test on composite sample of cotton planting seed sent you to test for Angular Leaf Spot.

This report is very gratifying and more than ever brings up the question of where does this disease originate and how. I guess that is the $64 question.

Thanking you for the letter and your interest in the matter, I am

Yours very truly,

L. B. Nourse
Manager

lbn/mb

COPY

MID-YEAR MEETING

of

DIRECTORS AND COOPERATORS

CALIFORNIA PLANTING COTTON SEED DISTRIBUTORS

Tagus Ranch Barbecue Restaurant
Tagus, California
January 20, 1954

TO DIRECTORS and COOPERATORS:

This is a report from July 1, 1953 to December 31, 1953, together with a statement of receipts and disbursements for the same period. No audit is made until June 30, 1954.

OPERATING COSTS:

Some reduction caused by a smaller reserve and less tonnage saved will be offset by having to maintain our same acreage in re-production seed due to uncertainty of future allotments.

PURPLE TAG (re-production) SEED:

81,412 acres were planted in the San Joaquin of which 13,778 acres were rejected and 3947 acres in the Imperial, of which 275 acres were rejected. This was due to poor selection of fields by Cooperators, weedy conditions and some improper isolation.

A list of acreages upon which no Purple Tag may be planted this year will be sent to all Cooperators.

Some dissatisfaction was voiced again this year about our rejection of fields. A few fields were reinspected three times to check our decisions, but were rejected in the end.

Unless the Directors and the U.S.D.A. revise our standards, fields will continue to be rejected as in the past. The only other alternative is for the Cooperators to select growers who have clean ground and such ranches are available in every district.

PARENT SEED AND ALLOTMENT OF PURPLE TAG SEED:

4,237 acres of Parent seed were planted in the San Joaquin of which 515 were rejected or no seed was saved due to improper care or the acreage was used for isolation purposes.

1. Each Cooperator will receive about the same amount of Purple Tag this season as last. It is essential that we maintain our acreage of reproduction seed at a high level in case acreage allotments should be done away with for some unforeseen reason.

2. No Purple Tag seed will be alloted to the Blythe or Coachella Districts.

3. No Purple Tag seed will be alloted where there is no chance of segregating planting seed from sprinklered grown seed.

4. As in the past, due to spread of Angular Leaf Spot no reproduction seed will be permitted on acreage using sprinklers.

5. Lest we forget, no Purple Tag can be used by any Cooperator to secure new business.

SEED SAVING:

After conferring with Chairman Frost, your committee did not meet but members were consulted by phone. It was decided that due to the lateness of the season all seed possible should be saved as early as possible even though it might mean that we would stop saving seed before some Cooperators had been able to save enough for their own needs, to keep our total supply in balance.

It was decided that we should save on the basis of an expected 1 million acres. Taking the last few years average planting, this should require some 22,850 tons. We have saved 23,334 tons of all types of planting seed.

ANGULAR LEAF SPOT OR BACTERIAL BLIGHT:

A noticeable increase was discovered in the Caruthers area late in October in the sprinklered fields.

No planting seed was saved in this area as our Cooperator had only one gin and could not segregate planting seed from sprinklered cotton. They were given the opportunity to haul the seed to another gin outside of the district where no Leaf Spot was known to exist, if they so desired.

Information as to preventative measures were mailed to all gins and wherever sprinklered cotton was to be processed it was run through a gin where planting seed was not ginned. Where this was not possible, gins saving planting seed were stopped as soon as sprinklered cotton was delivered.

THIS SAME PROCEDURE MUST BE FOLLOWED THIS COMING SEASON. It should be much easier this season with the reduced acreage.

Leaf Spot was later discovered in the Five Points area, Huron, Wheeler Ridge and Jasmine areas; none on furrow irrigated fields.

Composite samples of planting seed saved from reproduction fields were sent to the State Laboratory. All tests to date have been negative. All samples were from row irrigated fields.

Dr. G. L. Stout, Chief, Bureau of Plant Pathology, State Department of Agriculture, could not be present today but writes that out of 358 fields surveyed in 8 counties, 103 were overhead sprinklered and the disease was found in 24 of them. None was found in the row irrigated fields.

Angular Leaf Spot

The surest way to prevent the spread, according to Washington authorities, is to be sure that:

1. All planting seed is PROPERLY TREATED.

2. Infected fields should be fallowed or plowed six inches deep early, then irrigated immediately.

3. That all planting seed is run through separate gins.

If we follow these voluntary measures we can avoid future governmental controls.

TREATING AND DELINTING:

All planting seed used this season must be properly treated with Ceresan or like treatment.

A state test on seed planted last season on an infected sprinklered field showed very little Ceresan used. Some 18 tests last year showed a deficiency of Ceresan.

In calling several plants we found the operator was not sure of the type treatment being used and did not know the amount. There is a charge being made for this service and unless more supervision is provided, this can bring on Governmental controls.

A warning has been sent to all delinting plants. A formula is issued for all treatments and the correct application is essential as an excess amount can be detrimental.

RESERVE SEED:

We carried over 1037 tons of treated and delinted seed. This was due to the fact that some did not leave a portion fuzzy so it could be milled. No money was borrowed to carry this supply. We used Distributors funds. Practically all of this supply has been sold out-of-state.

The following rules, adopted at the Annual Meeting are a repetition, but are put in this report lest we forget:

A. That all Cooperators must send in accurate reports promptly when requested.

B. That each Cooperator must estimate his requirements at the beginning of the year for his first planting and treat and delint only this amount. The balance of his supply is to be held as an emergency backlog for replanting and left in a fuzzy state or delinted only.

C. That any Cooperator who fails to comply with this would have to carry over any surplus of treated and delinted seed above the amount that the Distributors decide to take into the Reserve and report this amount in as sold at planting seed price.

D. That any Company or Cooperator over-ordering seed from another pool will be obligated to carry this seed over until the next season.

E. That any seed not reported in by June 15 by any Cooperator that belongs in his seed pool will have to be carried over and reported in as sold at planting seed price.

STRAIN TESTS:

This is the first year and results are most gratifying.

Audy Bell, a graduate of Fresno State whom we employed under the guidance of John Turner, has done an outstanding job.

These tests will be continued and have done a lot toward overcoming the criticism of 4-42 which was prevalent last year.

WEED CONTROL PROGRAM:

This was reported on at the Annual Meeting.

Since then Dr. Cheadle of the University has secured the services of Chester Foy, and the U.S.D.A. has appropriated funds and secured the services of John Miller. Both will work out of Shafter.

As usual the University is providing no funds for this project.

DEFOLIATION PROGRAM:

Dr. F. T. Addicott and his staff are doing an excellent piece of research work.

We have completed our third payment of $20,000.

A request was made this year of the University for some $16,000 to carry on this work. It was our understanding that it was approved by the special committees but was finally deleted from the University's budget.

A letter was written to Dean Wellman to find out what we could expect from the University in the future for cotton research. We had a pleasant visit from the Dean and a short note expressing his interest in the cotton problem of the State.

GERMINATION TESTS:

All tests received so far from the State laboratory have run between 84% and 96%. Some picking machines are cracking too high a percentage of seed and some premature defoliation is producing immature seeds. These all affect germination.

Delinting usually raises the germination from 3 to 5 %. All germination tags will carry 80% even though the individual tests may be higher.

TAGGING SEED TO COMPLY WITH THE STATE LAW:

The State law requires:

1. ON EACH ORDER OF 50 SACKS OR LESS, EACH SACK MUST CARRY A GERMINATION TAG.

2. ON EACH ORDER OF 50 SACKS OR MORE, ONE TAG WITH THE ORDER IS SUFFICIENT, BUT SINCE THE MAJORITY OF ORDERS ARE FOR LESS THAN 50 SACKS, EACH SACK MUST BE TAGGED.

It will be the responsibility of each Cooperator to see that these tags, which will be furnished by the Distributors, are placed on each sack at the gin, in their warehouse or at the delinting plant.

If a Cooperator sells to another pool, he is responsible for putting the tags on each sack. If the tags are not delivered before the seed is shipped, the purchaser is responsible for placing the tags on each sack.

These germination tags carry a number that corresponds with the number on the Green Tag so it is important that the right tags are used. DO NOT USE ANY OF LAST YEAR'S TAGS AS THE LOT NUMBERS ARE NOT THE SAME.

Do not neglect this as the law carries a penalty. Any inspector can place a stop sale order on any seed found without tags.

The Distributors have fulfilled their obligation when they have furnished you with the tags.

The State Seed Laboratory does not have adequate equipment to test the seed promptly, so there may be some delay in furnishing tags.

IMPERIAL AND SOUTHERN VALLEYS:

In 1952 we offered these valleys reproduction seed so they might raise their own supply of planting seed, thereby relieving the Cooperators in the San Joaquin from saving extra seed.

Blythe and Coachella raised no seed this year but the Imperial produced some 1500 tons which, with the reduced acreage, should provide sufficient seed for these areas.

RECOMMENDATION: So that the southern valleys use the Imperial supply, there is to be no seed shipped from the San Joaquin south, or if any is shipped it is to be sold f.o.b. San Joaquin Valley points, fuzzy basis.

This differential will encourage the use of Imperial seed. Reproduction seed cannot be included under this recommendation as none is raised in the south.

The base seed price will be the same throughout the Imperial District (which includes Barego, Bard, Coachella, and Blythe) as it is in the San Joaquin Valley. Any seed shipped outside of the limits of these two areas will be plus freight.

Some consideration is being given to the idea of raising some purple tag in the Imperial which will eliminate shipping a supply there another year.

Germination tests received so far from the Imperial Valley seed run well above 85%.

TRANSFER OF SEED FROM ONE POOL TO ANOTHER:

The seller will pay the cost of trucking up to the amount allowed in the Extra Charges. The Distributors will assume the amount above this figure, if any. This does not apply to any seed being shipped outside of the San Joaquin Valley nor any seed outside of the Imperial District.

PAYMENT FOR SEED SOLD:

Some gins have come up with the idea that they can purchase seed, put it out to their growers and not pay for the seed until they have collected from their growers. Every Cooperator should notify the purchaser when they sell seed that this is not the correct method. That payment is to be made upon delivery or within 30 days at least. If any company uses this practice, they should be put on a cash basis.

INSURANCE:

After this meeting be sure to report the value of your seed at the selling price set today. Add the delinting charges to this price.

Uniform basis of value clauses will be sent out after this meeting. These must be signed by your agent and attached to your policies.

Some reserve seed was lost by fire this year. We collected 100% without argument due to the fact that the value clauses were attached to the policy.

COACHELLA VALLEY:

A small plot of Hopi Acala was grown in the Valley in 1952 and upwards of 200 acres in 1953. Of this 1953 planting, about 3 acres was pure seed and the balance isolation seed.

The proposal was to save all of this seed which could plant some 5000 or 6000 acres.

In conference with Mr. Turner, Mr. Harrison, and a representative from Washington an agreement was reached, that due to the fact that this cotton was still in the experimental stage it would not be sound policy to plant such an acreage because, if it did not turn out as expected we would be in a position of having urged growers to get out on a limb. Therefore, we agreed that we would save only 25 tons with the understanding that if any grower wanted to plant this cotton voluntarily after he understood just what the picture is, enough seed could be sold to 8 or 10 growers to plant not to exceed 100 acres each. The grower who planted the original seed was to be permitted to plant the pure seed produced and enough seed to isolate this properly.

We were recently approached with the idea that we permit this grower to save all of the seed at his own expense, subject to our control, until it was determined whether Congress would pass a bill which he has had prepared as follows:

1. Wherever, in any State of the United States, any farmers are maintaining acreage for the investigation or breeding of improved varieties of any agricultural products, such acreage shall be absolutely exempted from any Federal legislation which provides for acreage allotment or any acreage restriction, for any reason or cause whatsoever.

2. Such exemption shall apply for the first year seed planting and second year planting and third year planting, where such plantings are sponsored by any recognized public agencies, as above defined.

3. Such exemptions may be extended by the Secretary under certain conditions and for certain reasons.

4. The act is to become effective immediately as an emergency measure because of experimental plantings now in existence throughout the United States which may face disaster if such exemption is not granted.

This request was not granted, however the grower saved some seed beyond the original agreement and has been told that the Distributors could have no part in sponsoring or approving such a bill.

SACKS:

The new grade of burlap used this year has eliminated the trouble with splitting of bags.

We have been trying for several years to settle on a new size bag that would accomodate both fuzzy and delinted seed without carrying two sizes of bags which would make the cost prohibitive.

We are considering a bag that will hold about 86 lbs. fuzzy and 100 lbs. to 110 lbs. delinted. You will be notified later about size.

You may be solicited to buy your sacks from other companies. If you do this you MUST advise the Distributors so they will not order sacks and have to carry them over. Remember that all sacks have to be of UNIFORM SIZE AND QUALITY and ALL SEED MUST BE SACKED IN THESE NEW BAGS.

GROWERS RESERVES:

The 1951/52 Reserve account amounting to $13,329.23 can be paid out before June 30, as funds become available. This is the only Reserve account the Distributors owe.

SEED POOL SETTLEMENTS:

This will be made on the same basis as last year. 75% on actual tonnage and 25% on the acreage basis.

OIL MILL PRICE POOL:

Due to the several prices paid for oil mill seed, this will have to be handled on a pool basis as in the past. Those receiving more money at the average price than they paid out, will have to contribute to the pool.

SHAFTER STATION AND OHANNESON "40":

1. The greenhouse ordered constructed at the Annual Meeting has been completed. This will be deeded to the County of Kern as soon as the lien period is up.

2. The new laboratory has been finished and the humidifier which we installed has not been accepted as yet.

3. Our lease on the Ohanneson "40" has been renewed.

SEED PRICE AND EXTRA CHARGES:

Your Committee met and Manager submitted cost figures presented by most of the Cooperators. Some sent in partial figures and some, none at all. An analysis of each item was also presented for discussion. The trend of all figures was upward.

			Recommended Cost per Ton
1.	EXTRA GINNING	Due to some increase in rate paid for labor and other expense items, the committee approved an increase to	$ 7.00
2.	SACKS	Actual cost of sacks increased due to new material used, together with labor, twine, etc,	10.50
3.	HAULING, DISTRIBUTION, & HANDLING	Due to some increase in rates, variance in hauls, and the fact that in certain cases loading and unloading help has to be furnished, we felt this item should be	12.50
4.	STORAGE	Various rates presented averaged $3.45	3.50
5.	INTEREST	In past was figured on 6-month basis. Committee felt this should be 6% on 8-month basis	3.75
6.	TAXES	Due to lower valuation established by Kern County Assessor and rate from Valley locations presented, committee recommends	2.50

7.	INSURANCE	Committee felt this could remain the same	3.50
8.	HANDLING CHARGE	Manager stated this had to be $4.00	4.00
			$ 47.25

SPREAD — Due to fact this narrows down in proportion to amount of seed left unplanted, the return to grower and cooperator has been very low for several years. Therefore Committee recommends an increase from $23.03 to $26.82

Your Committee recommends that:

the Extra Charges per ton of seed for 1953/54 be set at	47.25
Average Oil Mill Price	53.93
And Spread	26.82
and Total Price of Seed for 1953/54 be	$128.00 per ton.

