

Cooperative
EXTENSION WORK IN AGRICULTURE AND
HOME ECONOMICS
STATE OF ARIZONA.

SUPPLEMENT TO
THE ANNUAL REPORT OF THE
COUNTY AGENT DATED NOV. 30, 1920.

Graham and Greenlee
Counties.

Cotton Project Report giving
complete data on the records of the
work which was not completed at the
time the annual report was made.

By
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County Agent.

COTTON PROJECT REPORT, GRAHAM AND GREENLEE COUNTIES, 1920.

A Preamble.

This supplementary report of the County Agent's activities with cotton is made at this time because at the time of the Annual Report the cotton records were so incomplete that anything conclusive could not be gotten. Since that time the cultural data and cost records have been collected, and analysed so that some idea can be had of the season's results.

HISTORY

The prices for the 1918 - 1919 cotton crops, coupled with the apparent world shortage of cotton at the beginning of 1920, caused to be developed within Graham County a very wide spread belief that cotton would prove a good crop for the current year. This movement in favor of a heavy local planting was reinforced by the results which were reported from local growers during 1919. On ordinary valley land authentic reports indicated as high a net return as two hundred dollars per acre. This also in view of the fact that the reported cost of growing the crop was little more than that of producing corn. The County Agent had constant inquiries for information about growing the crop and its possibilities. The interest became so universal that a meeting was called at which the possibilities of an extensive planting were discussed. A good many farmers

present decided that they would plant cotton if they could secure an ample supply of good seed, the feeling being that they wanted the very best seed obtainable. A committee was appointed to locate this seed, of which the County Agent was Chairman. The meeting expressed itself as being highly in favor of Upland cotton in preference to any other variety as the tests of 1919 showed that this cotton would yield well on the valley land and that it had good staple which commanded a ready sale. The County Agent finally located some seed in Yuma, the field from which it came having been inspected by a Committee, of which Prof. G. T. Thompson was a member, and pronounced by them to be among the best seed available for planting. A total of approximately forty-three thousand pounds of this seed were brought in and distributed to about one hundred growers, at a cost of \$7.00 per hundredweight, F.O.B. Somerton, so that the total cost to the farmer was about 8¢ per pound. A local firm financed the deal without charging the farmer any commission.

After the cotton seed was distributed the County Agent was called upon to supply so much cultural data that a series of mimeographed circulars were decided upon and the first one dealt with the preparation of the soil and the time of planting. This was prepared and sent out some time in advance of the date of planting. This was followed later by a circular on thinning and weeding, and later again by one on weeding and irrigation. These were sent to all of the farmers who were growing cotton within the county and

were reinforced by newspaper articles, personal visits to those requesting help, and by local meetings at which the cultural methods advisable were discussed.

Later in the season a series of cotton tours were held, designed to show to the farmer the results of the season's work.

Cotton Tours. During September four cotton tours were held where five had been planned. The one planned but not ran was at Glenbar where the committee thought the lessons were not sufficiently strong or pointed to make it worth while.

Methods Followed. The tours at Ft. Thomas, Pima and Thatcher were staged mostly through the efforts of local committees, that is, they advertised the tours and outlined the trip. At Ft. Thomas, Pima and Lebanon the committees went with the Agent some time before the tours and selected the fields to be visited. During the tours they aided in pointing out the lessons to be emphasized.

At the proper times the necessary notices were gotten out by the agent and the local committees did their part by talking it up among the farmers. The notices sent out by the agent and the posters displayed were designed only to serve as reminders. All of the tours were ran in the afternoons in most cases starting about two o'clock. At each field visit, the grower described the methods of planting, tillage, and the number of irrigations given in bringing the crop to its then state of maturity.

Points emphasized or lessons designed to be conveyed

consisted of the following: value of irrigation in producing proper length of staple; effect of too much water; value of time of planting; relative merits of different varieties and effect of thinning.

Special emphasis was laid on the necessity of studying the soil and especially the water content of the soil and by it gauging the amount of irrigation to be given. It was pointed out that on the low bottom lands good cotton could be and was being grown with one irrigation, and on the same type of land the ruinous effect of repeated irrigations was shown in the dense growth which at that time was causing the lower matured bolls to mould instead of opening properly.

