OKLAHOMA
AGRICULTURAL AND MECHANICAL COLLEGE
AGRICULTURAL EXPERIMENT STATION
STILLWATER, OKLAHOMA

Outfield Experimental Results

CREEK COUNTY
For
1925, 1926, 1927

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FOREWORD

This bulletin is a report of the outfield work in Creek county, Oklahoma, conducted by the Experiment Station of the Oklahoma Agricultural and Mechanical College.

Outfield experiments in Oklahoma are conducted by the Department of Field Crops and Soils of the College, and have been going for three years under the supervision of H. C. Potts, assistant agronomist in charge, who gives direct supervision to all outfield experimental work. Work is now being conducted in McClain, Bryan, Okmulgee, Pittsburg, McIntosh, Creek, Nowata and Garfield counties. The Garfield county work was started in 1926. A few acres are rented from each place of some good farmer who supplies the land, the labor, tools and equipment, and for his services takes the crops and a small agreed sum to pay him for his extra trouble.

In addition to the work in the above named counties, specialized work is being conducted in two places: (1) at Granite on the State Reformatory farm, for the benefit of the farmers of Southwestern Oklahoma. Roy W. Ellithorpe, assistant agronomist, is in charge of this work. It was established three years ago through the cooperation of the late Dr. G. A. Waters, then warden of the reformatory. It was continued under the administration of his successor, Mr. J. J. Savage. The present warden, Mrs. G. A. Waters, widow of Dr. Waters, has been enthusiastic in her cooperation in the continuance of the work. (2) At the Panhandle Agricultural College at Goodwell special work is being conducted under the supervision of H. H. Finnell, associate agronomist, who is in charge of the work at that place in crops and soils, in cooperation with the Panhandle Agricultural College. This work is for the benefit of the Panhandle and the Northwestern section of Oklahoma.

In order to extend Outfield Experimental work to other counties, additional funds will be necessary.

REPORT OF EXPERIMENTAL WORK IN CREEK COUNTY

The experimental work in Creek county is being carried on with W. J. Yochum who lives two miles southeast of Sapulpa. The soil on which these experiments are conducted is of a loamy nature and is representative of the average upland soils of that locality.

CORN VARIETY TEST

Table I—Corn Variety Tests Yield in Bushels Per Acre**

Variety	1925	1926	1927	Average	Rank
Silvermine	4.2	23.8	25.0	17.7	5
Pride of Saline	3.6	28.9	28.2	20.1	3
Surcropper	1.6	20.1	27.0	16.2	8
Reid's Yellow Dent (Clay)	7.1	25.0	21.8	18.0	4
Reid's Yellow Dent (Cole)	*	*	17.8		
Ferguson Yellow Dent	4.4	21.3	35.1	20.2	2
Midland Yellow Dent	4.5	20.1	38.5	21.0	1
Dent Squaw	*	12.8	22.3	17.5***	6
Chisholm	4.0	14.6	21.0	13.2	9
St. Charles White	4.8	24.1	22.8	17.2	7

*Not planted.

**70 lbs. ear corn per bushel.

***Two-year average.

The season of 1925 was very poor for corn production in this section. Even though the percentage variation between some varieties was high, none of the varieties gave a very high yield. Because of the low yields in 1925, the average for the three years seems rather low, but under these conditions such varieties as the Midland Yellow Dent, Pride of Saline and Ferguson Yellow Dent can be recommended for the upland soils of this locality.

GRAIN SORGHUM VARIETY TEST

Each year the following varieties of grain sorghums were grown: Darso and Common, Hegari, Reed's and Sunrise kafir, but all the grain from each of the varieties was destroyed by the birds except the Darso in 1926 which gave a yield of 34 bushels per acre. The size of plots planted to these varieties being 1-20 acre to a variety makes it difficult to keep the birds from destroying most of the grain once they get started. However, on a larger acreage and under field conditions these crops are not damaged to any great extent.

SWEET SORGHUM VARIETY TEST

Table 2—Sweet Sorghum Varieties Yield in Tons of Dry Forage Per Acre*

Variety	1925	1926	1927	Average	Rank
Sumac	3.96	1.78	5.36	3.70	3
Orange	3.38	2.48	4.65	3.50	4
African Millet	4.06	3.77	4.10	3.98	2
Red Amber	1.75	3.47	2.03	2.63	5
Seeded Ribbon	4.94	3.50	7.00	5.15	1

*All forage was weighed when dry enough to store in barn.