After discussing the price of treated and delinted seed at length, and in view of the fact that we establish a uniform price for fuzzy seed, your Committee recommends that all delinting plants in the state hold a meeting and try to arrive at a formula to equalize the loss ratio and establish a uniform charge and price for treated and delinted seed.

Recommended charges and seed price will be found in last column.

CHARGES PER TON OF SEED:

	1950/51	1951/52	1952/53	1953/54
EXTRA GINNING	$ 6.00	$ 6.00	$ 6.00	$ 7.00
SACKS & TWINE	8.50	12.80	8.50	10.50
HAULING	8.50	10.00	10.00	12.50
STORAGE	2.50	2.50	3.00	3.50
INTEREST	4.50	4.20	3.00	3.75
TAXES	3.50	3.50	3.00	2.50
INSURANCE	3.50	3.50	3.50	3.50
HANDLING CHARGE	2.50	2.00	2.00	4.00
Total	39.50	44.50	39.00	47.25
AVERAGE OIL MILL	100.66	73.70	67.97	53.93
SPREAD	19.84	19.80	23.03	26.82
SEED PRICE	$ 160.00	$ 138.00	$ 130.00	$ 128.00

In closing I want to thank the Directors, Cooperators, Gin Managers, and Growers for their continued support without which the Seed Program could not continue to be the envy of all cotton growing states.

Respectfully submitted,

Larry

L. B. Nourse, Manager

A 4-42 PLANTING DATA

	SEED SUPPLY	PLANTED ACRES	SEED PRODUCED
1945-46	145 Lbs.	33	16 Tons
1946-47	16 Tons	560	125 Tons
1947-48	125 Tons	7,500	2,411 Tons
1948-49	2,411 Tons	88,278	25,342 Tons

Note: Part of this acreage was isolation seed from which no seed was saved.

1949-50	18,710 Tons	963,000	17,809 Tons

Note: The 17,809 Tons were obtained from 52,000 acres of Registered seed included in the 963,000 acres.

1950-51	12,367 Tons	583,000	23,252 Tons

Note: The 23,252 Tons were obtained from some 39,000 accepted acres of Registered seed included in the estimated 583,000 acres.

1951-52			
Current	23,100 Tons	1,329,000	33,734 Tons
Reserve	2,081 Tons		
Gin run	4,200 Tons		
	29,381 Tons		

Note: The 33,734 tons were obtained from 63,665 accepted acres of reproduction seed included in the 1,329,000 acres.

1952-53			
Current	30,047 Tons	1,406,000	34,393 Tons
Reserve	497 Tons		
	30,544 Tons		

Note: The 34,393 tons were obtained from 83,003 accepted acres of reproduction seed included in the 1,410,000 acres.

1953-54			
Current	29,679 Tons	1,396,000	23,343 Tons
Reserve	2,334		
	32,013		

Note: The 23,343 tons were obtained from 71,306 accepted acres of reproduction seed included in the 1,396,000 acres.

A 4-42 Sales
1952-53

	Total Tons Produced	In State	Out of State	Milled	Taken into Reserve
Parent	160	95	00	00	65
Purple	2,021	2,021	00	00	00
Green	33,044	27,563	00	4,509	972
	35,225	29,679	00	4,509	1,073

RESERVE

Parent	65
Purple	00
Green	972
	1,037

A. A. BROCK
DIRECTOR

BUREAU OF PLANT PATHOLOGY
GILBERT L. STOUT
CHIEF

STATE OF CALIFORNIA
Department of Agriculture
SACRAMENTO 14

January 8, 1954

AIR MAIL

Mr. L. B. Nourse, Manager
Calif. Planting Cotton Seed Distributors
2201 F. Street
Bakersfield, California

Dear Larry:

Thank you ever so much for your letter of December 28, 1953, and for the invitation to your Mid-Year Meeting on January 20, 1954, at the Tagus Ranch Barbecue Restaurant. I very much appreciate your invitation and wish that I could attend. However, I must be in Portland, Oregon, at that time for some conferences for which the dates cannot be changed.

I am attaching a summary of our surveys this year for the cotton angular leaf spot disease. It is of interest that out of the 358 fields examined in 8 counties, 103 of them were overhead sprinkled and the disease was found in 24 of the latter. It was not found in any of the furrow irrigated fields. We did make it a special point to see as many overhead sprinkled fields as possible, but included also as many furrow irrigated fields as time would permit. Otherwise the survey was of a checkerboard type with examinations being made at more or less regular intervals as the inspectors went through the cotton areas.

In addition to the field inspections of cotton plants in the actual plantings, examinations were made of about 41,700 bolls from 802 properties by state and county personnel in connection with the surveys for pink boll worm. The state entomology personnel and the county personnel cooperated with us in this work. In the collections made in connection with the pink boll worm surveys the disease was found in boll samples from four fields. These were from four of the same fields in which the disease also was found during the field inspection of the cotton plants.

Best wishes for a very successful meeting.

Very truly yours

Gilbert L. Stout

Gilbert L. Stout, Chief
Bureau of Plant Pathology

GLS:fsq

INSPECTIONS FOR ANGULAR LEAF SPOT OF COTTON
CALIFORNIA
October - December --1953

State and County Departments of Agriculture

County	Properties Inspected in Field			Properties Infected		
	Overhead sprinkled	Furrow Irrigated	Total	Overhead Sprinkled	Furrow Irrigated	Total
Fresno	15	3	18	15	0	15
Kern	63	18	81	6	0	6
Madera	3	43	46	1	0	1
Tulare	17	72	89	2	0	2
Kings	5	51	56	0	00	0
Merced	0	52	52	0	0	0
Imperial	0	4	4	0	0	0
Riverside	0	10	10	0	0	0
Total	103	253	358	24	0	24

In addition to the field inspection of cotton plants in the actual plantings examinations were made of bolls collected by state and county personnel in connection with the surveys for pink boll worm as follows:

Kings County	3,200 bolls examined	from 32 properties
Fresno County	38,500 " "	" 770 "
Total	41,700	802

The state entomology personnel and the county personnel cooperated with us in this work. In the collections made in this manner the disease was found in boll samples from four fields in which same fields the disease was also found during the field inspection of the cotton plants. The disease was not found in any of the other boll samples.

A. A. BROCK
DIRECTOR

BUREAU OF PLANT PATHOLOGY
GILBERT L. STOUT
CHIEF

STATE OF CALIFORNIA
Department of Agriculture
SACRAMENTO 14

January 25, 1954

Mr. L. B. Nourse, Manager
California Planting Cotton
Seed Distributors
2201 F Street
Bakersfield, California

Dear Mr. Nourse:

On November 10, 1953, we received a sample of cotton seed sent by Mr. Ray Hoekstra of your organization. The specimen was labeled "B.B.I." and the letter of transmittal requested examination for the presence of the bacterial blight organism.

This letter is to confirm information given to you by Mr. G. L. Stout regarding this specimen during a phone conversation on December 28, 1953.

Examination for bacterial pathogens in the seed received was directed along several lines. The entire lot (approximately 1½ pounds) was examined grossly for evidence of abnormal or discolored seeds. Eight slightly discolored seeds were found and picked out for further examination. Two flats of seeds were planted in the greenhouse and held for examination of the developing plants. At the end of three weeks the plants had developed two leaves in addition to the cotyledons. None of the plants showed any evidence of bacterial infection.

The eight discolored seeds were at this time macerated in sterile water. A portion of the resulting suspension was cultured on nutrient medium and a portion was atomized over one of the flats of young plants in the greenhouse after mechanically injuring some of the leaves. No bacteria grew in the cultures and none of the atomized plants developed bacterial infection.

About one half pound of the remaining seed was macerated with sterile water in a mechanical homogenizer. A portion of this suspension was cultured and also inoculated into mechanically injured plants in the second flat. The cultures were negative for bacterial growth and none of the plants developed bacterial infection.

The conclusions are that no evidence of the bacterial blight organism was found in the sample of seed when examined as described above.

Very truly yours,

C. G. Weigle

C. G. Weigle
Assoc. Plant Pathologist

CGW:dsc

250

DISTRIBUTORS OF CALIFORNIA A 4-42 ACALA PLANTING SEED

DIRECTORS:
H. L. POMEROY
R. H. OESTING
FLOYD NELSON
JOE CARDWELL
L. A. HARNISH
KENNETH FRICK
MARVIN FARLEY

CALIFORNIA
PLANTING COTTON SEED DISTRIBUTORS
2201 F STREET
TELEPHONE 4-6538
BAKERSFIELD, CALIFORNIA

MANAGER-SECRETARY-TREASURER
L. B. NOURSE

February 7, 1954
6

Dear

I thought this copy of a letter regarding the Angular Leaf Spot or Bacterial Blight would be of interest to you.

The sample mentioned was a composite of seed taken from Purple Tag fields which produced Green Tag seed that will be planted this season

L. B. Nourse, Manager

C O P Y

Bureau of Plant Pathology
Gilbert L. Stout
Chief

STATE OF CALIFORNIA
DEPARTMENT OF AGRICULTURE
Sacremento 14
January 25, 1954

Mr. L. B. Nou[redacted]e, Manager
etc.,_____

DISTRIBUTORS OF CALIFORNIA A 4-42 ACALA PLANTING SEED

DIRECTORS:
H. L. POMEROY
R. H. OESTING
FLOYD NELSON
JOE CARDWELL
L. A. HARNISH
KENNETH FRICK
MARVIN FARLEY

CALIFORNIA
PLANTING COTTON SEED DISTRIBUTORS
2201 F STREET
TELEPHONE 4-6538
BAKERSFIELD, CALIFORNIA

MANAGER-SECRETARY-TREASURER
L. B. NOURSE

December 9, 1953

M O S T I M P O R T A N T

PROPER SEED TREATMENT

1. We have just seen some CALIFORNIA DEPARTMENT OF AGRICULTURE tests on Ceresan treated seed which show that very little Ceresan was on the seed.

2. These tests were run in connection with investigation of the Angular Leaf Spot.

3. Proper treatment of seed is the ONLY PREVENTATIVE measure for this disease other than to fallow your ground or other expensive measures.

4. It is important that you properly supervise the application of treating material.

5. We have talked with several who are in charge of delinting plants who could not say what type of treatment they were using or what rate per 100 lbs. of seed was being applied.

6. We have never had to be bothered with State or Federal regulations in the seed program as yet due to your cooperation, but unless this condition is corrected at once and constantly watched, we have been told that such regulations will have to be imposed.

7. Even though you think your treatment is okay, be sure to check into it at once and keep checking. You are charging for a service and if it is not as prescribed or recommended, results will be disastrous.

8. With Angular Leaf Spot with us, it is doubly important that your treatment of all seed planted is correct for the growers' protection as well as your own.

9. WATCH YOUR RATE OF APPLICATION and LET US KEEP AWAY FROM GOVERNMENTAL REGULATIONS.

Yours respectfully,

Larry

L. B. Nourse, Manager

DISTRIBUTORS OF CALIFORNIA A 4-42 ACALA PLANTING SEED

DIRECTORS:
H. L. POMEROY
R. H. OESTING
FLOYD NELSON
JOE CARDWELL
L. A. HARNISH
KENNETH FRICK
MARVIN FARLEY

CALIFORNIA
PLANTING COTTON SEED DISTRIBUTORS
2201 F STREET
TELEPHONE 4-6538
BAKERSFIELD, CALIFORNIA

MANAGER-SECRETARY-TREASURER
L. B. NOURSE

October 31, 1953

PREVENTATIVE MEASURES RATHER THAN
POSSIBLE STATE REGULATIONS
FOR CONTROLS OF
BACTERIAL BLIGHT OR ANGULAR LEAF SPOT

Dear

Am confirming our phone conversation or direct contact with you or your gin managers relative to the above disease which is spreading in SPRINKLERED COTTON FIELDS as follows:

(1) ORIGIN OF DISEASE AND PREVENTATIVE MEASURES:

(a) Original infestation could only have come from seed imported from an infested area.
(b) It has been found so far, 40 miles from the original discovery in the Caruthers area and there may be more in other areas.
(c) It is a Bacterial disease and experiments show that a gin cannot be cleaned up unless completely sterilized after contaminated cotton is run through it.
(d) Spreads by rain or similar assimilated condition such as SPRINKLING.
(e) Has not been found in row irrigated fields, must have free water on plants.
(f) Treating with Ceresan or acid delinting or any suitable disinfectant, if job is well done, WHICH IS NOT ALWAYS THE CASE, eliminates the surface disease. The bacteria gets into the seed from heavily infested fields for which there is no treatment.
(g) Lives over in trash and stalks. Cure is to shred stalks, cover early about six inches and irrigate immediately to rot trash or keep out of cotton for one year.
(h) Is spread by implements unless thoroughly cleaned before being transported to another field.

(2) WHAT HAS BEEN DONE BY THE DISTRIBUTORS:

(a) No Purple Tag has been permitted to be planted in sprinklered fields; or if it was planted by mistake, no seed is saved.
(b) Since its spread this year, one cooperator having only a single unit gin within the infected area will not be permitted to save planting seed as he will process sprinklered cotton.
(c) Another gin which has saved considerable planting seed and is now going to gin sprinklered cotton has been told to save no more seed even though no infected fields have been found.
(d) In another area where an infected field has been found where the cooperator has several units, planting seed is being segregated from the sprinklered cotton.
(e) Some cooperators who have only single gins will process no sprinklered cotton.
(f) All cooperators have agreed to segregate planting seed from SPRINKLERED COTTON.

(3) WHAT HAS BEEN DONE BY AGRICULTURAL COMMISSIONER WHERE INFESTATION HAS BEEN FOUND:

(a) A local quarantine has been established requiring:

1. All sprinklered cotton must go through one gin.
2. Ranches have been quarantined to the extent that materials or machinery can be removed from the ranch only under certain conditions.