The relative merits of the Lone Star cotton and the common and imported Upland were shown and the interest aroused by the Lone Star square well for the breeding work for next year. Three fields of Pima cotton were visited and from indications it looks like if cotton is planted next year a good deal of it will be Pima.

Visiting Specialists. We were very fortunate in having Dean Working and Prof. Thompson with us on the last tour. Prof. Thompson's talks on the various phases of the cotton industry were much appreciated by the farmers present. Dean Working also made a splendid impression on those present, and started some new thoughts among the farmers.

Special Features. The committee at Ft. Thomas staged a chicken dinner before the trip was begun. It was an immense success. At the end of the trip, they had provided a lot

of watermelons which also proved very satisfying.

Dates and Attendance. Tours were held at the following places on the dates named, St. Thomas, Sept. 16; Lima, Sept. 20; Lebanon, Sept. 29; Thatcher, Sept. 30. Committees respectively J. Y. Lee; W. L. McBride & C. J. Farrington; J. L. L. Nixon; James Porter & H. C. Layton; (Ed Richardson for Lebanon). Total attendance 136. The Smith-Hughes students in Lima, Thatcher & Safford participated in the excursions.

Expressions from those attending were appreciative of the tidings learned - these things seemed well worth the time spent in seeing them.

CULTURE OF COTTON IN NEW AND VARIETY TESTS.

At the beginning of the season the possibilities for learning something about the handling of the cotton crop were seen and accordingly about a half dozen farmers agreed to conduct variety tests, a similar number agreed to conduct thinning tests and three other farmers agreed to grow some Lone Star cotton, the seed of which was supplied in cooperation with the agronomy department. One of these farmers grew his Lone Star cotton between some imported Nebane and some of the common cotton grown in previous years at Lebanon.

Of these conducting variety tests only two reported in such shape that any tangible idea could be gotten of the relative value of the common or cactus cotton and the imported Nebane. It will be noticed from the following

table that one of these demonstrators was also involved in the growing of Lone Star cotton.

Variety	Yield per Acre.			Yield per Acre.		
	Seed	#	%	Seed	lbs.	%
	Cotton	Lint	Lint	Cotton	Lint	Lint
Mebane	2546	835	33	1851	617	33
Common	1871	631	33.6	1639	528	32.2
Lone Star				1692	630	37.2

Of those agreeing to conduct thinning tests, only one reported the results, and this was in favor of the cotton widely thinned. This cotton at first was thinned to a distance of eighteen inches in the row with four rows being thinned to two feet apart in the row. The following table indicates the results of this test.

Thinned to 18 inches in the row yield.....63 lbs.

Thinned to 24 inches in the row yield.....81 lbs.

(Yield of thinned lots in pounds of seed cotton for the first picking only. Lots included four rows each.)

This indicates that the wider spacing of cotton in the row gave the heavier yield. However, these figures are based only on one picking and in the light of recent experience it would seem to indicate that there is room yet for investigation.

The rest of the demonstrator's field was thinned to about two feet apart, while that of his neighbor across the fence, so near that no difference could be noticed in the character or quality of the soil, was thinned to 18 inches apart in the row. They were both planted within a few days

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Common	1871	631	33.6	1639	529	32.2
Lone Star				1692	630	37.2

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of each other, were irrigated almost exactly the same, as the irrigation terms came at stated periods and each man irrigated whenever he got a chance, and they were both cultivated and kept free from weeds. This neighbor's cotton adjoining him averaged about eighteen inches apart in the row and his total average yield from a nineteen acre field was 850 pounds of lint per acre, while that of the man whose field was thinned to twenty-four inches apart was 835 pounds of lint per acre, showing the difference in favor of the field thinned to eighteen inches apart of only fifteen pounds per acre.

In the Lone Star variety tests J.H.F. on light sandy loam and with a scarcity of water secured a yield of 1163 pounds of seed cotton which ginned 401 pounds of lint or 34.8 %. A.B. secured 16.92 pounds of seed cotton which ginned 630 pounds of lint or 37.2 %. These were on the acre basis, the first yield being from a 60 % stand.

