

ROTATION AND TILLAGE TRIALS - 1955

Harvest of the 1955 trials marked the completion of 49 years of study in dry land farming at the Dickinson Experiment Station.

In the following summary table, 1955 yields for the 4 principal crops; wheat, oats, barley and corn, included in these trials are compared with annual averages for the past 5 years and with the 45 year average for the more important cultural methods under investigation.

Table 3 - Summary - Wheat Yields									
Cultural Method	No. Plots¹	1950	1951	1952	1953	1954	1955	Av. 1908-1952	Relative Yields % 1908-1952
Fallow	4	23.1	23.9	10.7	22.2	9.2	23.6	20.7	100%
Green Manure	3	24.5	23.7	8.9	24.3	12.0	24.9	18.8	91%
Disked Cornland	11	18.4	21.4	9.8	20.7	9.4	20.5	18.2	88%
S.P. Stubble	1	17.2	13.5	7.5	18.7	8.7	17.2	13.4	65%
F.P. Stubble	2	23.5	15.6	9.0	18.7	10.3	15.1	14.8	71%
Continuous:									
Spring Plowing	1	14.5	13.7	7.5	15.8	9.0	21.5	11.5	56%
Fall Plowing	1	8.7	13.0	9.2	14.6	4.5	12.2	11.0	53%

Alternate Wheat and Fallow	1	17.5	22.2	8.2	21.2	10.3	20.7	19.6	95%
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¹Varies slightly from year to year. Figures given are for 1955.

Table 4 - Summary Oat Yields

Cultural Method	No. Plots	1950	1951	1952	1953	1954	1955	Av. 1908-1952	Relative Yields % 1908-1952
Fallow	2	51.9	62.2	27.3	59.5	32.1	61.1	46.8	100%
Green Manure	3	58.7	54.6	24.6	65.1	38.0	64.2	45.2	97%
Disked Cornland	5	40.8	54.2	22.1	48.9	26.6	43.6	37.2	80%
S.P. Stubble	4	44.2	35.6	22.5	58.7	33.0	55.9	36.1	77%
S.P. Stubble	5	46.9	37.1	26.3	50.0	19.1	38.5	32.1	69%
Sod	3	43.1	44.9	26.5	48.2	22.3	52.0	33.8	72%
Continuous:									
Spring Plowing	1	30.6	42.5	16.9	37.8	25.3	35.9	26.6	57%
Fall Plowing	1	43.0	33.8	20.0	31.6	13.1	28.8	24.6	53%
Alternate Oats and Fallow	1	53.8	60.6	29.4	50.3	32.2	57.5	45.5	97%

Table 5 - Summary - Barley Yields

Cultural Method	No. Plots	1950	1951	1952	1953	1954	1955	Av. 1908-1952	Relative Yields % 1908-1952
Disked Cornland	1	24.0	35.2	15.9	29.3	15.5	23.3	21.2	87%
S.P. Stubble	1	29.6	22.7	12.4	29.0	18.4	20.4	16.2	67%
Continuous:									
Spring Plowing	1	19.4	28.1	16.9	27.1	15.9	20.8	16.0	66%
Fall Plowing	1	12.9	29.2	20.0	23.7	6.5	15.6	14.8	61%
Alternate Barley and Fallow	1	32.7	38.5	29.4	32.4	15.5	25.4	24.2	100%

Table 6 - Summary - Corn Grain Yields

Cultural Method	No. Plots ²	1950	1951	1952	1953	1954	1955	Av. 1908-1952	Relative Yields % 1908-1952
Spring Plowing	14	22.0	23.2	16.0	50.0	14.9	16.6	17.6	100%
Fall Plowing	4	24.1	25.5	18.1	30.0	4.7	9.6	16.2	92%
Continuous:									
Spring Plowing	1	22.1	29.1	14.9	22.9	4.2	17.9	19.0	108%
Fall Plowing	1	20.4	34.4	17.6	14.3	3.3	21.4	18.9	107%
Alternate Corn and Fallow	1	16.4	29.1	32.9	14.3	12.0	35.0	20.9	119%

²Varies slightly from year to year. Figures given are for 1955.

Table 7 - Summary - Corn Silage Yields									
Cultural Method	No. Plots	1950	1951	1952¹	1953	1954	1955	Av. 1908-1952	Relative Yields % 1908-1952
Spring Plowing	14	7990	7928	5569	13300	11433	6850	7168	100%
Fall Plowing	4	7224	8726	5450	10175	7450	4140	6268	88%
Continuous:									
Spring Plowing	1	7900	8180	2700	8900	5200	4800	6380	89%
Fall Plowing	1	6360	9520	4600	7100	7800	3560	6122	85%
Alternate Corn and Fallow	1	6600	7800	7000	9600	11100	6720	6900	96%
¹ Silage yields previous to 1952 figured on basis of air dry corn fodder yield calculated as 50% of silage weight.									

Wheat yields on cornland, fertilized at the rate of 125 lbs per acre of 16-20-0 commercial fertilizer in the new continuous fertilizer series, averaged 26.7 bushels per acre compared with 20.5 bushels per acre on unfertilized cornland, a difference of 6.2 bushels per acre in favor of the fertilized plots. However, silage yields from corn plots fertilized at the rate of 100 lbs. per acre of 8-32-0 commercial fertilizer applied in the drill row were no better than silage yields from unfertilized plots. Yields were 6310 lbs. of silage per acre from unfertilized plots compared with 6280 lbs. of silage per acre from the fertilized trials.

The new tillage trial comparing production on stubble land worked with the one-way disk, the double disk and the mold-board plow produced the following data. Average yield of wheat: on spring plowed stubble was 22.0 bushels

per acre; on one-wayed stubble was 17.6 bushels per acre and on double-disked stubble was 14.5 bushels per acre. In this trial production on spring plowed land was 34% better than on double disked land and 20% better than on land worked with the one-way disk.

Generally speaking, yields of all small grains were very good this year mainly because of favorable early season rainfall. Yields of corn were reduced by dry weather in July and August. Cereal rusts, other plant diseases or insects caused no important damage to crops this year.

Revision of several old tillage trials are being considered for 1956.

[Back to 1955 Research Reports Table of Contents](#)

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