Bacterial Blight or Angular Leaf Spot October 31, 1953

I M P O R T A N T

(4) WHAT MUST BE DONE IN THE WAY OF PREVENTATIVE MEASURES:

(a) Where you have two or more gins on the same property, planting seed must be run through one gin and any sprinklered cotton through the others.

(b) Where you have several gins in an area, sprinklered cotton must be channelled through a gin that is not handling planting seed. Even though you think there is no disease in the fields, this is hard to determine.
The first reaction to this is -- it cannot be done. Some cooperators are doing it. IT IS BETTER TO DO IT NOW THAN TO HAVE THE POSSIBILITY OF SOME GOVERNMENTAL CONTROLS. It is much cheaper to switch one customer rather than be tied down with red tape.

(c) If you are handling no sprinklered cotton you have nothing to worry about; but if some outside customer brings in his cotton, it is easy enough to ask if it is from a sprinklered field.

(d) It is important that all seed used for planting be treated whether fuzzy or delinted and that no grower be permitted to take his seed home that is not treated.

This may seem like a lot of trouble, but it is much easier and cheaper to do this preventative work now than to try to correct a condition later.

I have talked with the Department of Agriculture. They do not want to establish State regulations, but may have to unless WE VOLUNTARILY carry out the above measures.

Yours respectfully,

Larry

L. B. Nourse, Manager

ANNUAL MEETING
of

MEMBERS, DIRECTORS AND COOPERATORS

CALIFORNIA PLANTING COTTON SEED DISTRIBUTORS

Tagus Ranch Barbecue Restaurant
Tagus, California
July 29, 1953

REPORTS:

1. Managers from January 1, 1953 to June 30, 1953.

2. Auditor's from July 1, 1952 to June 30, 1953.

VALUE OF SEED SOLD:

1. Current and Reserve- $4,601,909.00

COSTS:

1. Reports of July 1952 and January 1953 showed that these would increase. In some instances they increased above your manager's estimates caused by;

   A. Unforseen re-sacking of Reserve seed.
   B. Maintaining same seed price in all valleys.
   C. Added cost and amount of supplies due to increased tonnage, addition of new Cooperators and handling and distribution of large Reserve.
   D. Moving to new quarters and purchase of some new equipment.
   E. Additional meetings with Growers and University,

SEED POOL SETTLEMENTS:

1. All figures are complete. The return to the Growers will be $10.24 per ton. Slightly higher than last year.

2. Some Cooperators will OWE MONEY to the pool, others will RECEIVE money. In order that all accounts may be settled promptly, those who receive a statement which calls for the PAYMENT TO THE DISTRIBUTORS must send their checks at once, as those who are to RECEIVE money cannot be paid until checks are received.

3. Settlement to Growers will be on basis of 75% on actual tonnage and 25% on acreage percentage basis. This follows the approved recommendation of Mr. Nelson's committee on pool settlements.

4. The SPREAD has been changed. The Grower receives the first $7.50 and 50% of the balance.

5. DO NOT DELAY IN RETURNING YOUR CHECK WHEN YOU RECEIVE THE FINAL STATEMENT.

AVERAGE OIL MILL POOL SETTLEMENT:

1. Due to the several prices paid for oil mill seed, this has to be handled on a pool basis.

2. With comparatively few tons ginned at the lower prices, only a few Cooperators will OWE money but it is necessary that they return their checks promptly.

3. Differences between January and June tonnage figures have been adjusted by adding or subtracting at the average oil mill price.

ACREAGE FOR REPRODUCTION:

1. Approximately 85,000 acres of Purple Tag and 4800 acres of Parent seed are planted in the San Joaquin Valley and Imperial but none in the Coachella and Blythe Districts.

2. There is still some carelessness as to proper isolation. In spite of isolation maps being furnished and many visits to gins, we will loose production from some of our best Parent fields. This neglect on the part of some gins cancels out years of research work besides the possibility of causing a shortage of reproduction seed.

3. Due to the uncertainty of quotas and total acreage to be allowed California, we could not afford to reduce the acreage planted to reproduction seed. This will necessitate the same supervision as though we were planting the present acreage so that operating costs will not be reduced for the time being at least.

   Considering the adverse planting season, it is fortunate that we planted the same acreage as there are many late fields from which little or no seed may be saved.

SEED SAVING:

1. This will be difficult for Mr. Frost's committee as there is no way at present that even an estimate can be made of tonnage required.

2. If allotments are established and depending upon the cut we will have to take, Cooperators will doubtless be put on a quota basis and some will have to stop saving seed even before they have sufficient for their own use in order to balance the total supply.

GERMINATION AND TAGGING:

1. Germination tests, were high this year.

2. There has been no change in the tagging law; therefore all seed must be tagged as in the past. Everyone did an excellent job this year.

RESERVE SEED:

1. All of last years 2300 tons have been sold with the exception of 10 tons.

2. We unexpectedly had to re-sack a great deal of this seed.

3. All Cooperators were warned before delinting season and again in January that we could not afford to have any seed to carry over. That this was important to eliminate the chance that there would be any brown cotton showing up another year. That they would have to so regulate their supply by leaving a part fuzzy and part delinted only, so that any surplus could be milled. With one exception this was carried out very well, but we have 1000 tons to take into the Reserve.

If outside seed taken in one Cooperator will have to pay planting seed price ...

   A. This Reserve applies only to seed produced by Cooperators within their seed pools, none that was purchased from other pools.

4. The Special Committee appointed at the mid-year meeting to recommend a control on the amount of treated and delinted seed the Distributors have to take into the Reserve, met and made the following recommendation;

Thompson ... Jensen

   A. That all Cooperators must send in accurate reports promptly when requested.

   B. That each Cooperator must estimate his requirements at the beginning of the year for his first planting and treat and delint only this amount. The balance of his supply to be held as an emergency backlog for replanting and left in a fuzzy state or delinted only.

   C. That any Cooperator who fails to comply with this would have to carry over the surplus of treated and delinted seed above the amount that the Distributors decided to take into the Reserve and report this amount in as sold at planting seed price.

   D. That any Company or Cooperator over-ordering seed from another pool will be obligated to carry this seed over until the next season.

   E. That any seed not reported in by June 15 by any Cooperator that belongs in his seed pool will have to be carried over and reported in as sold at planting seed price.

A copy of this was sent to all Cooperators.

Your committee recommends the adoption of these rules.

SACKS:

1. For the first time and unexpectedly we had to resack a considerable portion of our Reserve seed due to:

   A. Overloading the sacks with delinted seed, some sacks running to 150 lbs. which caused the seams to split. This is too much weight for handling.

   B. The strands in our present bags are strong in only one direction and were designed to hold approximately 90 lbs. of fuzzy seed.

2. This unexpected expense caused a considerable part of the increase in our operational costs.

3. To help eliminate this in the future, we have ordered a supply of 10 oz. bags after experimenting with a small supply last year. They make a better looking package and will withstand harder treatment.

4. YOUR MANGER RECOMMENDS THAT ALL COOPERATORS BE REQUIRED TO PUT ONLY 110 LBS. IN EACH BAG.

5. We have been approached with the idea of using over old bags after being cleaned. The old bags may look okay but from experience will not hold up. Another reason this cannot be done is that there are not enough available for everyone. We cannot charge some for new bags and permit others to use a cheaper article.

6. Your supply of sacks have been ordered so let our office know your needs as soon as possible as these sacks will be made up soon and deliveries must be made.

7. ALL SEED MUST BE SACKED IN THESE NEW BAGS.

GROWERS RESERVE

1. Our loan and interest of $79,365.73 to the Berkeley Bank has been paid off which permitted us to pay off Growers Reserves.

2. Growers Reserves for 1949/50 and 1950/51, amounting to $13,177.00, have been paid.

3. Your manager has applied to the Berkeley Bank for Cooperatives for a line of credit not to exceed $75,000.00. We may not need to use this loan unless collections should be too slow.

   Your manager recommends that the President and Secretary be authorized to borrow sufficient funds to carry the Reserve Seed if and when found necessary up to a limit of $75,000.00.

SHAFTER STATION AND OHANNESON 40.

1. Mechanization work is being carried on as usual on the 40 with the cooperation of the U.S.D.A. and small contributions from the University of California.

Shafter Station and Ohanneson 40 (Continued)

2. Our 5 year lease on this 40 expires this December. We must notify the owner by October 31 if we will exercise our option to renew. Your manager recommends that the lease be renewed.

3. Kern County is erecting a new cotton testing laboratory at the Station. The Distributors are installing the proper humidifying and cooling system at a cost o $1935.00.

4. At the request of the U.S.D.A. and with the permission of Kern County, The Distributors are erecting a greenhouse and headhouse on the Station grounds at a cost of $14,584.00 which will belong to Kern County after completion.

5. As usual we have sent our check to the Treasurer of the United States to pay the salaries of the non-technical help on the Station. The amount is $10,026.01.

DEFOLIATION PROGRAM:

1. Work is progressing under the leadership of Dr. F. T. Addicott.

2. We have again sent a grant of $20,000.00 to the University.

WEED CONTROL PROGRAM:

1. This is a new research program set up with the University of California at Davis headed by Professor V. I. Cheadle, head of department of Botany, and with Dr. Lovvorn of the U.S.D.A. at Washington, D.C.

2. A meeting was held at Davis between Dr. Cheadle, Dean Briggs, Prof. Madson, Dr. Lovvorn, Mr. Pomeroy, George Harrison, John Turner, and your manager.

   As usual the University was short of funds. The U.S.D.A. put $13,000.00 in their budget for this work and it was decided that in order to get the program started, the Distributors would advance a grant to the University of $10,000.00.

   Dr. Cheadle reports that they expect to have Chester L. Foy report to the Shafter Station in August to start the work.

STRAIN TESTS:

1. As reported before, these are necessary to combat some of the dissatisfaction voiced last year by growers and to obtain additional information.

2. Tests under Mr. Turner's supervision have been placed in the vicinity of Chowchilla, Firebaugh, Visalia, Shafter, and the Imperial Valley. All Growers have signed contracts so we may keep track of the seed.

3. We have employed Audy Bell of Wasco, a young top flight graduate of Fresno State, who will keep records on the plots for Mr. Turner and will work on the Station in his spare time or assist us in inspection work.

STRAIN TESTS: (Continued)

4. This will give growers in various districts the opportunity to compare the strains under their conditions.

P-18

1. There are some who still insist that P-18 is the best cotton. There is considerable planted but it is hard to locate because no one wants to admit he has it.

2. At our request, the Western Cotton Shippers at their convention went on record urging all growers to plant A 4-42 because P-18 is not in demand.

3. We have contacted the shippers inquiring whether it would not be possible for the buyers to require a grower to sign a statement to the effect that he planted A 4-42 before he can sell his cotton.

   This stems from the fact that growers do not seem to be honest enough to declare it as P-18 but are willing to have it sold as A 4-42 thereby jeopardizing the future of California cotton.

   One reaction from a buyer was that we should not say too much about it as it will gradually eliminate itself. However, one farm advisor is of the opinion they have at least 3000 acres in his county alone.

4. If we find P-18 going through the same gin with our A 4-42 planting seed, no seed will be saved.

INSURANCE:

Unless the oil mill price increases beyond our average price of $67.96, insure the new planting seed for $130.00 per ton. If it starts to increase at ginning time you will have to add the increase to the $130.00. If it should open at less than the average of $67.96, you will have to subtract the difference from the $130.00.

Unless you report the correct figure, and you have a loss, you are still responsible to the Grower for the spread. A uniform basis of value clause must be signed by your agent and attached to your seed policy. A supply will be sent to you after this meeting.

ANGULAR LEAF SPOT:

We will continue to reject seed fields where sprinkler systems are used until more is known about the cause of spreading this disease.

SEED CLEANING:

Some new equipment is being installed in delinting plants each year but there is still room for improvement.

IMPERIAL, COACHELLA AND BLYTHE

1. Imperial and Coachella produced 1500 tons of green tag last year for the first time. To complete the planting we shipped approximately 1250 tons of Reserve and current seed, a total of 2750 tons. Blythe produced no seed but used an estimated 600 tons.

2. Last year being the first year of production, several problems confronted us;

   A. An early rumor was started by some one from the San Joaquin Valley to the effect that seed produced in the Valley would not be fit for planting. Germination tests and planting disproved this but some growers demanded San Joaquin seed. The earliest seed was not saved however due to high moisture content.

   B. Even though these districts are widely separated from the main cotton growing area, your manager felt that one seed price should be maintained in all valley's at least for the first year. Those Cooperators producing seed agreed with this even though it meant that they and the Distributors would have to absorb some loss. This also meant that those companies purchasing seed for their customers had to sell at the delivered price.

   C. There were no delinting facilities where our seed could be processed without danger of getting mixed with seed from outside areas so we are indebted to Fred Sterzing, Manager of the Southwest Flaxseed Assn., for their willingness to put in a special delinting plant to process our seed.

   D. In January it was thought that Imperial would petition the Legislature to come under the One Variety Cotton Act. This did not materialize, but they may do this in the future.

3. Considering that it was a first years operation it was very successful and we received 100% cooperation from everyone.

SHAFTER FIELD DAY:

1. Do we want a field day this year and if so, what date?

2. It has been suggested that we have two days; one for our cooperators and the gin managers as usual, and one for growers the following day.

3. There would still be a lunch for the cooperators and gin managers as we can get a definite count, but for the growers it would be widely publicized and no arrangements for feeding them would be made.

4. The purpose of the growers meeting would be to familiarize them with the work of the Station and the seed program.

In closing I want to thank the Members, Directors, Cooperators and those working with me, for their support, without which the seed program could not go forward.

Louis Nourse

L. B. Nourse, Manager

SEED DATA:

A 4-42

ACREAGE

	1952-53	1953-54
Parent	4,815	4,227
Purple	90,000	81,000 Estimated
Green	1,305,185	1,314,773 Estimated
	1,400,000	1,400,000

RESERVE STORAGE

Parent	80 Tons	65 Tons
Purple	2	0
Green	2252	966
	2334	1031

SALES

1952-53

CURRENT SEED

	Production	In State	Out of State	Milled	To be taken into Reserve
Parent	160	95	0	0	65
Purple	2,025	1,846	0	179	0
Green	33,045	27,632	60	4,387	965
	35,230	29,573	60	4,566	1,030

RESERVE

Parent	80	79	1	0	0
Purple	2	2	0	0	0
Green	2,252	1,892	350	0	10

2334

ANNUAL MEETING

of

MEMBERS, DIRECTORS AND COOPERATORS
CALIFORNIA PLANTING COTTON SEED DISTRIBUTORS

Hotel Tulare
Tulare, California
July 30, 1952

REPORT:

Following is a report of the California Planting Cotton Seed Distributors from January 1, 1952 to June 30, 1952. The Auditor's report covers the period from July 1, 1951, to June 30, 1952.

