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South Dakota State University Agricultural Experiment Station

6-1-1940

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BULLETIN 344 JUNE, 1940

# Depth of Plowing and Crop Yields


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AGRICULTURAL EXPERIMENT STATION
South Dakota State College
BROOKINGS, S. D.

## *Summary*

1. Subsoiling does not result in an increase in crop yields. Such a result is in accord with experimental results reported by other stations.

2. Increases in total weight of corn were found to occur directly with increased depth of plowing to the maximum of 12 inches. Corn was the only crop where total weight increased significantly with increased depths of plowing.

3. The yield of corn in bushels per acre increased directly with depth of plowing up to 12 inches.

4. The yields of grain from winter wheat following corn in the rotation, and from oats following wheat, increased with substantial regularity with depth of plowing in preparation for corn. The seeming exception occurred with the plot prepared with no differential plowing—only disking and harrowing. The highest total yields of cereal grain were produced from plots with the deepest plowing.

5. The relationship between the total weight of legume seed and hay or seed alone and depth of plowing could not be definitely established.

# *Contents*

# Depth of Plowing
and
# Crop Yields

A. N. Hume, Agronomist

## Introduction

Plowing has been a means of seed bed preparation in field practice for centuries. In primitive times there was evidently not much thought given to depth of plowing and its relation to crop yields. Discussions relative to what depth of plowing would give optimum crop returns came in comparatively recent years following the invention of the mold-board plow and other tillage implements.

The purpose of the present bulletin is to state in terms of crop yields the comparative results from eight different depths and kinds of plowing carried on in the Agronomy plots of the South Dakota Agricultural Experiment Station at Brookings, South Dakota, and to determine the proper depth of plowing in regions of similar soil and climatic conditions.

## Previous Investigations

Experiments that contribute information about the effect of depth and manner of plowing have been carried out under a wide range of conditions in the United States and other countries. These researches are classified according to:

1. Those having to do with the turning over and stirring of the surface soil, as with a mold-board plow or disk tiller. This may include surface preparation without plowing.

2. Those having to do with turning or stirring the surface layer to varying depths and then breaking up the subsoil with a subsoiler or dynamite.

### Mold-Board or Disk Tiller Plowing

On the basis of experiments in the Great Plains area, Sewell and Call[8] stated; "Plowing is necessary for other reasons than controlling weed growth," and that "plowing 7 inches in July produced larger yields than plowing 3

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The experiment with plowing at several depths was inaugurated by A. N. Hume, agronomist, and J. G. Hutton, associate agronomist. Professor Hutton was responsible for details of the experiment until his death in September 1939. He completed the tables of yields which constitute the appendix of this bulletin. The statements and interpretations are made by the author. Analyses of variance were made by Dr. S. P. Swenson, associate agronomist, and Ralph Arms, assistant in agronomy.

inches at the same time." In Oklahoma investigations showed that yields of wheat in a single year from land plowed deeper than 3 inches up to a maximum of 8 inches were all progressively greater with the exception of the 5 inch depth, than the yield from shallow plowing[6]. Rainfall was ample for optimum conditions of growth.

Matthews[3] of the Dominion Experimental Station at Scott, Saskatchewan, reported that plots plowed at depths of 3, 4, 5, 6, 7 and 8 inches for summer fallow over a period of 17 years produced no noticeable differences in yield. Bell[1] of Montana found that "6- to 8-inch plowing for fallow gave better average results for such crops as barley, oats, spring wheat and winter wheat than shallow plowing at a depth of 3 or 4 inches."

Morgan[7], who conducted experiments from 1917-23 inclusive at the Assiniboine Field Station in north central Montana, with plowing for fallow at depths of 4 and 8 inches and with subsoiling below the 8-inch depth, reported "the yield of oats was generally increased by increasing the depth of plowing." The average increase in oats for 8-inch over 4-inch plowing was five bushels per acre. The increase in barley for plowing for fallow 8 inches over 4 inches of 3.2 bu. per acre was less consistent than for oats.

Chilcott and Cole[2], in a comprehensive paper gave results from the Akron (Colo.) Field Station on yields of wheat and corn from land ordinarily plowed 7 inches deep and from land deep tilled with a special disk machine to a depth of 18 inches. They concluded that "deep tilling has no efficacy in overcoming drought or in increasing yields." This comparison, however, relates only to ordinary 7-inch plowing with 18-inch deep tilling and does not include intermediate depths of plowing nor more shallow plowing.

