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Summary of Experiments with
Corn and Wheat—1898.

Wheat.

The experiments were tried on upland prairie soil, in cultivation eight years. The plats were near together but there were considerable differences, not always known in advance. Chinch bugs caused injury unequally on different plats. The wheat was affected by ruste, some varieties much more than others.

In the variety test 86 plats with 56 claimed distinct varieties gave an average yield of 19.6 bushels per acre, compared with 39.6 bushels, in 1897. The largest yields were: Early Red Clawson, 35.2; Big English, 34.5; Fultz, 33.4; Fulcaster, 32.2; Red Russian, 30 bushels. Of these the three last named were among the best in the yields in 1897 and are counted as desirable as any tested. Thirty-four plats gave yield of between 20 and 30 bushels per acre, while 20 gave not more than 15 bushels per acre each. In no case did the wheat reach standard weight, many plats testing 55 to 56 pounds per bushel. The wheat was sown September 20-22, and matured from June 8-11. The soil was dry at the time of seeding and for

weeks thereafter. The wheat did not get a good start in the fall. It was somewhat injured by the frost March 22-23. There were marked difference in the yield of straw—varying from less than 1,400 to more than 5,000 pounds per acre.

For the two years 1897 and 1898 the following varieties have give average yields of over 40 bushels per acre—taking the yield from the best plat in each case: Fultz, 45; Red Russian, 42; Fulcaster, 41. The following have given average yields of from 35 to 40 bushels: Early Red Clawson, Big English, Mo. Blue Stem, Sibley's New Golden, Mealy, Crate, Lebanon, the following from 30 to 35 bushels: Dietz Longberry, Nigger, Bearded Monarch, German Emperor, Ex. Early Oakley, Longberry, Miami Valley, Early Ripe, Saskatchewan, Valley. With two or three exceptions each of these varieties gave relatively good yields in 1896.

In time sowing trials, neither very early nor late sowing proved best. Generally the best yields were from sowing September 25 or October 5.

Plats were sown at intervals at rate of 3, 4, 5, 6, and 8 pecks per acre, four plats at each rate. The average yield increased from thinnest to thickest seeding, with almost no difference whether 5 or 6 pecks were sown. In favorable seasons, thin often gives as large yields as thick seeding; in unfavorable seasons thick seeding is safer.

No perceptible benefit came from rolling the land in addition to harrowing it before seeding.

Some varieties suffered much more from rust than did others, but it is not certain that this was owing to the variety. Genesee Giant was the worst affected variety. In other places it is reported to have given large yields.

Corn.

Except as noted all tests were made with Adams White Dent, a good medium early variety which has been grown in the neighborhood for eight years.

TIME OF PLANTING.—Beginning March 28, plats were plant-

ed each week until April 25; also one May 13. The largest yield was from first planting; next from third. Aside from this there was steady decrease, except that planting May 13 gave larger yield than planting three weeks earlier. The later planting matured in less time than the earlier, there being only eight days difference in maturing of corn planted four weeks apart. In former years differences in yield caused by differences in time of planting were less marked.

THICKNESS OF PLANTING.—The results from comparisons of plats planted at different thicknesses were somewhat contradictory. In general the best yields were where the planting was at rate of one kernel at about each 12 inches in rows three feet eight inches apart. Where the rows were three feet apart the yields averaged less. It made little difference whether the kernels were planted singly or two, three, or four together at correspondingly greater differences. In 1897, on bottom land, there was small differences in yield whether the kernels were at rate of one for each 12, 15, or 18 inches. In 1896 the largest yield was where single kernels were nine inches apart

DEPTH OF PLOWING.—The largest yield, 60 bushels per acre, was from plat plowed with disc plow, running about six inches deep, with its subsoiler four inches lower, loosening ground to depth of 10 inches from surface. Almost as good yield was from plat plowed in same way except that subsoiler ran deeper—loosening to depth of 12 to 14 inches. Where the land was plowed eight inches deep with good riding plow the yield lacked little of being equal to the best. Singularly enough the yield was less where the subsoiler followed the eight inch plowing. The smallest yield by far was from plowing four inches deep.

ROOT PRUNING.—Ten hills on each of five plats were purposely root pruned with knife five times from May 17 to June 14—the period of cultivation. No injury resulted from attempted pruning where knife ran only three inches deep; in fact the yields were larger than on the unpruned check plats. Where the knife cut six inches deep within six inches from the stalk the yield was much reduced; also when the pruning was done

to depth of six inches at distance of 12 inches from stalks, but no harm came by pruning at depth of six inches, 22 inches from the stalks. Apparently there were few or no roots within three inches of the surface and few six inches from the surface in the center of the rows.

METHODS OF CULTIVATION.—The results were not conclusive. Taking averages, little differences were found whether the cultivation was deep or shallow. The two largest yields were nearly the same, one with deep, one with shallow cultivation. No gain came from very frequent cultivation. A plat cultivated twice gave larger yield than those cultivated even nine times. A yield of over 39 bushels per acre was had where only cultivation after planting was scraping surface, May 30. The kind of implement used seemed to make little difference. The season was more than usually favorable. In 1896 shallow cultivation gave better yields than did deep in all cases.

TEST OF VARIETIES.—Little was done in comparing varieties, trials in former years having seemed to show that a locally grown, medium early white variety was equal to any of the large number tried at the Station. An extravagantly praised variety, the Cornucopia or “seven eared” was tried giving a very small yield—less than 15 bushels per acre. The ears were small. This trial would indicate that the variety has little value for Oklahoma. Planted thinly on rich soil it might give a large yield from an individual stalk. The “Brazil Flour corn” sometimes recommended, gave a yield of 21 bushels per acre, or considerably less than half the usual yields of the dent variety used in all other experiments.

A large number of plats gave yields of from 40 to 60 bushels per acre. The soil was dry at time of planting, and in many cases not all the seed grew, giving an unsatisfactory stand. Chinch bugs did some damage on a number of plats.