VALUE OF SEED SOLD:

The total value of seed sold including the Reserve was $4,261,567, an increase of $400,000 over last year.

COSTS

Will increase materially this coming season for several reasons.

1. We have a total of 36 Cooperators producing seed against 22 last year. This is a gain of 14.

2. We have added three men to our staff.

Charles Cleary to replace Bob Martin	2690 - 3rd. Ave., Merced
Ray Hoekstra to assist south of Fresno	210 Brower Bldg., Bakersfield
Tom Cherry Jr., Coachella and Imperial	1460 Brighton Ave., El Centro

We have been fortunate to secure the services of these men on a six-month basis, and they are doing an excellent job.

3. We have agreed to employ George Harrison as of July 1.

The above changes and additions to salaries will require increases in supplies and traveling expenses.

After 14 years of invaluable service, Bob Martin is not with us any more for two reasons:

1. His farming operations have become too large.

2. About 5 weeks ago Bob was injured on his brothers cattle ranch which he manages. He has been in bed ever since.

The Distributors are greatly indebted to Bob and the Directors should pass a resolution of appreciation.

SEED POOL SETTLEMENTS:

Although the seed pools have not been settled, equalization figures are near enough complete to estimate that the pooling price should return between $7.00 and $8.00 per ton above oil mill price to the Grower, slightly lower than last year.

We will have on hand approximately 2,500 tons of treated and delinted seed for the Reserve, and will have milled some 1,200 tons of fuzzy seed. Funds to carry the Reserve will be borrowed from the Berkeley Bank.

As in the past, this seed is being taken into the Reserve on actual weight, with the understanding that it will be sold first next year before other seed by the Cooperators who produced it. They will return the regular planting seed price to the Distributors, keeping the extra charges for treatment.

RECOMMENDATIONS:

1. Your Manager recommends that if we decide to ship any planting seed out of California next year, that this Reserve be used for that purpose. In this way we can keep our steps in Wilt Resistant seed current in California.

2. Mr. Nelson's committee recommends that the pool settlement be on the basis of 50% acreage and 50% tonnage.

When all seed is not sold, this reduces the spread to the Grower. This means that the producer of the seed is penalized for carrying the surplus for all Growers in the State. Some adjustment should be made that will make all Growers stand this cost, and the only place it can be taken from is the spread.

3. Your Manager recommends that some consideration be given this matter before the January meeting, since all costs returned to the Cooperators have increased from 25% to 80% since 1945.

AVERAGE OIL MILL POOL SETTLEMENT:

Due to the several prices paid for oil mill seed and the fact that each Cooperator saved different amounts at the various prices, as in the past, this has to be handled on a pool basis. Example:

"A" ginned the following tons at various prices of $75-72-70-67.

Total Tons	Total Value all prices	Value Average price	Loss
1,289.62	$95,674.71	$95,044.22	$630.49

"B" ginned the following tons at various prices as above.

570.28	$41,813.82	$42,029.29	$215.47

Where there were differences in the total tons reported in January and the total tons on the Auditor's voucher, this difference will be adjusted by multiplying the difference by the average oil mill price of $73.69 and adding or subtracting the amount from the total value. There is little excuse for much variation.

The average oil mill price was a drop of $22.97 over last year.

Some Cooperators will owe money to the pools. If you are one of these, please send in your check at once when you receive the final statement, otherwise, we cannot settle with the Cooperator who has money coming, and this delays settlement to some of the Growers.

ACREAGE FOR REPRODUCTION:

There are some 90,000 acres of purple tag seed in the San Joaquin, plus some 4,800 acres of Parent seed. Some 5,000 acres have been planted in the Imperial and Coachella Valley. This includes acreage that may be rejected.

Last year we had to reject between 20% and 75% in some districts in this Valley due to neglect of fields.

A list of acreage which was not suited for reproduction purposes was sent to Cooperators with a request that it not be planted again. We hope that our rejections will be less this year, even though one or two did not comply with our request.

A few members and gin managers still feel that weed control is not important to their own operations or for good seed.

The matter of keeping fields clean is not entirely the responsibility of the Distributors. Growers, Gin Managers, and Cooperators can do a lot to help correct this condition by better growing methods and closer supervision in ginning and sacking seed.

SEED CLEANING:

This goes hand in hand with field inspections. Since the advent of mechanical pickers it is becoming increasingly difficult to eliminate weed seeds in cotton. Some weeds grow at a time when no one can get into the cotton and these are taken in by the picker.

Your Manager feels there are three things that will help and one real solution.

1. Better farming practices with later mechanical cultivation.

2. Increased return to the Grower. The maximum return of $12.21, providing all seed is sold when broken down to an acre basis, is not enough to carry on much weed control, since we save on an average of 800 to 1,000.

3. More cooperation and supervision by the Gin Managers and Ginners.

4. The one real solution is more adequate cleaning machinery at the delinting plants.

The only guide that the Distributors have as to weed seeds, until the seed is planted, is the result from the State Seed Laboratory on samples sent in for testing, as to purity and germination.

With the installation of cleaners last year fewer complaints were received. More cleaners are being installed this season.

GERMINATION TESTS AND TAGGING:

All Cooperators but two are to be complimented for properly tagging seed last season. We had only two complaints from State Inspectors.

To be on the safe side, all sacks must have a germination tag on them before sold.

Each Cooperator is furnished with a supply, and whether the tag is put on the sack at his warehouse or the delinting plant, it is his responsibility to see that the tagging is done.

The law requires that the lot number on the seed tags correspond to that on the germination tags, and these both belong to a particular sack and lot. Due to the fact that many tags get torn off in handling, it may be necessary to stencil the lot number on each bag. We have discussed this matter with the State, and if it has to be done, you will be notified in plenty of time.

SEED SAVING:

At the time fields are planted, there is no way to estimate the tons of surplus planting seed we may have. For this reason, your Manager believes a larger acreage of reproduction seed is justified. If it looks as if we will have too great a supply later in the season, we can always stop saving.

As it turns out, we have a large carry over, but if there had been two more weeks of bad weather, this would have been used up. This may mean, as in the past, we may have to place a quota on each gin as to the amount of seed they can save, so that our total supply is not out of line. This also means that some Cooperators would have to stop saving before they even reached the tonnage needed for their own use.

P 18 COTTON:

This is our old strain. There are still two or three growers who still persist in planting, and are willing to jeopardize the future of their neighbors and the reputation of California cotton, by taking chances of having it mixed with A 4-42, thus causing rejections by some mill that unknowingly gets it.

There is no law against the planting, but the Cooperators who receive the cotton from these fields should see that the seed is not saved. They should also see to it that the buyers are informed that it is P 18. No Cooperator can afford to jeopardize the future of California cotton for the few dollars they will gain by ginning this cotton, and permitting the seed to be saved.

If we find that P 18 is to be run through a gin that is supposed to save A 4-42, no seed will be saved at that gin.

Several Cooperators have two gins. A 4-42 will have to be run through one exclusively or the seed will be rejected.

This applies to Coachella and Imperial where some Arizona 28 and 44 are planted.

ANGULAR LEAF SPOT:

This infestation was discovered last year by the University in a northern field.

In discussing the matter with Mr. Harrison, from the little that is known about it, there is a possibility that it may come from a continuous over-damp condition that could be caused by sprinkling. Your Manager decided that no seed would be saved from sprinkled cotton.

He was of the opinion that the matter had been discussed with each Cooperator. Either conversations were forgotten or he was in error. However, whenever we have rejected a field, the owner or his foreman has been contacted, and we have had no complaints except from one Cooperator.

We cannot take any chances no matter how remote the possibility of an infestation may be.

OUT-OF-STATE BUSINESS

No seed has been permitted to be shipped out-of-state for the past few years.

This year we received green tags sent to us by the Arizona Planting Cotton Seed Distributors taken from a shipment of seed to Arizona.

All Cooperators were warned that if this happened, their future allotment of Purple Tag seed would be cancelled.

This was done to one Cooperator. Upon investigation he proved that the tags came from sacks left over after delinting seed. That some of these sacks were filled with gin run seed and put on a truck for Arizona without removing the tags.

This same thing happened to some gin run seed shipped to Imperial and the tags were removed after delivery.

Lack of supervision at a gin or a delinting plant is inexcusable, and it takes a lot of trouble and time to straighten matters out. We have built a reputation in other states, and when we tell them that no seed will be shipped they believe us, but when our seed shows up it is hard to explain.

One truck load of Green Tag was sent to the Borego Valley by a grower, and when we explained the matter to him, it was returned to Kern County.

IMPERIAL AND COACHELLA VALLEY:

Early in the year a growers' meeting was held at El Centro to discuss the advisability of coming under the One Variety Act. This would keep the Valley to one strain of cotton which would eliminate a recurrence of what happened to the Valley some 30 years ago when all types of cotton were planted.

The chairman of this meeting was Marvin Farley who has agreed to serve on our Advisory Board. Previous to this meeting, your Manager had been approached by one Cooperator about placing reproduction seed in the Valley. It was felt that the request should come from all interested in the Valley.

Following this meeting your Manager met with several of the leaders and the four ginning companies, and offered to place some 5,000 acres of reproduction seed in both districts to start a seed supply for them, under certain conditions. This offer was accepted. They were warned that proper facilities for handling the seed would have to be installed.

These fields are under our contracts and everything will be handled as it is in the San Joaquin, with the exception that we may have to set up a separate seed pool settlement, due to difference in costs. This supply of seed will be used exclusively for these Valleys.

It is felt that the whole State should be under one seed organization, even though Mr Harrison may be able to develop a strain of Acala more adaptable to their climatic conditions. At present the A 4-42 is the best they can obtain.

We have employed Tom Cherry, Jr. to assist us in our field work and gin inspections. He sends in daily reports and is doing a very fine job.

We have recently been approached with a proposition to permit seed to be shipped into Mexico for treating and delinting, and then be returned to California for planting. Your Manager has rejected this proposal for three reasons:

1. It would defeat the purpose of producing pure seed by shipping to another Country or State where other varieties are grown, and no matter how close the supervision, there could be no guarantee that there would not be a mixture of seeds.

2. This proposition was rejected early in the season when it was presented by the ginning interests at Blythe. No seed was planted at Blythe.

3. It is doubtful that the Stste Department of Agriculture would permit such an operation.

SHAFTER STATION AND OHANNESON 40:

There have been some changes made as of June 30, 1952.

1. George Harrison has retired from Government Service, but retains a Collaboratorship with the U.S.D.A.

2. The Distributors have hired George in order to keep him in California to continue the work he wishes to complete.

3. We have a new agreement with the U.S.D.A. which spells out:

   A. The U.S.D.A.'s and the Distributor's duties in connection with the seed work.

   B. It appoints George as a Collaborator with the full facilities of the Station open to him to carry on his breeding work as in the past.

   C. The U.S.D.A. will send a man to the Station in January of 1953 subject to the approval of the Distributors as an understudy to work with George. Mr. Turner, breeder at Coastal Plains Station in Georgia, visited here July 15, 16, 17 to survey the situation.

4. The only thing that is changed is that George is employed by the Distributors instead of the U.S.D.A.

5. The agreement we now have is clearer and more definite than any we have had in the past.

6. The University will still carry on mechanization work on the O'Hanneson 40. Several meetings have been held with Dr. Sharp, Director of Experiment Stations, University of California.

7. As usual we have sent a check to the U. S. Treasury to take care of the salaries of the non-technical help on the Station which was for a total of $9,002.53 less credits built up, of $1,299.11 or $7,003.42.

GROWERS RESERVE:

Growers Reserves for 1947-48 and 1948-49 totaling $56,758.11 have been paid.

No payments of Growers Reserves can be made this season without permission of the Berkeley Bank.

SACKS:

The situation between India and Pakistan has settled somewhat. Part of the duties imposed have been lifted.

We have ordered our supply of sacks for your needs at an approximate drop of 20¢ per sack over last year.

Each Cooperator will probably be solicited by various companies to purchase your sacks direct in small quantities. If you order this way, after the Distributors have an assured supply for you and we are forced to carry over sacks that were intended for your use, it will only increase the cost of sacks to everyone.

We order over a half-million bags and we are able to be assured of delivery and prompt service. These bags are turned over to you at cost plus trucking.

A card has been sent out requesting number of sacks you will need this year. They are now being made up and will be ready for delivery soon. Please comply with this request.

All seed, as in the past, has to be sacked in new bags.

We have ordered 50,000 10-oz. bags which will be delivered to delinting plants on a pro-rata basis, as an experiment, to see if the heavier weight is better when filled. Cooperators who receive these bags are asked to keep them separate so that results may be observed.

TAGS:

Tags will be delivered direct to cooperators from the Eastman Tag and Label Company, some have already been forwarded. Please watch for these so they will not be misplaced.

We have endeavored to pick up all of last years tags, but if you run across an old box, destroy it as our lot numbers are different this year. If used, the State Inspector may reject the seed.

When seed was picked up, two lots had the tags sewed on to the sacks. All tags must be put on with hog rings. This has been our custom for years.

DEFOLIATION PROGRAM:

1. Dr. Addicott presented a budget of $20,000.00 for 1952-53.

2. Last year the Distributors agreed to carry this program from three to five years.

3. For this reason we sent in one-half or $10,000.00 before July 1, the other half to be sent in within a few days.

4. Dr. Addicott feels that during the year just past he has laid the foundation for his research and has now determined which way to go and obtain maximum results.

5. The University has again been asked to relieve Dr. Addicott of his heavy teaching load. We have some assurance that this will be done.

UNIVERSITY BUDGET HEARINGS:

A. Mr. L. Frick and Stan Jones attended the one at Davis, and your Manager and Mr. Tribolette of the California Cotton Cooperative Ass'n. attended the one at Riverside.

B. If cotton had not been represented little would have been said about a $450,000,000.00 crop.

C. Cash expenditures for administration for various stations were listed by the University as follows:

Antelope Valley	$ 12,516.00
San Jose	25,446.00
Hopland Range	50,000.00
Imperial Valley	72,167.00
Tule Lake	14,872.00
Range Management	64,000.00
Shafter Station	6,800.00

D. Indirectly the University spent $34,000.00 on crops including cotton at Shafter.

E. Citrus asked for $1,200,000.00 against a revenue of $125,000,000.00.

F. A resolution was presented at Riverside noting the value of cotton, industry's contribution to the University last year of some $80,000.00, and asking that the University reciprocate to the fullest extent. Also, we asked for them to relieve Dr. Addicott from his heavy teaching load.