An early experiment reported by Mills[5] of the Utah Experiment Station for the three years, 1890-92, showed that land not plowed (sage brush removed, grain planted in furrows made by hoe or a stick) produced 8.6 bushels of wheat per acre as compared to 14.1 bushels from land plowed 4 inches, 13.3 from land plowed 6 inches, 14.7 from land plowed 8 inches, and 14.4 from land plowed 10 inches. In this same experiment the corresponding yields of straw were 1013, 1101, 1113, 1117, and 1317 pounds per acre, respectively.

Later experiments by Merrill[4] at Utah, published in 1910, point out the general practice on dryland farms of turning the soil to a depth of 8 to 10 inches. Experiments were conducted on four different farms over a five-year period. On one farm where the soil was heavy clay the 8-inch and 10-inch depths gave better yields than deeper plowing. On the three farms with the land plowed at depths of 8, 10 and 15 inches, there were corresponding increases in yields with increased depths of plowing. Merrill further concluded that "on deep heavy soil, plowing to a depth of 10 inches will insure as good and possibly better results than plowing to a greater depth but that on lighter soils an occasional plowing to a depth of 15 to 18 inches is advisable."

Sewell[9] in his summary of tillage literature quoted an experiment by Farrar and Sutton in New South Wales in which comparisons of wheat yields were recorded. Plowing was carried on with (a) disk plow and (b) with a mold-board plow at depths of 4, 6 and 8 inches, with and without fertilizer; "The mold-board plow gave the highest yields in all cases." The average of all yields as reported from the successive depths of plowing in bushels per acre were 11.8, 12.2, 13.2, indicating that increased yields resulted from deeper plowing.

### Subsoiling or Dynamiting

Matthews[3] reported on work conducted for 17 successive seasons at Scott, Saskatchewan. These tests showed that 4-inch plowing without subsoiling gave greater yields of grain than 5-, 6-, 7- and 8-inch plowing with subsoiling.

In Northern Montana Bell[1] and Morgan[7] showed that subsoiling with a chisel to an additional depth of 10 inches below the six- to eight-inch furrow chisel to an additional depth of 10 inches below the 6- to 8-inch furrow slice did not consistently improve the production of small grain following fallow.

Chilcott and Cole[2] confirmed the findings of Matthews, reporting the results of experiments with subsoiling from 12 stations in the Great Plains. These included Judith Basin Field Station (Moccasin, Mont.), Belle Fourche, S. D.; Akron, Colo.; Hayes, Kans.; Garden City, Kans.; Amarillo, Tex.; and Tecumcari, N. M. There were 353 trials, in 15 of which there was no difference, in 153 the higher yields were obtained from the subsoiled plot and in 185 the higher yields were obtained from the plot not subsoiled. They concluded that "on the average, subsoiling instead of overcoming the effects of drought, actually intensifies them."

Chilcott and Cole also reported the results of deep tilling with the use of dynamite and special plows (deep tilling machines). Where dynamite was placed as deep as 30 inches in experiments at Akron, Colo., Ardmore, S. D., Belle Fourche, S. D., and Judith Basin, Mont., it was concluded that such a method was not of any value in overcoming drought.

## Plan of Field Experiment

The present experiment was conducted continuously on four separate one-acre tracts of land located on the Agronomy Farm of the South Dakota Agricultural Experiment Station.

In each year, one acre was planted to corn, one to winter wheat, one to oats and one to a legume (red clover, white sweet clover or soybeans). A four-year rotation was practiced on each acre, using the above crops in the order mentioned. Such a plan provided that all four crops in the rotation would be grown each year and that each acre would be subjected to the same four-year rotation during the course of the experiment.

Each acre was divided into 10 plots of one-tenth acre each, separated by a 40-inch division strip. The separate plots in each acre were numbered -50 to -59 inclusive. The separate acres were correspondingly numbered as follows: 250-59; 350-59; 450-59; 550-59, the plots extending from south to north in each acre.

The soil treatments on the different one-tenth acre plots within each acre differed in both the kind and depth of plowing as shown in the following outline:

| Number of Plot | Depth and Manner of Plowing |
|---|---|
| –50 | 7″ deep with mold-board plow |
| –51 | 4″ deep with mold-board plow |
| –52 | 6″ deep with mold-board plow<br>Additional 6″ with subsoiler |
| –53 | 6″ deep with a mold-board plow.<br>Additional 8″ with subsoiler |
| –54 | 7″ deep with mold-board plow |
| –55 | 7″ deep (1913-16). 2″ –3″ deep with mold-board plow (1917-20). Later unplowed, prepared by disking |
| –56 | 8″ deep with mold-board plow |
| –57 | 10″ deep, turned with deep tiller |
| –58 | 12″ deep, turned with deep tiller |
| –59 | 7″ deep with mold-board plow |

Plots 50, 54 and 59 were plowed to uniform depth of seven inches. One of the three was located at each of the extreme ends of the series and the third about midway between. Thus the three plots serve as check plots and the depth of plowing compares to that of good farm practice. Plot 51 was plowed with an ordinary mold-board plow to a depth of four inches. Plots 52 and 53 were turned with an ordinary mold-board plow to a depth of six inches; these two, however, were stirred at the same time below the plow furrow with a sub-soiler, the former to a depth of six inches and the latter to a depth of eight inches.