While the Seeded Ribbon cane as shown in Table 2 yielded about a ton and a half per acre more than any other variety, it cannot be recommended over the other varieties because of its lack of quality. The Seeded Ribbon has a very large stalk and contains a great amount of moisture when cured under field conditions. The Red Amber being an early maturing variety, matures early in the summer. The quality of hay is lessened because of its drying out during the hot dry weather, therefore it cannot be recommended. The African Millet while a good yielder has a tendency to lodge and does not have quite the high quality of forage that the Sumac and Orange have and for that reason cannot be recommended over these varieties.

SOYBEAN VARIETY TEST

Table 3—Soybean Varieties Yield of Grain and Forage Per Acre

Variety	1925		1926		1927		Average	
	Bu. Grain	Tons Forage	Bu. Grain	Tons Forage	Bu. Grain	Tons Forage	Bu. Grain	Tons Forage
Virginia	**	.75	3.5	.75	5.0	.94	4.25	.81
Laredo	**	.86	6.00	2.26	4.0	1.39	5.0	1.50
Chiquita		*		*	7.0	.92	7.0	.92
Old Dominion		*		*	4.3	1.34	4.3	1.34

*Not planted.

**No seed harvested.

From the data obtained, the Laredo has not only given the highest yield of forage per acre but the quality is much better than the Virginia or Chiquita. Of course it will take several years results in order to determine definitely which varieties should be grown in this section.

COWPEA AND MUNG BEAN VARIETY TEST

Table 4—Cowpea and Mung Bean Varieties Yield of Grain and Forage Per Acre

Variety	1925		1926		1927		Average	
	Bu. Grain	Tons Forage	Bu. Grain	Tons Forage	Bu. Grain	Tons Forage	Bu. Grain	Tons Forage
Early Buff	7.3	.96	8.7	.45	15.0	1.12	10.5	.84
New Era	7.2	.94	7.0	.63	10.0	1.31	8.1	.96
Whippoorwill	6.0	.93	14.0	1.07	6.7	1.70	8.9	1.25
Brabham	3.1	.99		*	7.7	1.80	5.4	1.39***
Red Ripper		*	8.7	1.47	3.7	2.05	6.2	1.76***
Blackeye	9.2	.92	17.5	.61	8.3	1.18	11.7	.90
Erect Mung B'n		*	**	1.06	**	2.43		1.74***
Dwarf M'ng B'n	**	.90	6.3	1.13	**	1.72		1.25

*Not planted

**No seed harvested.

***Two-year average

For an anuual legume, cowpeas can be highly recommended as a forage crop for this section. As a dual purpose variety, the Whippoorwill is probably the best. The Early Buff or the Blackeye can be recommended as seed producting varieties.

While he Erect Mung Bean gives a higher yield of forage per acre than does some of the varieties of cowpeas, the quality is not so good and the seed production is much lower. The Dwarf variety because of its habit of growth, is very difficult to harvest. For that reason it cannot be recommended.

OAT VARIETY TEST

There were no oat varieties planted in 1925 and in 1927 the yield was so low that no record was taken. The yield for 1926 was as follows: Fulghum 59, Kanota 53, Nicholson's Extra Early 33, Nicholson's 100 Bushels, 48, and local variety 42 bushels per acre.

COTTON VARIETY TEST

The lack of moisture was the limiting factor in cotton production in this section in 1925, while in the season of 1927 a large per cent of the crop was destroyed by the boll weevil.

The data obtained from these tests show that under adverse conditions like these, the early maturing varieties give the highest money value per acre. This value is based on the average price paid for Middling cotton using the length of staple of each of these varieties. This method, however, favors the later maturing and penalizes the earlier ones for usually a higher grade is obtained from the earlier varieties in this locality because they open at a season when conditions

are more favorable for harvesting. The three main factors taken into consideration in determining the value of these varieties are length of lint, linting percent and yield per acre. For the true value of a variety to any community is the amount of money secured from the sale of lint and seed. These varieties were compared on that basis.

There are some objection, however, to some of the early maturing varieties. They usually have a smaller boll and are not as storm resistant as some of the later maturing varieties. The Half and Half is the only one of the leading varieties that has a shorter staple than seven-eighths of an inch.

FERTILIZER EXPERIMENTS ON COTTON

During the years of 1925 and 1926 good crop yields were secured but in 1927 boll weevil damage was exceedingly great. It is quite interesting, however, to note the influence of superphosphate (acid phosphate) during this adverse year. It will be observed that where this fertilizer was used there was a general increase in yield over other treatments. This is no doubt due to the influence phosphates have in increasing maturity. While certain combinations of superphosphate (acid phosphate) and other fertilizer ingredients have given increases in yield for some years, superphosphate (acid phosphate) alone has given about as consistent results as any fertilizer or fertilizer combination used. For the last two years the mixture of superphosphate (acid phosphate) and kainit has given good returns. The results for 1927 with this treatment is exceedingly good. The only two treatments which have paid have been superphosphate (acid phosphate) alone and the mixture of superphosphate (acid phosphate) and kainit. The former mixture gave an increase above the cost of the fertilizer of $4.23 per acre for the three years, while the phosphorus-potash mixture gave a total increase for the three years above the cost of the fertilizer of $12.20 per acre. Each of these treatments was used at a slight loss in the year 1925 but at a good profit during the years 1926 and 1927. All of the rest of the commercial fertilizers were used at a loss after deducting the cost of the fertilizer.