G. Some feel it is partly our fault that we have received no more consideration. If this is a fact, we must correct the situation.

INSURANCE:

This is important. Unless the oil mill price increases beyond our average price of $73.69, insure the new planting seed for $138.00 per ton. If it starts to increase at ginning time, you will have to add the increase to the $138.00. If it should open at less than the average of $73.69, you will subtract the decrease from the $138.00.

If the values are not watched and you should have a loss, you are still responsible to the Grower for his interest in the Spread. The uniform basis of value clause must be put on your seed policies by your Agent. A supply of the forms will be sent you after this meeting.

COTTON EXPERIMENTAL AND RESERVE FUND:

This account was set up by a Resolution of your Board of Directors which include all reserve accounts; such as, Reserve for Contingencies, Shafter Station Fund, Foundation Seed Block or Mechanization 40, all of which have to do with experimental work on cotton.

The balance of funds left in this account are allocated for the following purposes.

1. Support of the Government's Winter Garden in Mexico which permits George Harrison to send his experimental seed to Mexico in October, have it planted and harvested in time to replant the seed the following spring at the Shafter Station. This gains one year and six months.

2. Installation of air conditioning unit in new fiber laboratory to be built by the Supervisors this year.

3. Proposed building and equipping of a green house at the Shafter Station to facilitate the study of cotton disease.

4. To guard against any loss incurred by the unforeseen drop in the market price of seed when we are carrying a large reserve supply from one season to the next.

5. Continuance of the Defoliation Research Program.

This is a repetition of last years report, but put in to refresh your memory and have it on record.

SHAFTER FIELD DAY:

Do we want to hold a field day this year? If so, when?

In closing I want to thank the Members, Directors, and Cooperators for their continued support, without which the seed program could not function.

L. B. Nourse

L. B. Nourse, Manager

SEED DATA:

A 4-42

ACREAGE

	1951-52	1952-53
Parent	4,498	4,815 (Actual)
Purple	62,000	90,000 (Actual)
Green	1,253,502	1,305,185 (Estimated)
	1,320,000	1,400,000 (Estimated)

RESERVE STORAGE

Parent	16	80
Purple	34	2
Green	447	2,252
	497	2,334

SALES

1951-52

Current Seed

	Total Production	In State	Out of State	Milled	To be Taken Into Reserve
Parent	156	76	0	0	80
Purple	2,779	2,401	0	326	2
Green	30,628	27,378	0	1,048	2,252
	33,563	29,855	0	1,374	2,334

Reserve

					To Remain in Reserve
Parent	16.0	16.0	0	0	0
Purple	34.0	34.0	0	0	0
Green	447.0	441.0	0	0	6

NOTE:

Due to over-ordering and cooperators holding back tonnage we had seed left over. Some gin run seed was used.

No pure seed was shipped out of State except the reproduction seed sent to start a supply of seed for the Imperial and Coachella Valleys, which amounted to 81 tons of purple and 34 tons of green tag reserve.

Fresno Cotton Disease Is Laid To Infected Seed

By Leo Dollar
Country Life staff writer

Much of the blame for the spread of angular leaf spot in Fresno area cotton fields was laid to infected seed while a federal official gave an optimistic report on how to combat the outbreak.

Speaking at a meeting of cotton men and others yesterday in the San Joaquin Power Building auditorium, John Presley, the chief of cotton disease studies for the department of agriculture experiment station in Beltsville, Md., reported acid delinting and mercury poison dust may lick the infection from seed.

In earlier reports by University of California officials, the disease was identified with sprinkler irrigation because infection has been found in fields irrigated by that method.

Presley's optimistic note was offered after he pointed out most of the infection is carried externally on the seed and the suggested treatment "absolutely removes the external load of the germ."

One state department of agriculture official said he feels infected seed has been received through the years.

His opinion was seconded by Marvin Hoover, cotton specialist for the USDA experiment station at Shafter who said:

"Usually seed is to blame for any new harmful thing in agriculture. Whether it is a new weed or new disease, it is usually brought in with the seed."

Charles Taylor of a farm implement concern asked how long it would take to develop a variety of cotton resistant to angular leaf spot or bacterial blight, as it sometimes is called.

George Harrison, former plant breeder at the Shafter station and developer of acala 4-42 cotton, said the resistance could be bred into a strain in two years but getting back the quality needed for commercial importance would take at least another 10 years. He said he has some blight resistant cotton strains at Shafter but the acala 4-42 does not combine well with them.

"It is the most awful looking patch of cotton I ever saw," said Harrison. "In fact, it is so awful we will have to plow it all under and start all over again. It took us 20 years to develop a wilt resistant strain. If we could do this job in 10 years we would be more than ordinarily lucky."

Regulations Adopted

On the regulation of seed to prevent the spread of the disease, Larry Nourse, the manager of the California Planting Cotton Seed Distributors, reported that the agency has removed all sprinkler irrigated fields as seed suppliers.

He added no seed is being accepted from gins which are handling sprinkler irrigated cotton and no seed is being kept from the ginnings of sprinkler irrigated cotton.

Presley and John Houston of the University of California, reported one of the best controls in an already infected field still is a thorough sanitation and cleanup program. They recommended plowing under all cotton plant debris at least six inches deep and thorough irrigating at least six weeks fore planting to rot the de and destroy the organisms.

No Disease On Roots

Presley said as far as known the root particles can carry the disease.

Presley added the chance internal infection is so rem in the seed which would saved for planting that the a and mercury treatment can regarded as a positive pro tion.

Nourse told the nearly 150 dustry members the regulati under which the cotton s distributing agency selects casts out seed fields are mu more rigid than those of California Crop Improvem Association which handles certification of other pure se such as alfalfa and beans in state.

Pilot Is Sought

The Civil Aeronautics Administration's aviation safety office in Fresno has been asked to help locate Harold B. Olsen, Jr., a pilot believed to be working in crop spraying operations in the San Joaquin Valley.

The request com

Angular Leaf Spot 1953-54

Larry:

Mr. Morely of 3-7671 - Ext. 44 called regarding location of angular leaf spot on cotton as follows:

Charlie West (?)	Section	28-27-27
Eyraud	"	31-32-27 *35-11-19
Coberly-West (?)	"	9-11-20
Bob Hildebrand(?)	"	29-12-19

(?) indicates question as to being exact location.

Glenn Moody - Sec 25-11-19 back 2 miles south of Tyson Gin

Shrier - Jasmine Sec 2[illegible]-27-27

L. O. HAUPT
COMMISSIONER

OFFICE: 221 LACEY BLVD.
TELEPHONE 235

OFFICE OF
AGRICULTURAL COMMISSIONER
AND STATE QUARANTINE GUARDIAN
KINGS COUNTY
HANFORD, CALIFORNIA

November 5, 1953

Larry Nourse
2201 F. St.
Bakersfield, California

Dear Larry:

Thanks for your letter of November 2nd with enclosed memorandum covering the Bacterial Blight of Cotton.

In company with the pathologists from the State Department of Agriculture we have checked all of the sprinkled fields in Kings County and have been unable to locate this disease. We are now working in the other fields of the County and when we have completed our work I will advise you of our findings.

Very truly yours,

L. O. Haupt
Agricultural Commissioner

LOH;tjw

10/8/54

Larry:

1. Chas Cleary called re: conversation he had with the acting-mgr. of the Carruthers Coop. Apparently a Fresno County ag. Inspector mentioned the possibility that their seed might be condemned inasmuch as infected seed went through the Coop gin last year and there was a possibility that this years seed might be contaminated in coming in contact with the gin machinery—
2. Though Charley doubted the credibility of the story - thought we ought to know
3. I passed the story on to Charley Grimm he also doubted the story - said that it was probably the idea of a misinformed inspector - also stated that any

action such as the one described (though entirely within the Commissioners legal scope) would most certainly require the endorsement of Sacramento to prevent local repercussions - and that certainly cotton representatives would be questioned as to the feasibility and desirability of such an action before it would ever be introduced - though he further stated that knowing John Dixon such a statement was possible.

1. Office Bldg.,
2. Is the department calling for the files at Shafter to be sent to Washington
3. Angular Leaf Spot;
   Are a.e your request for v[illegible] voluntary regulations necessar if treating is a sure cure or do they go hand in hand.
   Could any treatment be put in the water of sprinklered cotton

DISTRIBUTORS OF CALIFORNIA A 4-42 ACALA PLANTING SEED

DIRECTORS:
H. L. POMEROY
R. H. OESTING
FLOYD NELSON
JOE CARDWELL
L. A. HARNISH
KENNETH FRICK
MARVIN FARLEY

CALIFORNIA
PLANTING COTTON SEED DISTRIBUTORS
2201 F STREET
BAKERSFIELD, CALIFORNIA
TELEPHONE FAIRVIEW 4-6538

MANAGER-SECRETARY-TREASURER
L. B. NOURSE

September 7, 1954

Am enclosing copy of a card that will be given to you to place in your gin where your growers can see it, relative to Angular Leaf Spot. Since ginning is upon us, the copy will do until we can get the cards out.

IT IS ESSENTIAL THAT WE CARRY OUT THESE RULES AS WE DID LAST YEAR.

We find from actual contact that if the rules are properly presented to growers, they will cooperate. This card may keep the blame from falling on you as a ginner, when you talk with the grower.

To insure an adequate supply of uncontaminated seed, your seed committee recommends that we save all seed possible, as rapidly as possible. We will aim at last year's total figure of 23,000 tons.

If there is any change in the amount to be saved, due to unexpected legislation, we will notify you.

Yours very truly,

L. B. Nourse
Manager

lbn/mb

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BAKERSFIELD, CALIFORNIA

MANAGER-SECRETARY-TREASURER
L. B. NOURSE

October 31, 1953

PREVENTATIVE MEASURES RATHER THAN
POSSIBLE STATE REGULATIONS
FOR CONTROLS OF
BACTERIAL BLIGHT OR ANGULAR LEAF SPOT

Dear

Am confirming our phone conversation or direct contact with you or your gin managers relative to the above disease which is spreading in SPRINKLERED COTTON FIELDS as follows:

(1) ORIGIN OF DISEASE AND PREVENTATIVE MEASURES:

(a) Original infestation could only have come from seed imported from an infested area.
(b) It has been found so far, 40 miles from the original discovery in the Caruthers area and there may be more in other areas.
(c) It is a Bacterial disease and experiments show that a gin cannot be cleaned up unless completely sterilized after contaminated cotton is run through it.
(d) Spreads by rain or similar assimilated condition such as SPRINKLING.
(e) Has not been found in row irrigated fields, must have free water on plants.
(f) Treating with Ceresan or acid delinting or any suitable disinfectant, if job is well done, WHICH IS NOT ALWAYS THE CASE, eliminates the surface disease. The bacteria gets into the seed from heavily infested fields for which there is no treatment.
(g) Lives over in trash and stalks. Cure is to shred stalks, cover early about six inches and irrigate immediately to rot trash or keep out of cotton for one year.
(h) Is spread by implements unless thoroughly cleaned before being transported to another field.

(2) WHAT HAS BEEN DONE BY THE DISTRIBUTORS:

(a) No Purple Tag has been permitted to be planted in sprinklered fields; or if it was planted by mistake, no seed is saved.
(b) Since its spread this year, one cooperator having only a single unit gin within the infected area will not be permitted to save planting seed as he will process sprinklered cotton.
(c) Another gin which has saved considerable planting seed and is now going to gin sprinklered cotton has been told to save no more seed even though no infected fields have been found.
(d) In another area where an infected field has been found where the cooperator has several units, planting seed is being segregated from the sprinklered cotton.
(e) Some cooperators who have only single gins will process no sprinklered cotton.
(f) All cooperators have agreed to segregate planting seed from SPRINKLERED COTTON.

(3) WHAT HAS BEEN DONE BY AGRICULTURAL COMMISSIONER WHERE INFESTATION HAS BEEN FOUND:

(a) A local quarantine has been established requiring:

1. All sprinklered cotton must go through one gin.
2. Ranches have been quarantined to the extent that materials or machinery can be removed from the ranch only under certain conditions.

Bacterial Blight or Angular Leaf Spot October 31, 1953

I M P O R T A N T

(4) WHAT MUST BE DONE IN THE WAY OF PREVENTATIVE MEASURES:

(a) Where you have two or more gins on the same property, planting seed must be run through one gin and any sprinklered cotton through the others.

(b) Where you have several gins in an area, sprinklered cotton must be channelled through a gin that is not handling planting seed. Even though you think there is no disease in the fields, this is hard to determine.
The first reaction to this is -- it cannot be done. Some cooperators are doing it. IT IS BETTER TO DO IT NOW THAN TO HAVE THE POSSIBILITY OF SOME GOVERNMENTAL CONTROLS. It is much cheaper to switch one customer rather than be tied down with red tape.

(c) If you are handling no sprinklered cotton you have nothing to worry about; but if some outside customer brings in his cotton, it is easy enough to ask if it is from a sprinklered field.

(d) It is important that all seed used for planting be treated whether fuzzy or delinted and that no grower be permitted to take his seed home that is not treated.

This may seem like a lot of trouble, but it is much easier and cheaper to do this preventative work now than to try to correct a condition later.

I have talked with the Department of Agriculture. They do not want to establish State regulations, but may have to unless WE VOLUNTARILY carry out the above measures.

Yours respectfully,

Larry

L. B. Nourse, Manager

PREVENTATIVE MEASURES RATHER THAN POSSIBLE STATE REGULATIONS FOR CONTROL OF BACTERIAL BLIGHT OR ANGULAR LEAF SPOT

1. ORIGIN OF DISEASE AND VOLUNTARY PREVENTATIVE MEASURES:

A. It was discovered in 1950 in one field.

B. In 1953 it had spread to the following areas; Wheeler Ridge, Jasmine, Fresno, Five Points and Madera. It has been found already this year at Wheeler Ridge and Caruthers.

C. It spreads by rain or other assimilated conditions such as sprinkling, causing over damp conditions.

D. It has never been found in row irrigated fields in California or other states.

E. It is a bacterial disease and contaminates implements and machinery.

F. It reduces your yield by ruining the bolls.

G. **To eliminate the disease one must plow early and cover debris at least 6 inches and irrigate immediately to rot all material or keep cotton off for one or two years.**

H. **It is essential that sprinklered cotton be kept from going through same gin where planting seed is being saved. If it gets into the seed there is no cure.**

I. Composite samples of planting seed from row irrigated fields have been tested at the State laboratories and no trace of the disease has been found in Re-production or Green Tag Seed. WE MUST KEEP IT THAT WAY.