Three other separate plots 56, 57 and 58 were plowed by turning the soil to varying depths of 8, 10 and 12 inches in the order named. The latter two, however, were turned with a deep-tiller disk. The one remaining plot (55) was plowed seven inches deep in the years 1913-1916. In those years the small grain was cultivated with a weeder. In the years 1917-1920 this plot was plowed only two to three inches deep and after 1920 it was prepared by disking without plowing.

The different treatments were applied simultaneously previous to corn, usually in October. In addition to the differential treatments, the wheat stubble in the rotation was plowed in October to a uniform depth of five inches over the entire acre.

The treatments therefore represented not only varying depths of plowing but also included four kinds of seed bed preparation:

1. Disking with no plowing.
2. Turning the soil at three different depths, varying from four to eight inches with a mold-board plow.
3. Turning the soil at two still greater depths, 10 and 12 inches, with a deep-tiller disk.
4. Turning the soil to an intermediate depth of six inches but loosening below the depth of plowing with a subsoiler.

**Corn.** The first crop in the four-year rotation of this experiment was corn, which was produced on one acre every year by planting each of the one-tenth acre plots. This land had been occupied by the legume crop in the previous year of the rotation. The legume crop was cut once for hay and again for seed. Only the roots of the legumes remained in the soil at the time of plowing in preparation for corn.

The same amount of stall manure was applied to all plots in the acre previous to differential plowing in the fall. The entire acre was then uniformly double-disked and double-harrowed immediately before planting in the spring.

**Winter Wheat.** Winter wheat in this experiment always followed corn in the four-year rotation. The seeding of the winter wheat was done with a one-horse drill between the corn rows.

**Oats.** Oats, the third crop in the rotation, was seeded following the winter wheat stubble which was fall plowed uniformly five inches deep. Inasmuch as the differential plowing in this experiment was performed in preparation for corn, the effect, if any, of such plowing on oats as the third crop in the rotation may have been modified by the preceding crops of corn and winter wheat.

**Legumes.** The fourth crop in the rotation consisted of legumes. The original plan of planting red clover was abandoned because of failures. White sweet clover was substituted and when this failed soybeans were planted. The regular plan was intended to involve the seeding of clover seed with the oats as a nurse crop in the spring. No additional preparation was made on account of seeding the clover. The seed was applied uniformly on all plots of the series. The only differential treatment for the legumes was that which has been explained with regard to differential plowing in preparation for corn.

## Experimental Results

Complete data on the total seed and plant yields of the four kinds of crops included in this experiment are shown in tables I to V in the Appendix. The yields cover the period 1913-1937, inclusive. In certain instances yields were not recorded and some spaces in the tables are blank. Such missing data indicate crop failures or (as in the case of corn for 1922) failure to retain weights of a crop or part thereof. In the discussion which follows, summaries of the data in the Appendix tables will be used.

### Total Seed and Plant Yields

In Table 1 are listed the average total weights of each crop, i. e. total pounds of ear corn plus fodder, pounds either of winter wheat or oats plus straw and total pounds of legume hay plus seed plus straw.

**Table 1. Average annual yields in total pounds per acre of corn, winter wheat, oats and legumes grown on plots receiving different tillage treatments.**

| Treatment | Average yield in pounds per acre | | | |
|---|---|---|---|---|
| | Corn | Winter Wheat | Oats | Legumes |
| Plow 7″ | **4396** | **3779** | **3415** | **3901** |
| Plow 4″ | 4474 | 3786 | 3411 | 3817 |
| Plow 6″, Subsoil 6″ | 4487 | 3716 | 3542 | 3923 |
| Plow 6″, Subsoil 10″ | 4487 | 3949 | 2516 | 4010 |
| Plow 7″ | **4415** | **3765** | **3521** | **3981** |
| Double disk, double harrow | 4234 | 3817 | 3525 | 4159 |
| Plow 8″ | 4632 | 3866 | 3584 | 4224 |
| Disk plow 10″ | 4700 | 3828 | 3594 | 4491 |
| Disk plow 12″ | 4737 | 3947 | 3560 | 4473 |
| Plow 7″ | **4386** | **3838** | **3583** | **4614** |

A test for statistical significance was applied to the data on each crop. Highly significant differences occurred between treatments for corn and legumes but the differences in winter wheat and oats were not significant. The differences in yields of corn from the three check plots were very similar and not statistically significant, indicating that there was no marked place effect among the plots. The average yield of the three check plots therefore was used for comparison with the other treatments. The plots plowed 8, 10 and 12 inches deep yielded significantly higher than the average of the 7-inch check plots while the plot not plowed yielded significantly lower.

