

OKLAHOMA
AGRICULTURAL AND MECHANICAL COLLEGE
AGRICULTURAL EXPERIMENT STATION
STILLWATER, OKLAHOMA

Summary of Results
of
EXPERIMENTS
Conducted by
THE OKLAHOMA
AGRICULTURAL EXPERIMENT
STATION
at the
BOYS' STATE REFORMATORY
Granite, Oklahoma
During the Years
1924-1926

FOREWORD

This work was planned by Mr. Roy E. Ellithorp, Professor Daane and other members of the staff of the Department of Crops and Soils of the Oklahoma Agricultural Experiment Station. The work is being carried out under the supervision of Mr. Ellithorp. The land and labor are furnished by the Reformatory; seeds and fertilizers are furnished by the Experiment Station.

This is in the nature of a preliminary report. The work has been going but two years and it is not possible to draw definite conclusions in so short a period of time.

C. T. DOWELL, *Director.*

Report of Experiments at Granite Reformatory

COTTON VARIETY TEST

The cotton variety test in southwest Oklahoma shows that the medium early maturing varieties have given the highest yields on an average the last two years, the leading varieties being the New Boykin, Frederick Mebane, Acala 5 and Dixie Triumph. The Dixie Triumph being a wilt resistant variety may be a cotton that can be recommended for the farmers who have wilt infected lands. This rank only shows the yield of seed cotton per acre, the money value being determined after having the length of staple and linting percent. The cotton varieties were planted on May 14. The early maturing varieties planted at this date seemed to mature forms at the time the hot winds came in August and for that reason a large number of forms were thrown off that were not lost in the case of the medium or late maturing varieties. This was especially true in 1926.

DATE OF PLANTING COTTON

The following information was obtained in 1926 on the date of planting test using an early maturing variety of cotton (Oklahoma Triumph 44); May 20 to June first giving the highest yields, the yield decreasing according to the earliness of planting. However, no yield at all was obtained on cotton planted as late as June 20. These results might have been different had another variety of cotton been used since the Oklahoma 44 is an early maturing variety. A medium or late maturing variety such as New Boykin or Lone Star might have given a higher yield planted on earlier dates.

COTTON SPACING

The two-year average of cotton spacing gave the largest yields in the 24-inch spacing, the yield per acre decreasing as the stand became thicker. The thick spacing did not only give a lower yield but gave an inferior quality of cotton, the bolls being much smaller, harder to pick and more of them premature.

CULTURAL METHODS OF COTTON

In the cultural methods of cotton, cultivating deep three times gave the largest yield by a little over 200 pounds per acre and shallow three times ranked second, while no cultivation at all gave less than one-third the yield produced by three times deep. While once every week and once every two weeks gave about the same yields, they were about 300 pounds less than the three times deep. It seems that the purpose of cultivation in southwest Oklahoma is to keep the crop free from weeds and when that is done, the crop has been cultivated sufficiently.

COMMERCIAL FERTILIZERS ON COTTON

The plats to which commercial fertilizers were added did not give any increase in production over the plats not fertilized. This may be due to the lack of moisture during the growing season or to the fact that the soil contains a sufficient amount of plant food elements.

GRAIN SORGHUM VARIETIES

Out of the 20 varieties of grain sorghums grown in 1925 and 1926, the eight leading varieties rank in production of grain in the following order: Darso, Blackhull White Kafir, Sunrise Kafir, Schrock Kafir, Reed's Kafir, Chiltex, Hegari Kafir and Yellow Milo. The general opinion is that southwest Oklahoma is more of a milo producing section than of other varieties of grain sorghums, but the above results do not indicate this belief for Darso produced an average of over 1,000 pounds to the acre more than the milo. The Straightneck maize, which is a milo hybrid, gave the lowest yield of any variety.

RATE OF PLANTING GRAIN SORGHUMS

In the spacing test of Reed's Kafir, the two years average indicates that the thick spacing (not thinned) gave the greatest yield of both grain and forage. When the space between stalks is increased, the yield of both grain and forage seems to decrease accordingly. The averages of not thinned for the two years are: forage 4150 and grain 1337 pounds and in the 30-inch spacing forage 3257 and grain 952 pounds per acre.