2. WHAT HAS BEEN DONE BY THE DISTRIBUTORS:

A. No Parent or Purple Tag seed has been permitted to be planted in sprinklered fields; or if it was planted by mistake, no seed is saved.

B. Where a company has a single unit gin, no seed will be saved after sprinklered cotton has been received for ginning.

C. Where there are two units on the same property, sprinklered cotton must be run through one unit and planting seed through the other.

3. WHAT A GROWER CAN DO FOR HIS OWN PROTECTION IN THE FUTURE:

A. When your gin manager asks that you delay picking for a day or two if you have sprinklered cotton, **be tolerant and cooperate with him.**

B. If he asks that you wait a little during the peak to gin your trailer of cotton so he may run it through one unit, **cooperate with him. He is only trying to protect the planting seed from becoming infected and to guard against RIGID CONTROLS for your good.**

C. Be sure that you plant only seed that has been treated with Ceresan, has been acid delinted or treated with other suitable disinfectant. These methods kill any surface contamination.

4. CONTROLS WE ARE TRYING TO STAY AWAY FROM BY VOLUNTARY METHODS:

A. In the area where the disease was discovered and again last year the State representative put the following rules into effect.

(a) All sprinklered cotton must go through one gin.

(b) Ranches were quarantined to the extent that materials and machinery could not be removed from the ranch except under certain conditions.

(c) The State does not want to put rigid controls into effect. If we follow the above rules voluntarily regarding ginning we may be able to check the spread so that your production will not decrease in the future.

5. GUARD YOUR FUTURE BY COOPERATING WITH YOUR GIN MANAGER. HE IS MERELY TRYING TO PROTECT THE INTERESTS OF THE COTTON GROWER.

CALIFORNIA PLANTING COTTON SEED DISTRIBUTORS
2201 F Street Bakersfield, California

DISTRIBUTORS OF CALIFORNIA A 4-42 ACALA PLANTING SEED

DIRECTORS:
H. L. POMEROY
R. H. OESTING
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CALIFORNIA
PLANTING COTTON SEED DISTRIBUTORS
2201 F STREET
BAKERSFIELD, CALIFORNIA
TELEPHONE 4-6538

MANAGER-SECRETARY-TREASURER
L. B. NOURSE

February 6, 1954

Dear

I thought this copy of a letter regarding the Angular Leaf Spot or Bacterial Blight would be of interest to you.

The sample mentioned was a composite of seed taken from Purple Tag fields which produced Green Tag seed that will be planted this season.

Larry.
L. B. Nourse, Manager

COPY

Bureau of Plant Pathology
Gilbert L. Stout
Chief

STATE OF CALIFORNIA
DEPARTMENT OF AGRICULTURE
Sacramento 14
January 25, 1954

Mr. L. B. Nourse, Manager
California Planting Cotton Seed Distributors
2201 F Street
Bakersfield, California

Dear Mr. Nourse:

On November 10, 1953, we received a sample of cotton seed sent by Mr. Ray Hoekstra of your organization. The specimen was labeled "B.B.I." and the letter of transmittal requested examination for the presence of the bacterial blight organism.

This letter is to confirm information given to you by Mr. G. L. Stout regarding this specimen during a phone conversation on December 28, 1953.

Examination for bacterial pathogens in the seed received was directed along several lines. The entire lot (approximately 1½ pounds) was examined grossly for evidence of abnormal or discolored seeds. Eight slightly discolored seeds were found and picked out for further examination. Two flats of seeds were planted in the greenhouse and held for examination of the developing plants. At the end of three weeks the plants had developed two leaves in addition to the cotyledons. None of the plants showed any evidence of bacterial infection.

The eight discolored seeds were at this time macerated in sterile water. A portion of the resulting suspension was cultured on nutrient medium and a portion was atomized over one of the flats of young plants in the greenhouse after mechanically injuring some of the leaves. No bacteria grew in the cultures and none of the atomized plants developed bacterial infection.

About one half pound of the remaining seed was macerated with sterile water in a mechanical homogenizer. A portion of this suspension was cultured and also inoculated into mechanically injured plants in the second flat. The cultures were negative for bacterial growth and none of the plants developed bacterial infection.

The conclusions are that no evidence of the bacterial blight organism was found in the sample of seed when examined as described above.

Very truly yours,

C. G. Weigle

C. G. Weigle
Assoc. Plant Pathologist

CGW:dsc

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MANAGER-SECRETARY-TREASURER
L. B. NOURSE

September 7, 1954

Am enclosing copy of a card that will be given to you to place in your gin where your growers can see it, relative to Angular Leaf Spot. Since ginning is upon us, the copy will do until we can get the cards out.

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We find from actual contact that if the rules are properly presented to growers, they will cooperate. This card may keep the blame from falling on you as a ginner, when you talk with the grower.

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Yours very truly,

Larry

L. B. Nourse
Manager

lbn/mb

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BAKERSFIELD, CALIFORNIA

MANAGER-SECRETARY-TREASURER
L. B. NOURSE

October 31, 1953

PREVENTATIVE MEASURES RATHER THAN
POSSIBLE STATE REGULATIONS
FOR CONTROLS OF
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(f) All cooperators have agreed to segregate planting seed from SPRINKLERED COTTON.

(3) WHAT HAS BEEN DONE BY AGRICULTURAL COMMISSIONER WHERE INFESTATION HAS BEEN FOUND:

(a) A local quarantine has been established requiring:

1. All sprinklered cotton must go through one gin.
2. Ranches have been quarantined to the extent that materials or machinery can be removed from the ranch only under certain conditions.

Bacterial Blight or Angular Leaf Spot October 31, 1953

I M P O R T A N T

(4) WHAT MUST BE DONE IN THE WAY OF PREVENTATIVE MEASURES:

(a) Where you have two or more gins on the same property, planting seed must be run through one gin and any sprinklered cotton through the others.

(b) Where you have several gins in an area, sprinklered cotton must be channelled through a gin that is not handling planting seed. Even though you think there is no disease in the fields, this is hard to determine.
The first reaction to this is -- it cannot be done. Some cooperators are doing it. IT IS BETTER TO DO IT NOW THAN TO HAVE THE POSSIBILITY OF SOME GOVERNMENTAL CONTROLS. It is much cheaper to switch one customer rather than be tied down with red tape.

(c) If you are handling no sprinklered cotton you have nothing to worry about; but if some outside customer brings in his cotton, it is easy enough to ask if it is from a sprinklered field.

(d) It is important that all seed used for planting be treated whether fuzzy or delinted and that no grower be permitted to take his seed home that is not treated.

This may seem like a lot of trouble, but it is much easier and cheaper to do this preventative work now than to try to correct a condition later.

I have talked with the Department of Agriculture. They do not want to establish State regulations, but may have to unless WE VOLUNTARILY carry out the above measures.

Yours respectfully,

Larry

L. B. Nourse, Manager

Nov-13-53

Falley gins notified about seed -

Coberly West - Wheeler Ridge - ordered to stop } Dew + Blight in sprinkled fields.

Producers Meridian - " " "

" others - Take 2nd picking as long as seed looks good -

Arvin Coop - told to stop 2nd picking as they are 70% [illegible] - [illegible]

[illegible] Jennings Co - Told to save 2nd picking unless seed looked bad

PRODUCERS COTTON OIL COMPANY

COTTONSEED AND LINSEED PRODUCTS

P. O. BOX 1832 TELEPHONE 3-5281 MAIN OFFICE
99 HIGHWAY AT NORTH AVE.
FRESNO, CALIF.

October 12, 1953

Dr. E. Steinhaus
Insect Pathology
Agricultural Hall
University of California
Berkeley, California

Dear Dr. Steinhaus:

The enclosed specimens are the ones I conversed about over the telephone to your laboratory technician October 9.

All of us in the cotton industry are concerned over the possible spread of angular leafspot, Xanthomonas malvacearum, and due to the rather irregular nature of diseased fields we suspect that insects, rodents and birds may play a part.

The specimens in the vial (separated by cotton daubs) are as follows, reading from top to bottom:

1. Cotton bollworm
2. Fruit notoxus
3. Lygus bug
4. Say's stink bug (due to cannibalistic attitude of the large worm, there probably will be only one worm when this arrives.)

The shorter visl contains ground beetles.

The collection record on these reads: Tom Pike Ranch, ½ mi. so. of Conejo on Cornelia, Fresno County, 10-10-53.

Thank you very much for your help in this matter.

Sincerely yours,

Tom Heffernan
Entomologist

TH:mh
cc Mr. Ray Provost
Mr. John Hoyt
Mr. Tom Pike
Mr. Larry Hourse

November 13, 1953

Mr. Harry West
Coberly West Company
Shafter, California

COPY

Dear Harry:

This is to confirm our phone conversation of this morning at which time I asked you to save no more planting seed this season for the following reasons:

1. In view of the reduced acreage under cotton allotments in 1954 we cannot save all of the seed from planted acres so we alloted each company a certain number of tons to save to keep our total supply from getting too large, which would reduce the return to the grower. Your company is one of those that has saved more than their allotment at our request and therefore, we ask that you stop saving planting seed at this time.

2. Some of the recently discovered Bacterial Blight or Angular Leaf spot has been found in 5 sprinklered fields that will be processed at your gins. Up till now, you have been able to channel sprinklered cotton through one gin, and seed through the other which may be difficult from now on with the heavy load at your gins. Saving no more planting seed will therefore lessen the chances of any contamination at this time.

Thanking you for your usual 100% copperation.

Yours respectfully,

L. B. Hourse, Manager

LBH:my
cc:Mr. John Akeman
Mr. Virgil Wright

Northern Gins.

	Units	Notified
Carruthers Coop	1	yes delinted [illegible] seed
[illegible] Gin Co	2	no sprinklered
Golden State	2	will put thru one [illegible]
H + H	7	double - will [illegible] & [illegible]
Hanley	?	
[illegible]	2	no sprinklered
[illegible]	1	no sprinklered
Madera	?	no sprinklered
Producers Cotton		will switch
S J Chem		will switch
Santa Rita	2	no sprinklered

Will you talk to the following about Angular Leaf Spot going thru a separate gin -

Boswell - Called

Adams: - Called -

Shafter [illegible] Gin Co - called -

Wasco Growers - called -

Maple Leaf - called

↑

Only Maple Leaf has any sprinkler cotton (Famoso area) - and just one gin. Asked that they stop saving seed. ~~Have~~ Have saved enough seed for their own needs (Aprox 50 Ton)

D.E.J.

10/26/53

Lake Reed Farms

E½ Sec 23 - 20 E T 21 S

Row irrigated.

Production. well gin at Stratford
no seed. sand ok Stratford

Sec 1 - J.G. Stone. Land Co.

Call Haupt - 5 [illegible]

Commission at Kings County

Reported by Heffernan

Nov 2 - 53

Southern Gin

Company	units	satisfied	will complete
(Arvin Coop) ok	2 ok		
(Bellevue Gin Co) ok	3		
Boswell	2		
Bidart stopped any out (Calcotton) ok	2		
Camp SA [illegible]	2		
Camp Flats	1		
(Dairy [illegible])	2 ok	–	
(Central Valley) ok	2		
Farmers Coop	2		
Fullerton Gin Co	1		
(Rancho Delta) ok	2		
Kingsley	1		
Maple Leaf	1		
Producers Gin	4		
" Flats	1 no seed		
SSC O Co Flats	2		
Shafter [illegible] Gin Co	2		
(" " Coop	2)		
(Tree Ranch)	2	no [illegible] cotton.	
[illegible] Gin	1		
[illegible] Poston	1		
(Fresno Coop)	–		

Re: Bacterial Blight or Angular Leaf Spot - Caruthers Area

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(a) If they wish to have their growers of reproduction seed take their cotton to some gin outside of this district where no cotton from the infected area is ginned, they may then save the seed.

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I have talked with the manager of the Caruthers Cooperative Gin and he suggested methods of clean-up at the gin; however, in the interests of the seed program it is felt that no seed should be saved through this gin as a clean-up would not be adequate.

Yours respectfully,

L. B. Nourse, Manager

LBN:bm

APPROVED:

(Charles Grimm)

COPY

CALIFORNIA PLANTING COTTON SEED DISTRIBUTORS 220[illegible] Street
Bakersfield, California

October 15, 1953

Professor B. A. Madson — University of California
Agricultural College, Davis, California

Mr. Charles Grimm — Agriculture Commissioner, P. O. Box 946
Bakersfield, California

Mr. John Turner — U. S. Experimental Station, Shafter, California
Mr. George Harrison — " " " " "
Mr. Eugene Hayes — Route 2, Box 80, Madera, California
Mr. W. L. Smith — Route 1, Box 25, Buttonwillow, California

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L. B. Nourse, Manager

LBN:hm

APPROVED:

Geo. J. Harrison

(George Harrison)

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Yours respectfully,

L. B. Nourse, Manager

LBN:bm

COPY

APPROVED:

Eugene Hayes

(Eugene Hayes)

CALIFORNIA PLANTING COTTON SEED DISTRIBUTORS 220[illegible] Street
Bakersfield, California

October 15, 1953

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Agricultural College, Davis, California

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xxxxxxxxxxxxxxxx

2201 F Street

October 16, 1953

COPY

Mr. Marvin Farley
Farley Farms
P. O. Box 344
Woltville, California

Dear Marvin:

Attached is a copy of a letter written at Mr. Pomeroy's suggestion to our Advisory Committee after talking to them on the phone.

This has to do with the spread of a very dangerous blight about which little is known in California. The only cure seems to be to leave the land lay out until all trash has rotted and disappeared.

The Committee agreed we should save no seed from this gin due to the fact that the blight is a bacteria.

This is rather drastic since we had already accepted some of the fields for seed saving and the growers had put their money into clearing their fields. Some thought should be given as to whether we could compensate these growers by giving them the same spread that is paid to all growers of reproduction seed and still not set a precedent in case this spread becomes general. This is an emergency measure which has arisen just as seed saving is starting so it might be worked out on this basis.

Yours respectfully,

L. B. Nourse, Manager

LBN:bm
encl.

bcc: Mr. H. L. Pomeroy -- same letter sent to each of the Directors.

H.L. Pomeroy

CALIFORNIA PLANTING COTTON SEED DISTRIBUTORS

2201 F Street
Bakersfield, California

October 15, 1953

Professor B. A. Madson — University of California, Agricultural College, Davis, California
Mr. Charles Grimm — Agriculture Commissioner, P. O. Box 946, Bakersfield, California
Mr. John Turner — U. S. Experimental Station, Shafter, California
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L. B. Nourse, Manager

LBN:bm
cc encl.

cc: Messrs. H. L. Pomeroy
Kenneth Frick
Marvin Farley
J. H. Cardwell
Ray H. Oesting
Floyd Nelson
Lloyd Harnish

Carruthers Angelson Luft Stat.