Until more results are secured in this section, no definite recommendations can be made other than to say that favorable returns seem likely from the use of superphosphate (acid phosphate). Certain combinations may prove profitable but the returns so far have not been consistent one year with another. Nitrogen by itself does not pay. Superphosphate (acid phosphate) and mixtures containing this ingredient have produced more favorable returns.

Table 6—Results of Cotton Fertilizer Test. (Yield in Pounds Per Acre)

	Treatment	1925	1926	192;	Average
1.	Check	950	1160	140	750
2.	Nitrate of soda 100 lbs.	810	1092	160	687
3.	Nitrate soda 100 lbs. (Chopping)	844	984	150	659
4.	(Nitrate soda) (50 lbs. planting) (50 lbs. chopping)	765	1270	200	745
5.	Acid phosphate 200 lbs.	704	1510	350	858
6.	Check	692	1400	260	784
7.	(Acid phosphate 200 lbs.) (Nitrate soda 100 lbs.)	744	1430	420	865
8.	(Acid phosphate 200 lbs.) (Kainit 25 lbs.)	610	1580	480	890
9.	(Nitrate soda 100 lbs.) (Kainit 25 lbs.)	652	1330	220	735
10.	(Acid phosphate 160 lbs.) (Nitrate of soda 30 lbs.) (Kainit 10 lbs.)	610	1560	260	810
11.	Check	579	1440	210	749
12.	(Acid phosphate 320 lbs.) (Nitrate soda 60 lbs.) (Kainit 20 lbs.)	661	1690	300	884
13.	Manure 8 T. per acre, 1925	661	1400	190	750
14.	(Acid phosphate 100 lbs.) (Manure 8 T. per acre, 1925)	662	1360	270	784
15.	Legumes Rotation. Cowpeas to be turned under		1160		
16.	Legumes Rotation. Cowpeas to be turned under		1260		
17.	Cotton Rotation	692		200	684
18.	(Cotton Rotation) (Acid phosphate 200 lbs.)	610		300	723
19.	Check	631	1325	280	745

Table 5—Cotton Varieties Showing Length of Staple, Linting Percent, Yield of Seed Cotton, and Money Value Per Acre

Variety	1925				1926				1927				Average Yield	Average Value
	Length Lint	% Lint	Yld. Per Acre	Value Per Acre	Length Lint	% Lint	Yld. Per Acre	Value Per Acre	Length Lint	% Lint	Yld. Per Acre	Value Per Acre		
Okla. Tri. 44	14	34.59	625	53.09	15	33.33	1200	63.58	15	30.24	210	15.65	698	44.82
Acala 5-37	14	37.53	633	57.41	16	36.18	950	51.56	16	31.58	110	8.71	564	39.23
Acala 5	*	*	*	*	*	*	*	*	17	32.10	110	9.29	110***	9.29***
Mebane	14	36.66	464	41.24	15	36.48	600	32.74	14	29.25	110	7.90	391	27.17
Delfos 6102	*	*	*	*	*	*	*	*	17	33.58	120	10.80	120***	10.80***
New Boykin	14	33.58	614	50.76	15	32.27	550	24.36	14	30.24	200	14.63	455	29.92
Okla. Tri. 44	14	32.85	589	47.81	15	31.03	1600	75.94	15	31.21	190	14.42	793	46.06
Tri. 406	15	36.12	589	55.48	16	36.04	530	28.62	14	32.57	100	7.80	406	30.63
Lone Star	13	36.12	525	34.32	16	34.93	580	31.19	15	33.57	70	5.66	392	23.72
Rowden	14	33.68	480	39.78	15	31.60	700	33.74	16	31.00	90	7.02	423	26.53
Half and Half	12	40.00	579	50.92	11	41.81	870	44.64	12	36.00	150	12.39	533	35.98
Trice	*	*	*	*	14	30.38	930	39.70	13	28.07	190	12.97	560**	22.66
Okla. Tri. 44	14	31.81	663	52.46	15	32.09	1260	61.55	15	31.54	200	15.42	696	42.44

*Not planted.
**Two year average.
***One year only.