Legume yields indicate that the differences between treatments were largely the result of a significant place effect among the different plots. The three check plots differed significantly in yield so no attempt was made to compare the individual treatments with the checks.

**Corn.** The average weights of corn plants in pounds of grain plus stalks harvested from plots with differential plowing are shown graphically in Figure 1.

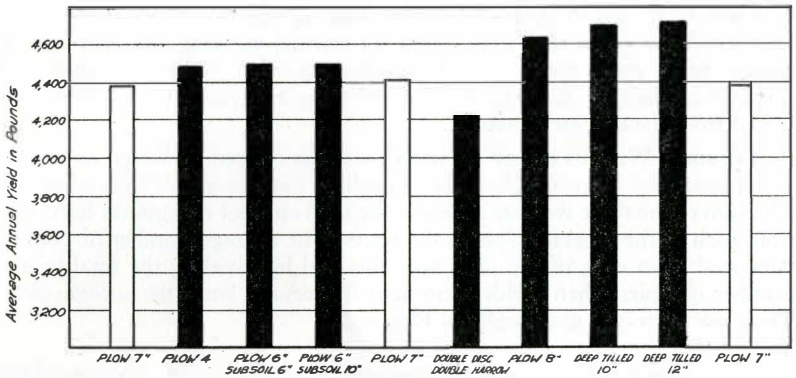


**Fig. 1. Average annual yields in pounds of corn, grain and fodder, per acre from different soil treatments.**

It will be observed that the weights of corn plants produced from the three 7-inch check plots were nearly equal, showing that there was no advantage of position for any one of the three over the other and therefore possibly not for any one of the plots in the series of 10 over any other plot, so far as total weights of corn plants are concerned. Therefore, the differences in total yield of corn, grain and fodder, appear to be due to the depth or manner of differential tillage.

The plot prepared without plowing yielded lowest of all. The first five plots in the series vary from one another only within the limit of error. In these results there is no decisive difference in weight of corn plants produced from plowing at a depth of four inches or seven inches. Moreover there is no significant difference in the number of pounds of corn produced between plowing at either of these depths and plowing to a depth of six inches and subsoiling to additional depths of six or eight inches. Figure 1 indicates that subsoiling will not increase crop yields.

The last four bars in Figure 1 show that turning the soil to the depth of 8, 10 and 12 inches resulted in progressive increases in total weight of corn crops harvested. These increases are all significant as compared with the check plots. The increased yields where deep plowing occurred are in contrast to the lack of significant increases on the two plots where subsoiling was utilized at similar depths. The increases thus were associated with a process of not only stirring the soil deeply but of stirring it in such a way as to place some of the surface layer of soil at a considerable depth.

**Winter Wheat.** The average weight per plot of wheat plants harvested (grain plus straw) vary considerably from one another, but the variations are not statistically significant. However, as will be shown later, the weights of grain alone were significantly different, and with only one exception increased depths of plowing resulted in increased yields.

**Oats.** With oats as with wheat there was no significant difference in the total yields of grain plus straw from differential plowing. As will also be shown later, grain yields varied significantly with different depths and methods of plowing, the largest yields, with one exception, having been harvested from the deepest plowing.

**Legumes.** Weights of hay harvested, weights of seed harvested and number of pounds of straw weighed after threshing the clover seed were recorded. The sum of the three weights indicates the total amount of legumes harvested from each of the separate plots in the series. The average number of pounds harvested from each of the plots was obtained by dividing the total by the number of years when yields were actually secured from the several plots. These are portrayed graphically in Figure 2.