Called Adv. Cmttee
Grimm
Madson
Harris
Turner
Smith
Hayes.

All agreed on shield seed
for Carruthers Coop. for good of
Industry as a whole.

Heffernan.

Fields known infested at Carruthers
all sprinklered.

Pike, J Adams, W H Whitfield
O C Watson Joe Pimentel.
Joe Mills, Klepper - Wise.
Poytress.

xxxxxxxxxxxxxxxx

2201 F Street

October 16, 1953

Mr. Clarence Schlegel
Caruthers Cooperative Gin, Inc.,
2105 West Dinuba
Fresno, California

Dear Clarence;

Following our conversation at the gin on Tuesday after having visited the blight infected fields of sprinklered cotton and out phone conversation of yesterday, am writing to you regarding the saving of seed at your gin this year.

1. As you know, when this angular leaf spot was discovered in your area we ruled out all sprinklered cotton that year even though some re-production seed had been planted, and no re-production seed has been allowed to be planted in sprinklered fields since that time. Those who had seed fields at that time did not like the idea but went along with us as we have to consider the good of all growers and not the few.

   As things have turned out, it was a wise decision.

2. We now find ourselves again,in the same position with your growers. Not that their fields have blight, but the fact that you will gin some sprinklered cotton at your gin.

3. This is, as you know, a bacteria and will adhere to metal as well as trash. Even though we could clean every vestige of trash out of the gin which is impossible, the possibility of contamination from other sources is too great to take a chance.

4. I have talked with the boys at the Experiment Station who know more about such things than you and I, and also to our Advisory Board, and all agree that for the good of the whole seed program no seed should be saved at your gin this year. If, however, you wish to have the seed ginned at some gin outside of the district where none of the infected cotton will be processed, the seed may be saved from the accepted fields.

5. You mentioned the fact that there are sprinklered fields in other areas. That is true, but no infestation has been discovered in any other area as yet; therefore, we must start preventative measures at the point of known infestation.

xxxxxxxxxxxxxxx

2201 F Street

Mr. Clarence Schlegel
Caruthers Cooperative Gin, Inc.,

6. This planting seed picture is bigger than any individual and must operate on that basis. I feel that if it is explained properly to your growers they will realize that if anything happened they would not like to be blamed and I am sure they would not care to take a chance on seed from another district if conditions were reversed.

It is regrettable that such matters arise but nature sometimes produces emergencies beyond our control. Your position is similar to the earth quake last year when we were forced to condem some 1000 acres of parent seed late in the season due to lack of water at the proper time. This also was for the protection of all growers.

Hoping that this problem will not prove as serious in the future as it appears at present but as of this date no seed may be saved at your gin.

Yours respectfully,

L. B. Nourse, Manager

LBN:bm

COPY

Re: Bacterial Blight or Angular Leaf Spot - Caruthers Area

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L. B. Nourse, Manager

LBN:hm

APPROVED:

W. L. Smith

(W. L. Smith)

COPY

CALIFORNIA PLANTI[illegible] COTTON SEED DISTRIBUTORS 22[illegible] F Street
Bakersfield, California

October 15, 1953

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Agricultural College, Davis, California

Mr. Charles Grimm — Agriculture Commissioner, P. O. Box 946
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CALIFORNIA PLANT[illegible] COTTON SEED DISTRIBUTORS 2[illegible] F Street
Bakersfield, California

October 15, 1953

Professor B. A. Madson	University of California Agricultural College, Davis, California
Mr. Charles Grimm	Agriculture Commissioner, P. O. Box 946 Bakersfield, California
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APPROVED:

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Developments in the past:

1. This was discovered in the Caruthers area on sprinklered cotton in 1950 and no serious spreading was reported until last week.

2. At the time it was reported in 1950 we arbitrarily ruled that any seed planted on sprinklered cotton that year would be rejected and no reproduction seed could be planted on sprinklered acreage in the future. This has proved to be a wise decision.

3. As of today this infection has spread to about 10 known fields, all sprinklered, comprising some 1200 acres.

4. So far no infestation of row-irrigated cotton is known.

5. It is felt that anything we can do as a preventative measure, even though drastic, should be done.

6. In the Caruthers area we have some 250 acres of reproduction seed planted.

7. The gin that processes our seed will also gin some sprinklered cotton from this area.

8. Even though we could clean up the gin of all seed and trash, the Bacteria would doubtless be in the machinery.

Re: Bacterial Blight or Angular Leaf Spot - Caruthers Area

9. For this reason it is deemed wise to give the gin the following choice:

(a) If they wish to have their growers of reproduction seed take their cotton to some gin outside of this district where no cotton from the infected area is ginned, they may then save the seed.

(b) If this is not done, no seed will be saved from these fields belonging to the Caruthers Cooperative Gin.

I have talked with the manager of the Caruthers Cooperative Gin and he suggested methods of clean-up at the gin; however, in the interests of the seed program it is felt that no seed should be saved through this gin as a clean-up would not be adequate.

Yours respectfully,

L. B. Nourse, Manager

LBN:bm

APPROVED:

_____

COPY

Madera, Calif.,
Febr. 3rd. 1960.

COPY

John W. Dixon,
Agricultural Commissoner,
Fresno, California.

Dear Mr. Dixon:

Enclosed is a list of cotton growers whose fields were found to be infected with Bacterial Blight (angular leaf spot) in Fresno county in 1959. Also attached is a map showing the location of the fields.

In spite of an inspection period of several months and over a wider area, only one newly infected field was found. This was in a field of Deltapine cotton planted illegally in the county. All other infected fields found were in locations where Bacterial Blight had been reported in previous years.

The disease infected acres, or the amount of damage, not only in Fresno county, but in the San Joaquin valley, is the least reported in several years. An educational program of proper seed treatment and sanitary field practices may eradicate this potentially dangerous disease.

Sincerely,

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
CROPS RESEARCH DIVISION
ROUTE 1, BOX 17
SHAFTER, CALIFORNIA

NOVEMBER 5, 1959

DR. W. C. SCHNATHORST
DEPT. OF PLANT PATHOLOGY
UNIVERSITY OF CALIFORNIA
DAVIS, CALIFORNIA

DEAR BILL:

THANKS FOR YOUR EXCELLENT LETTER SUMMARIZING THE WORK YOU HAVE DONE ON THE BACTERIAL BLIGHT PROBLEM.

I AM AWAITING THE OUTCOME OF THE FIVE POINTS PLANTING BY GARBER BEFORE CALLING MR. NOURSE TO GET A GROUP TOGETHER. WE STILL ARE HOPEFUL OF GERMINATION SUCCESS AT FIVE POINTS.

SINCERELY,

JOHN N. TURNER, DIRECTOR
U. S. COTTON FIELD STATION

LH

CC: PRESLEY
GARBER
NOURSE

SESSION ON BACTERIAL BLIGHT, OCTOBER 1, 1959

(ATTENDING WERE LARRY NOURSE, BOB MARTIN, JOHN PRESLEY, BILL SCHNATHORST, DICK GARBER, BOB MIRAVALLE, MARVIN HOOVER AND JOHN TURNER)

BOB MARTIN REVIEWED THE SURVEY WORK HE CONDUCTED IN 1957, 1958 AND 1959. IN 1957, HE FOUND ONLY 5 TO 10 BLIGHT-INFESTED FIELDS; IN 1958, HE FOUND AT LEAST 50 NEW INFESTED FIELDS AND IN 1959 HE DID NOT FIND ANY NEW FIELDS AND THE INFESTATIONS IN THE 1958 FIELDS WERE OF MINIMUM INFESTATION. HE POINTED OUT THAT PRACTICALLY ALL OF THE BLIGHT WAS IN TWO SMALL AREAS: THE AVENAL-HURON-COALINGA TRIANGULAR AREA AND THE RAISIN CITY-CARUTHERS AREA. MR. NOURSE STATED THAT THEY COULD AFFORD TO KNOCK OUT GROWING AND GINNING PURE SEED FROM THESE AREAS.

THE NEED FOR EDUCATIONAL SESSIONS WAS BROUGHT OUT AS SANITATION PRACTICES WERE RECOMMENDED BY THE PATHOLOGISTS IN THE GROUP. IT WAS DECIDED THAT GARBER WOULD WORK WITH OTHERS CONCERNED IN SETTING UP A DEMONSTRATION PLOT ON THE FIVE POINTS STATION. THIS PLOT IS TO UTILIZE CONTAMINATED COTTON FROM A FIELD FROM WHICH MARTIN COULD HARVEST SAMPLES RIGHT AWAY. ALSO, THAT BILL SCHNATHORST WOULD FIX SOME TRAYS OF GERMINATING SEEDLINGS TO DEMONSTRATE THE ADVANTAGES OF ACID-DELINTED SEED. HOOVER HAD A NUMBER OF POINTS TO BRING OUT REGARDING OTHER MEANS OF CONTAMINATING A FIELD. IF THIS DEMONSTRATION PLOT MATERIALIZES BY LATE OCTOBER, MR. NOURSE WILL CONTACT SOME OF THE LEADERS IN THE WEST SIDE AREA AND THE GINNING COMPANIES TO HAVE THEM GATHER AT THE PLOT BETWEEN NOVEMBER 1 AND 15.

AS A LONG-RANGE EFFORT THE BREEDERS WILL HAVE A SCREENING PROGRAM NEXT YEAR AND MAKE HYBRIDS WITH STRAINS OF ACALA COTTON KNOWN TO HAVE RESISTANCE TO BOTH RACE 1 AND 2. THIS CAN BE SPEEDED UP BY THE USE OF WINTER PLANTING IN IGUALA. WE SHOULD HAVE THE NECESSARY MATERIAL TO EMBARK ON A REGULAR BREEDING PROGRAM IN 1962 IF IT APPEARS FEASIBLE AT THAT TIME.

ELVIN O. MANKINS
AGRICULTURAL COMMISSIONER

COUNTY OF TULARE
STATE OF CALIFORNIA

TELEPHONE REDWOOD 2-5511
EXT. 306

OFFICE OF
TULARE COUNTY

DEPARTMENT OF AGRICULTURE
ROOM 12E, COURT HOUSE
VISALIA, CALIFORNIA

October 15, 1959

Mr. Larry Nourse
2201 F Street
Bakersfield, California

Dear Larry:

We have recently completed the Angular Leaf Spot of Cotton Survey in Tulare County as you requested.

The inspection covered 1,084 acres, involving 40 properties, and we are happy to report that all properties inspected were negative.

It has been a hot, dry summer which perhaps could be a factor.

Best regards

Very truly yours,

Butch

Elvin O. Mankins
Agricultural Commissioner

EOM:g

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

Cotton & Cordage Fibers Research Branch

SOUTHWESTERN IRRIGATION FIELD STATION
P.O. Box 1339
Brawley, California

October 7, 1959

Mr. J. Hurt
California Planting Cotton Seed Distributors
2201 F Street
Bakersfield, California

Dear Jack:

I have your letter of October 1, regarding the occurrence of Angular Leafspot in DPL-15 cotton in the San Joaquin Valley. I have checked with our plant pathologist farm advisor and to our knowledge the disease has never occurred in Imperial Valley. It may be present in the endemic state and therefore not be seen but Farm Advisors nor State Bureau of Plant Pathology have ever found it. The disease is seed borne and so I would be skeptical of the source of this seed. It may have been left-over 1957 Mississippi or Arkansas seed coming from here in 1959.

Very truly yours,

Peter

Peter H. van Schaik
Research Agronomist

October 1, 1959

Dr. Peter Van Schaik
Southwest Irrigation Station
Brawley, California

Dear Pete:

As you have probably read in the newspapers, Delta Pine cotton has been found in Fresno County here in the valley. Two plantings have been found -- one solid planted and row irrigated; the other planted in 25 strips of 4 rows each planted between an equal number of 4-row strips of Acala. This latter was sprinkle irrigated and Angular Leaf Spot has been found on the DPL and on the outside rows of the Acala. The grower that has this skip row planting has several thousand acres of Acala cotton under sprinkler irrigation and the only place Angular Leaf Spot was found was adjacent to the DPL.

We have been informed that this DPL seed came from the Imperial Valley and are wondering if you know of any Angular Leaf Spot infestations in Imperial. We feel that this Angular Leaf Spot came on the seed from Imperial Valley.

Yours truly,

Jack Hurt,
Assistant Manager

JH:ps

COPY

L. O. HAUPT
COMMISSIONER

CLAUDE W. BRIDGES
DEPUTY

280 – 11½ AVENUE
LUDLOW 4-3331 - EXT. 74

OFFICE OF

AGRICULTURAL COMMISSIONER

KINGS COUNTY

HANFORD, CALIFORNIA

September 23, 1959

L. B. Nourse
California Planting Cotton
Seed Distributors
2201 F. Street
Bakersfield, California

Dear Mr. Nourse,

We have completed our Angular Leaf Spot Survey of sprinkled cotton fields in Kings County for 1959.

Approximately 2,500 acres was inspected, with the greater percentage of this acreage showing no infection at all. Infection was found to be present, however, in fields comprising about one third of the total acreage inspected, and confined to four properties. The degree of infection varied from a mere "trace" to a "Medium" on small portions only of each of these four properties.

In general, the bacteria did not appear to infect and damage nearly as much cotton as last year. Possibly not more than one per cent of the total sprinkled acreage was found to be infected. Our dry Spring weather could have been a contributing factor toward this decline. We do not know all the reasons for this variation from year to year, but one fact remains. We still find Bacterial Blight in sprinkled irrigated cotton fields.

Very truly yours,

Claude W. Bridges

Claude W. Bridges
Deputy Agricultural Commissioner
Kings County

P. S. We are beginning our Khapra Beetle inspection of the warehouses in which your seed will be stored. I will notify you when this is completed.

C.W.B.

CWB/gr

MERCED COUNTY
DEPARTMENT OF AGRICULTURE

E. A. DANISON
AGRICULTURAL COMMISSIONER
SEALER OF WEIGHTS AND MEASURES

JAMES T. REED
ASSISTANT AGRICULTURAL COMMISSIONER

OFFICE: 740 WEST TWENTY-SECOND STREET
TELEPHONE RANDOLPH 2-7411 - EX. 204
MERCED, CALIFORNIA

R. H. MILBOURN
DEPUTY COMMISSIONER

JACK RAHILLY
CHIEF DEPUTY SEALER

September 2, 1959

Mr. L. B. Nourse
Manager
California Planting Cotton Seed Distributors
2201 F Street
Bakersfield, California

Dear Sir:

An Inspection of sprinkler irrigated cottonfields in Merced County has been completed.

