**North Dakota State University * Dickinson Research Extension Center**
1089 State Avenue, Dickinson, ND 58601-4642 Voice: (701) 483-2348 FAX: (701) 483-2005

# ROTATION & TILLAGE TRIALS - 1952

The 1952 trials complete 46 years of study in Dry Land Soil Management at the Dickinson Experiment Station. All trials were grown on uniform cropping the first year, 1907, and for that reason, yields from the 1907 trial are not included in the long time average. This leaves 45 years' data available for a comparison of rotations, tillage and fertility problems under conditions represented at this station.

In the following summary tables, 1952 yields for the four principal crops included in these trials, wheat, oats, barley and corn, are compared with annual averages for the past five years and with the 45 year average for the more important cultural methods under investigation.

Table 4 - Summary - Wheat Yields - 1952
Rotation and Tillage Trials, Dickinson Experiment Station, Dickinson, North Dakota

| Cultural Method | No. Plots | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1908-1952 | Relative Yields 1908-1952 Fallow - 100% |
|---|---|---|---|---|---|---|---|---|---|
| Fallow | 3 | 23.3 | 41.2 | 9.7 | 23.1 | 23.9 | 10.7 | 20.7 | 100 |
| Green Manure | 5[1] | 27.6 | 37.1 | 6.5 | 24.5 | 23.7 | 8.9 | 18.8 | 91 |
| Disked Cornground | 9 | 25.1 | 34.7 | 10.3 | 18.4 | 21.4 | 9.8 | 18.2 | 88 |
| Spring Plowed | 2 | 18.6 | 26.6 | 6.1 | 17.9 | 15.3 | 7.8 | 15.8 | 76 |
| Fall Plowed | 4[2] | 23.2 | 27.8 | 9.1 | 21.9 | 19.8 | 11.4 | 16.2 | 78 |
| Continuous: | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Spring Plowed | 1 | 15.0 | 21.7 | 3.2 | 14.5 | 13.7 | 7.5 | 11.5 | 56 |
| Fall Plowed | 1 | 11.8 | 19.5 | 2.7 | 8.7 | 13.0 | 9.2 | 11.0 | 53 |
| Alternate Fallow and wheat | 1 | 18.5 | 34.5 | 7.2 | 17.5 | 22.2 | 8.2 | 19.6 | 95 |

[1]Average of three plots, 15, 17 and 32 only in 1952
[2]Includes wheat in manured rotation 62 which has a 45 year average of 18.5 b.p.a.

Table 5 - Summary - Oat Yields - 1952
Rotation & Tillage Trials, Dickinson Experiment Station, Dickinson, North Dakota

| Cultural Method | No. Plots | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1908-1952 | Relative Yields 1908-1952 Fallow - 100% |
|---|---|---|---|---|---|---|---|---|---|
| Fallow | 3 | 69.9 | 89.7 | 24.9 | 51.9 | 62.2 | 27.3 | 46.8 | 100 |
| Green Manure | 3 | 65.4 | 87.4 | 15.9 | 58.7 | 54.6 | 24.6 | 45.2 | 97 |
| Disked Cornland | 5 | 61.1 | 71.7 | 22.7 | 40.8 | 54.2 | 22.1 | 37.2 | 80 |
| Spring Plowed | 6 [1] | 63.8 | 62.2 | 24.2 | 41.5 | 40.0 | 20.9 | 34.6 | 74 |
| Fall Plowed | 5 | 60.5 | 48.4 | 19.1 | 46.9 | 37.1 | 26.3 | 32.1 | 69 |
| Sod | 3 | 65.5 | 49.2 | 23.6 | 43.1 | 44.9 | 26.5 | 33.8 | 72 |
| Continuous: | | | | | | | | | |
| Spring Plowed | 1 | 37.2 | 31.6 | 13.8 | 30.6 | 42.5 | 16.9 | 26.6 | 57 |
| Fall Plowed | 1 | 38.1 | 29.1 | 8.1 | 43.0 | 33.8 | 20.0 | 24.6 | 53 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Alternate Oats and fallow | 1 | 64.7 | 62.2 | 23.4 | 53.8 | 60.6 | 29.4 | 45.5 | 97 |

[1]Includes oats in manured rotation 62-45 year average of 37.7 b.p.a.