In addition to the foregoing variety tests, the County Agent as the work progressed with the different demonstrators put down the different farm operations together with their cost per acre. These cost figures were based on day labor at \$3.00 to \$4.50 per day, and man and team at \$6.00 to \$7.00 per day. The actual cost of irrigations, water assessments, and interest on land being as represented, the interest in some cases was quite low, due to the land being low priced land. These figures for the cost of producing cotton crops are more interesting than reliable in

that costs of producing any given staple crop will vary according to the price of land and the price of labor. However, they are accurate for the year which they represent, at least accurate enough, so that, considering each group representative of a type, they show about what it cost to produce cotton in their particular localities. The following table gives the cost of producing cotton in the Lebanon district, where land is cheap, labor lower-priced, and water assessments likewise lower.

No. Acres	Land Prep.	Plant- ing Cultivating Hoeing	Irri- gating	Pick- ing	Gin- ning	Cost of Seed	Rent on Land 6 %	Land and Water Taxes	Clear- ing Land	Total
M.J.S. 4	4.25	4.00	1.00	32.00	9.50	1.50	4.00	11.00	1.00	68.50
B.A.N. 24	6.88	8.64	3.00	23.21	9.36	2.90	6.00	3.50		63.49
M R. 50	6.50	9.25	3.00	13.67	4.48	2.00	9.00	8.55		56.25
Total 78	17.63	21.89	7.00	68.88	23.34	6.40	19.00	23.05	1.00	188.24
Average 26	5.88	7.30	2.33	22.96	7.78	2.15	6.33	7.68	.33	62.75

The following table will give the cost of producing cotton on the lower valley land, valued at from \$300 to \$600 per acre. This land always produced a much heavier yield of cotton than that in Lebanon.

No.	Land Acres	Land Prep.	Plant-irri- ing Culti- vating Hoing	irri- gating	Pick- ing	Gin- ning	Cost of Seed	Rent on land 6 %	Land and Water Taxes	Clear- ing Land	Total
L.P.	56	7.91	17.36	.60	46.00	11.27	2.54	24.00	7.45	1.00	118.39
J.M.M.	19	8.00	12.25	2.75	66.41	27.45	1.73	30.00	9.00	1.00	158.59
A.B.B.	6.5	2.50	14.00	2.00	48.54	14.84	1.85	25.00			108.73
R.G.L.Jr.	35	7.57	9.41	1.42	35.05	9.54	3.00	24.00	4.09		95.08
Total	115.50	25.98	53.02	6.77	196.36	63.10	9.12	103.00	20.54	2.00	479.89
Average	23.88	6.50	13.26	1.69	49.09	15.78	2.28	25.75	5.14	.50	119.95

The following table is a summary of all of the reports which were considered accurate enough to be included in this report. A good many additional reports were received but were faulty in so many respects that they were not considered representative.

No.	Land Acres	Land Prep.	Plant-irri- ing Culti- vating Hoing	irri- gating	Pick- ing	Gin- ning	Cost of Seed	Rent on land 6 %	Land and Water Taxes	Clear- ing Land	Total
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	20	4.75	11.25	1.60	*64.36	1.60	18.00	5.50	1.20	108.26	
S.	4	4.25	4.00	1.00	32.00		9.50	1.50	4.00	11.00	1.00	68.50
	9	4.25	8.00	1.33	43.70		12.08	2.83	*Half of crop			72.19
R.	24	6.88	8.64	3.00	23.21		9.36	2.90	6.00	3.50		63.49
	56	7.91	17.36	.60	46.36		11.27	2.54	24.00	7.45	1.00	118.39
M.	19	8.00	12.25	2.75	66.41		27.45	1.73	30.00	9.00	1.00	158.59
B.	6.5	2.50	14.00	2.00	48.54		14.84	1.85	25.00			108.73
L.	5	6.00	10.65	1.40	45.50		12.60	2.00	6.00	1.80	1.00	87.25
	50	6.50	9.25	3.00	13.67		4.48	2.00	9.00	8.55		56.25
L.Jr.	35	7.57	9.41	1.42	35.05		9.54	3.00	24.00	4.09		95.08
Total	227.50	58.61	104.81	18.10	322.76		111.12	20.95	146.00	50.89	5.20	936.73
Average	22.75	5.86	10.48	1.81	32.28		11.11	2.10	14.60	5.09	.52	93.63

eliminated in computing average.