No. Angular Leaf Spot was found.

Very truly yours,

E. A. Danison

E. A. Danison
Agricultural Commissioner

EAD:dhl

Mail to Nourse

Dr. John T. Presley, Plant Industry Station, August 26, 1959
Beltsville

John H. Turner, U. S. Cotton Field Station,
Shafter

Pathology Problems to Consider

Dear John:

According to Dr. Barker, we should be expecting you to visit us in late September. With several problems to discuss while you are here I thought it best to give you some preview. It may, or may not, alter your schedule of travel:

Bacterial Blight - Perhaps a conference between the Seed Distributor's personnel and pathologist would be helpful. Schnathorst may have brought you up-to-date on the survey work that has been under way this year. At least, the disease does not appear in more fields this season. But it reoccurs in last years' infected fields. Sprinkler type irrigation is on the increase in the valley, thus, making it more difficult for ginners to cooperate in the pure seed program. Maybe we will be forced into a breeding effort, but I hope not? Even so, there would be a period of 7 to 10 years of "living with the disease". What good advise can you give on this subject, based on New Mexico's experiences? Would a trip to New Mexico by Nourse or his man be helpful? I do not need any letter of answers now, but such questions would be appropriate for you to discuss when we are all together.

Another point I am concerned over - The work load (or specific pathologic studies) that fall largely in Garber's operation, as compared with Schnathorst. As greenhouse-laboratory space become available to Garber this winter, it appears that some phases of the pathology project can best be undertaken here and others to remain at Davis!

Thirdly, our Wilt breeding efforts need to be discussed in light of available infested land and the interest Garber has shown (and the fine help he has given) in field grading.

John, none of these problems are presented due to critical situations, but by hearing from me you may find it desirable to discuss these with the other Section Heads or project leaders in other states before your arrival.

Kindest regards and looking forward to having you.

cc: H. D. Barker

xperimenting with a crawler tractor fitted with a gas turbine engine.

Infestation Of Bacterial Blight Is Severe In Lubbock Area

LUBBOCK, Aug. 13—(Spl.)—An infestation of bacterial blight which has invaded a portion of the South Plains has been described by two agronomists who toured the area last week as being the worst in their memory.

Dr. J. D. Bilbro, research agronomist of the U. S. Department of Agriculture, and Dr. Harry Lane, plant physiologist, are specialists at the Lubbock Agricultural Experiment Station.

A final analysis will not be available until November, but from a preliminary investigation it would seem the disease is going to cause more damage than it did last year, which was described as one of the worst on record.

Specialists estimated growers suffered a monetary loss of about 7 per cent of the total value of their 1958 crop.

Lower Fourth Defoliated

Bilbro and Lane found that in many cases the lower one-fourth of the plant has been defoliated by bacterial blight. They also found lesions on a large number of bolls and fear that this will cause spotted or light spotted lint.

Tall stalks of cotton, some almost shoulder high, can be found in many infected fields, but the plants are virtually devoid of fruit. With such cotton, farmers can only water during August with the hope that enough fruit will set this month to make a good crop.

The disease, often called angular leaf spot, is particularly rampant in the southern portion of this area, where more early cotton can be found. Abnormally cool temperatures and frequent rains earlier this season largely contributed to the heavy infestation.

The disease organism over-winters in plant residues, but favorable climatic conditions are necessary for it to become a menace.

Losses occur following widespread winds and rainstorms which disseminate the disease bacteria and produce conditions favorable for infection.

Second Rainy Spring

Despite the fact that the area had an exceptionally high infestation of bacterial blight in 1958, it might not have been repeated if it had not been for the oddity of a second rainy spring in this area.

Methods of control largely depend on the elimination of the sources of infection. A combination of delinting seed with acid and treating it with a recommended disinfectant is widely used.

Other control methods are the use of seed grown in disease-free fields and the destruction in early fall of infected crop residues by deep, clean plowing.

Plant breeders are striving to develop varieties resistant to the disease, offering the best potential control. Fully resistant commercial varieties are not yet available, but some strains show more tolerance toward the disease.

At least two races of the disease are prevalent on the High Plains. The second race was isolated after the first became known and is suspected of becoming as great in importance as the first. Other races are known to exist, but have not been isolated.

Race 2 Suspected

The varieties bred for resistance to Race 1 often show symptoms of bacterial blight, so it is suspected that they have become infected with Race 2.

The first noticeable symptoms of bacterial blight are small water-soaked lesions on the seed leaves and young true leaves of seedlings. From these primary lesions the infection spreads to leaves higher on the plant and to the neighboring plants.

If the stems are infected, black, elongated lesions (black arm) are produced.

A severe infection of older plants causes shedding of leaves, squares and young bolls.

—o—

HOWARD T. McLEAN
AGRICULTURAL COMMISSIONER
STATE QUARANTINE GUARDIAN

TELEPHONE ORchard 4-4641
EXT. 219

Madera County
Department of Agriculture
221 WEST 7TH STREET
Madera, California

August 24, 1959

L. B. Nourse, Manager
Planting Cotton Seed Distributors of California
2201 F Street
Bakersfield, California

Dear Mr. Nourse:

We have made a survey of all of the sprinkler irrigated cotton fields that we know about, and found no evidence of Angular Leaf Spot. If we should locate any additional fields we will check them and forward the information to you.

Mauro De Benedetto	10 acres	Avenue 26½ & Road 23
John De Benedetto	35 "	Avenue 26½ & Road 22
Bruce Moore	20 "	Avenue 24 & Road 17
Newhall Land & Farming	40 "	Avenue 7½
Wendell Erickson	50 "	Avenue 10 & Hwy. 99
Ralph Sampaulesi	35 "	Avenue 10 & Road 32
R. W. Burton	30 Acres	Avenue 9 & Road 33½
Bruno Pelanconi	30 "	Avenue 9 & Santa Fe R.R.

Very truly yours,

Howard T. McLean

Howard T. McLean
Agricultural Commissioner

HTMc:cr

L. O. HAUPT
COMMISSIONER

CLAUDE W. BRIDGES
DEPUTY

280 – 11½ AVENUE
LUDLOW 4-3331 - EXT. 74

OFFICE OF

AGRICULTURAL COMMISSIONER

KINGS COUNTY

HANFORD, CALIFORNIA

August 20, 1959

Mr. L. M. Nourse, Manager
California Planting Cotton Seed Distributors
3201 F. Street
Bakersfield, California

Dear Mr. Nourse:

Your letter of August 17th in reference to the Angular Leaf Spot Survey in sprinklered cotton is at hand.

We will be glad to work with Mr. Bob Martin if he works in this county or will do the work under the supervision of Deputy Commissioner Claude Bridges.

Very truly yours,

L. O. Haupt

L. O. Haupt
Agricultural Commissioner

LOH/gr

ELVIN O. MANKINS
AGRICULTURAL COMMISSIONER
HERMAN FRENCH
CHIEF DEPUTY

COUNTY OF TULARE
STATE OF CALIFORNIA

TELEPHONE REDWOOD 2-3931
EXT. 306

OFFICE OF
TULARE COUNTY

DEPARTMENT OF AGRICULTURE
ROOM 12E, COURT HOUSE
VISALIA, CALIFORNIA

August 19, 1959

Mr. L. B. Nourse, Manager
California Planting Cotton Seed
Distributors
2201 F Street
Bakersfield, California

Dear Larry:

Thank you for your letter of August 17, 1959.

We see no reason why we cannot do the Angular Leaf Spot survey on cotton in Tulare County again this year.

We are happy that we are able to assist in this survey.

Very truly yours,

Elvin O. Mankins
Agricultural Commissioner

EOM:g

August 19, 1959

COPY

Mr. W. C. Schnathorst
Plant Pathologist
College of Agriculture
University of California
Davis, California

Dear Bill:

Received copy of your letter to Bob Martin regarding Angular Leaf Spot.

Have talked with Bob and understand he was to call you yesterday and make arrangements to meet you.

Am not surprised that you have found the disease in one of the gins, but if I have the right location, it is not a pure seed gin.

According to the map, the Howard Avenue gin is south and east of Huron and north of the Coalinga road. Due to the fact you say it is south and east of Coalinga, I am not sure of it's location. I wish you could spot it a little closer for me.

Thanking you for the information and hoping to see you soon, I am

Yours truly,

L. B. Nourse, Manager

LBN:ps

UNIVERSITY OF CALIFORNIA
COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATION

DEPARTMENT OF PLANT PATHOLOGY
DAVIS, CALIFORNIA

August 13, 1959

Mr. Bob Martin
Madera
California

Dear Bob:

I recently learned that you have been actively surveying cotton fields this summer for bacterial blight and that you have found quite a few fields in which this disease is present. The question of where the organism comes from year after year is one of my interests, and I have been approaching it from 2 directions. One is the possibility of carry-over in past seasons' plant refuse (seed, stems, bolls and leaves in the fields); the other is the planting of infested seed from gins that have handled cotton from fields infested with the disease.

One of the best ways to determine the importance of carry-over in fields is to obtain histories of bacterial blight on certain fields by questioning the growers. In this regard, I would greatly appreciate your help. I would like to make a trip with you in the very near future to several of the fields and question the growers. Perhaps you may have already done this. If you feel that such a trip can be worked into your schedule in the next 2 weeks or so, please let me know. I would prefer to leave Davis on a Wednesday, meeting you in Madera that morning. In this way, I could spend the day with you, look around on Thursday myself, go to Shafter where I have some things to attend to and return on Friday afternoon or evening to Davis.

Please let me know your reaction to this suggestion at your earliest convenience. If you prefer to call, I am usually around; call collect.

Sincerely yours,

W. C. Schnathorst
Plant Pathologist, U.S.D.A.

WCS:DK
CC-Larry Nourse ✓

Larry: I have attempted to reach Bob by phone but have failed. I thought I could say more in a letter and consequently have written him. I am sending this copy to you so that in case he didn't receive the letter, you could forward it to the proper address.

over

I suppose John Turner has mentioned to you that I have succeeded in getting bacterial blight out of a gin on the Western slope. For your record the gin is located on Howard Ave. southeast of Coalinga, Calif. At this writing the organism has been obtained from plant debris from the auger in the inclined cleaner as well as from seed and debris from the seed augur in the gin stand. This gin is run by the San Joaquin Cotton Oil Co.

Sincerely

Bill

August 17, 1959

Mr. Howard T. McLean
Agricultural Commissioner
Madera County
221 West 7th Street
Madera, California

Dear Mr. McLean:

As in the past, we have employed Bob Martin to carry on a survey for the Angular Leaf Spot or Bacterial Blight in cotton.

You have cooperated the last four years in making a spot check of the sprinklered cotton fields in your county and I hope you will be in a position to do this again this year.

Our offer still stands -- if you are short of funds, we will be glad to assist by supplying some funds to take care of one or two men during the time of the survey, if you need it.

This survey is of great importance to your growers and to the Distributors, so we may make plans for the future and protect the cotton grower.

Thanking you for your cooperation, I am

Yours truly,

L. B. Nourse, Manager

LBN:ps
CC: Tom Cherry, Jr.
Charles Cleary

COPY

August 17, 1959

Mr. E. O. Mankins
Agricultural Commissioner
Tulare County
P. O. Box 1149
Visalia, California

Dear Mr. Mankins:

As in the past, we have employed Bob Martin to carry on a survey for the Angular Leaf Spot or Bacterial Blight in cotton.

You have cooperated the last four years in making a spot check of the sprinklered cotton fields in your county and I hope you will be in a position to do this again this year.

Our offer still stands -- if you are short of funds, we will be glad to assist by supplying some funds to take care of one or two men during the time of the survey, if you need it.

This survey is of great importance to your growers and to the Distributors, so we may be able to make plans for the future and protect the cotton grower.

Thanking you for your cooperation, I am

Yours truly,

L. B. Nourse, Manager

LBN:ps
cc: Tom Cherry, Jr.
Charles Cleary

COPY

August 17, 1959

Mr. L. O. Haupt
Agricultural Commissioner
Kings County
990 - 11½ Avenue
Hanford, California

COPY

Dear Mr. Haupt:

As in the past, we have employed Bob Martin to carry on a survey for the Angular Leaf Spot or Bacterial Blight in cotton.

You have cooperated the last four years in making a spot check of the sprinklered cotton fields in your county and I hope you will be in a position to do this again this year.

Our offer still stands -- if you are short of funds, we will be glad to assist by supplying funds to take care of one or two men during the time of the survey, if you need it.

This survey is one of great importance to your growers and to the Distributors, so we may make plans for the future and protect the cotton grower.

Thanking you for your cooperation, I am

Yours truly,

L. B. Nourse, Manager

LBN:ps
cc: Tom Cherry, Jr.
Charles Cleary

August 17, 1959

Mr. Seldon Morley
Agricultural Commissioner
Kern County
P. O. Box 1351
Bakersfield, California

Dear Seldon:

As in the past, we have employed Bob Martin to carry on a survey for the Angular Leaf Spot or Bacterial Blight in cotton.

You have cooperated the last four years in making a spot check of the sprinklered cotton fields in your county and I hope you will be in a position to do this again this year.

Our offer still stands -- if you are short of funds, we will be glad to assist by supplying some funds to take care of one or two men during the time of the survey, if you need it.

This survey is one of great importance to your growers and to the Distributors, so we may make plans for the future and protect the cotton grower.

Thanking you for your cooperation, I am

Yours truly,

L. B. Nourse, Manager

LBN:ps
cc: Tom Cherry, Jr.
Charles Cleary

COPY

August 17, 1959

Mr. E. A. Danison
Agricultural Commissioner
Merced County
740 - 22nd Street
Merced, California

Dear Mr. Danison:

As in the past, we have employed Bob Martin to carry on a survey for the Angular Leaf Spot or Bacterial Blight on cotton.

You have cooperated the last four years in making a spot check of the sprinklered cotton fields in your county and I hope you will be in a position to do this again this year.

Our offer still stands -- if you are short of funds, we will be glad to assist by supplying some funds to take care of one or two men during the time of the survey, if you need it.

This survey is of great importance to your growers and to the Distributors, so we may make plans for the future and protect the cotton grower.

Thanking you for your cooperation, I am

Yours truly,

L. B. Nourse, Manager

LBN:ps
cc: Tom Cherry, Jr.
Charles Cleary

COPY