Table 6 - Summary - Barley yields - 1952
Rotation & Tillage Trials, Dickinson Experiment Station, Dickinson, North Dakota

| Cultural Methods | No. Plots | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1908-1952 | Relative Yields 1908-1952 Fallow - 100% |
|---|---|---|---|---|---|---|---|---|---|
| Fallow | 2 | 28.1 | 33.8 | 5.8 | 25.4 | 43.8 | 25.2 | 27.0 | 100 |
| Disked Cornland | 2 | 32.2 | 38.4 | 14.1 | 24.0 | 35.2 | 15.9 | 21.2 | 79 |
| Spring Plowed | 1 | 16.9 | 23.1 | 5.8 | 29.6 | 22.7 | 12.4 | 16.2 | 60 |
| Continuous: | | | | | | | | | |
| Spring Plowed | 1 | 21.5 | 22.3 | 7.7 | 19.4 | 28.1 | 16.9 | 16.0 | 59 |
| Fall Plowed | 1 | 23.8 | 18.3 | 1.5 | 12.9 | 29.2 | 20.0 | 14.8 | 54 |
| Alternate barley and fallow | 1 | 43.5 | 54.2 | 12.7 | 32.7 | 38.5 | 29.4 | 24.2 | 89 |

Table 7 - Summary - Corn Yields - 1952
Rotation & Tillage Trials, Dickinson Experiment Station, Dickinson, North Dakota

| CORN GRAIN | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Relative Yields |

| Cultural Method | No. Plots | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1908-1952 | 1908-1952 S.P. 100% |
|---|---|---|---|---|---|---|---|---|---|
| Spring Plowing | 16 | 42.6 | 30.0 | 13.9 | 22.0 | 23.2 | 16.0 | 17.6 | 100 |
| Fall Plowing | 4 | 37.4 | 30.2 | 13.7 | 24.1 | 25.5 | 18.1 | 16.2 | 92 |
| Continuous: | | | | | | | | | |
| Spring Plowing | 1 | 27.8 | 26.4 | 5.0 | 22.1 | 29.1 | 14.9 | 19.0 | 108 |
| Fall Plowing | 1 | 28.4 | 28.4 | 14.1 | 20.4 | 34.4 | 17.6 | 18.9 | 107 |
| Alternate Corn and fallow | 1 | 15.4 | 26.4 | 13.8 | 16.4 | 29.1 | 32.9 | 20.9 | 119 |

CORN SILAGE

| Cultural Method | No. Plots | 1947 | 1948 | 1949 | 1950 | 1951 | 1952* | 1908-1952 | Relative Yields 1908-1952 S.P. 100% |
|---|---|---|---|---|---|---|---|---|---|
| Spring Plowing | 16 | 12418 | 8902 | 4526 | 7990 | 7928 | 5569 | 7168 | 100 |
| Fall Plowing | 4 | 9836 | 8860 | 3920 | 7224 | 8726 | 5450 | 6268 | 88 |
| Continuous: | | | | | | | | | |
| Spring Plowing | 1 | 8640 | 7100 | 2100 | 7900 | 8180 | 2700 | 6380 | 89 |
| Fall Plowing | 1 | 6260 | 6780 | 4720 | 6360 | 9520 | 4600 | 6122 | 85 |
| Alternate Corn and fallow | 1 | 4120 | 6600 | 5740 | 6600 | 7800 | 7000 | 6900 | 96 |

* 1952 crop harvested as silage at proper stage of growth. Silage yields for previous years calculated on basis of corn fodder yield figured at 50 percent of silage weight.

Results in 1952, both for rotations and for tillage methods, followed rather closely the pattern which has been established over the long period these trials have been conducted at the Dickinson Experiment Station, with the exception of fall plowing which was unusually good in comparison with previous years. This years trial again pointed up the need for, and the value of, proper tillage and crop rotation in western North Dakota in a dry year. The value of corn as a silage crop was demonstrated again, with 22 of the 23 corn plots averaging between two and one half and three tons of good quality feed per acre.

---

**Back to 1952 Research Reports Table of Contents**
**Back to Research Reports**
**Back to Dickinson Research Extension Center** (http://www.ag.ndsu.nodak.edu/dickinso/)
**Email:** drec@ndsuext.nodak.edu

---