CULTURAL METHODS OF KAFIR

In the cultural methods of Kafir, the same results were obtained as in those of cotton, that is, the cultivating three times gave just as good results as frequent cultivation. Therefore, it might be said that if the ground is in a good tillable condition at the time of planting, all that is necessary is frequent enough cultivation to keep down the weeds and grass.

VARIETIES OF SWEET SORGHUMS

In the variety test of sweet sorghums, the two-year average shows that the late maturing varieties do not yield as well as the medium maturing ones, the Sumac and Orange giving the highest yields.

SOYBEAN VARIETIES

There was very little difference in the yield of Virginia and Laredo soybeans. However, the quality of hay in the Laredo variety was much better than the Virginia. The Mammoth Yellow gave the highest yield of both grain and forage in 1925 but fell down in 1926. The Biloxi, which is a very late maturing variety, gave a heavy forage production but the forage was very coarse and did not mature seed in southwest Oklahoma. The Morse variety usually considered a very heavy seed producer did not yield as much seed or hay as some of the above varieties.

THE SPACING TEST OF SOYBEANS AND COWPEAS

Soybeans and cowpeas gave the largest yield where they were left thick. Not only was the yield greater but the quality of hay was much better.

DATE OF PLANTING SOYBEANS AND COWPEAS

April 19 was the date of the first planting of soybeans and this date gave the greatest yield. Probably the yield could be increased

by planting them as early as April first or 10th, but with cowpeas, May 20th to June first gave the best production.

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COWPEA VARIETIES

In the cowpea varieties the Groit gave the greatest yield of forage followed by the Whippoorwill and New Era, while the New Era was the highest seed yielder. The leading cowpea yielded about 1500 pounds of forage per acre more than any of the soybeans.

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MUNG BEANS

The Mung beans gave a lower yield than either of the leading soybeans or cowpeas, but indications from other tests in this section are that the erect variety will compare favorably with either soybeans or cowpeas.

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CORN VARIETIES

The corn varieties in 1926 indicate that the early maturing ones are the most productive. Pride of Saline, a variety developed at Hays, Kansas, gave the greatest yield and Dent Squaw was second.

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ROOT CROPS

The mangel-Wurzels produced a little over 35 tons per acre, almost twice as much as the sugar beet and about ten times the yield of stock carrots. The turnips and rutabages gave such a low yield that no results were taken. The above results indicate that the mangels can be grown very profitably on a small acreage in this section; however, a great amount of hand labor is required in the proper thinning of this crop. In addition to that, no more cultivation is required than for cotton or any other clean cultured crops.

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WHEAT VARIETIES

The results for 1926 show that the hard wheat varieties give the

greater yields. There was but very little difference in the yield of the following varieties: Turkey, Kanred, Blackhull and Illinois 10-110.

OAT VARIETIES

The Fulghum strains of oats outyielded the other varieties. The Extra Early was first, Kanota second (both a selection from the Fulghum), Fulghum third and Ferguson 922 fourth. The Fulghum strains are several days earlier than the Texas Red and Ferguson 922.

WINTER BARLEY

There was a very little difference in the three varieties of winter barley, the Michigan yielding 44 bushels, Wisconsin 40 bushels and Oklahoma 38 bushels. Barley in this section is usually a safe crop from a grain standpoint and when sown early in the fall, it makes an excellent pasture.

DATE OF PLOWING FOR SMALL GRAIN

Wheat and barley planted on ground prepared in early July gave an increase over later plowing. With wheat, July plowing gave 26 bushels, September 20 bushels; barley, July 53 bushels and September 28 bushels per acre.

With oats the December plowing gave the greatest yield while August gave the poorest yield.

WHEAT FERTILITY TEST

It seems that the soil in southwest Oklahoma needs the addition of organic matter as was indicated by the results obtained from this test. The plat to which ten tons of manure were added gave the highest yield followed closely by the plat that received two tons of straw. On the other plats the yield decreased in proportion to the amount of straw and manure applied.

TIME OF PLANTING SWEET CLOVER

The sweet clover planted in the fall of 1925 did not come up to a very good stand and by the summer of 1926 only a very few plants could be found, while the clover planted in February and March came up to a good stand and lived through the summer, making a good growth. The results indicate that spring seeding is to be recommended in preference to fall seeding.