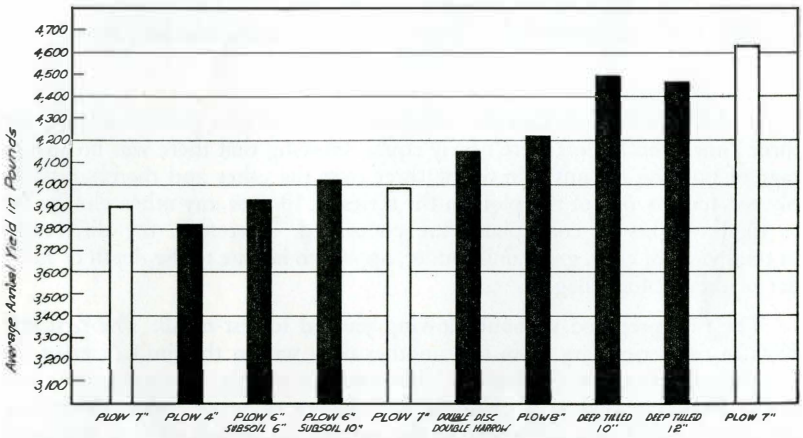


**Fig. 2. Average annual yields in pounds of legumes, hay plus seed plus straw, per acre from different soil treatments.**

As pointed out previously, highly significant differences between the three check plots indicate decided place effects so that although the differences in yield were found to be statistically significant, this experiment establishes no direct relationship between the average weight of legumes (hay plus straw plus seed) harvested and the depth or manner of differential plowing before corn at the beginning of the crop rotation. Differences in yields of legume seed are later found to be significant but like the total weight of seed and hay, they cannot be definitely attributed to differential soil treatments.

## Seed Yields

The results reported previously have given attention to the total weights of the several crop plants harvested which included both grain and roughage. When grain yields alone are considered, the yield of corn, winter wheat and oats varied directly with the depth of plowing, the greatest depths giving the largest yields. These differences are statistically significant for all of the crops.

**Table 2. Average yield in bushels per acre of corn, winter wheat, oats and legumes from plots receiving differential plowing treatments.**

| Treatment | Corn | Winter Wheat | Oats | Legume |
|---|---|---|---|---|
| Plow 7″ | **35.8** | **18.5** | **44.4** | **2.7** |
| Plow 4″ | 36.4 | 19.4 | 45.8 | 2.7 |
| Plow 6″ Subsoil 6″ | 36.4 | 19.8 | 46.6 | 3.0 |
| Plow 6″ Subsoil 10″ | 36.0 | 20.2 | 47.9 | 2.9 |
| Plow 7″ | **36.2** | **19.9** | **48.3** | **2.9** |
| Double disk, double harrow | 34.8 | 20.5 | 49.6 | 2.9 |
| Plow 8″ | 38.4 | 20.5 | 48.7 | 2.9 |
| Disk plow 10″ | 38.8 | 20.8 | 48.9 | 3.4 |
| Disk plow 12″ | 39.7 | 21.0 | 48.4 | 3.6 |
| Plow 7″ | **36.0** | **20.3** | **48.1** | **3.7** |

Average yields of grain and seed in bushels per acre for the several crops in this experiment are summarized from Tables I, II, III and V of the Appendix and tabulated in Table 2.

A separate computation made on the yields of grain or seed from the check plots of the several crops also established the fact that the variations in grain yield from those particular plots were not significant, except in the case of the legumes.

On the basis of these facts it is assumed that the yields of grain from corn, winter wheat and oats varied from one another due to differential plowing even though it is sometimes difficult to correlate such variation with exact depth of plowing in certain specific instances.

**Corn.** The average yields of corn in bushels are presented graphically in Figure 3. The yields are rearranged in the order of depth of plowing from left to right in position on the graph. The two treatments involving 6-inch plowing plus subsoiling have been averaged and portrayed by the third bar from the left, and the three 7-inch checks have been averaged and described by the open bar in the middle.

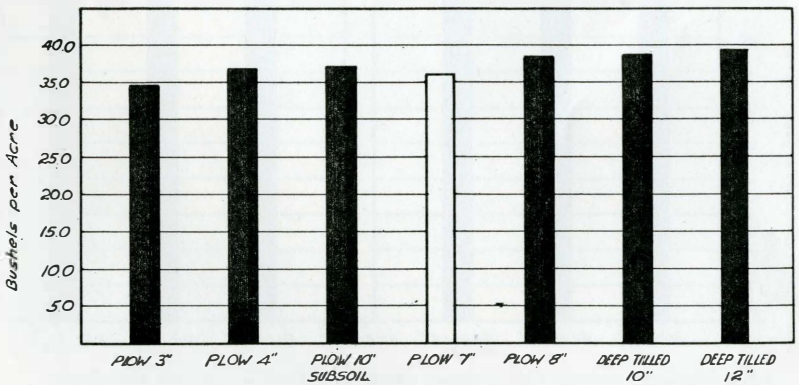


**Fig. 3. Average annual yields of corn in bushels per acre from different soil treatments.**

Yields of corn in bushels of grain increased with substantial regularity with depth of plowing. The lowest average yields of corn came from the plots prepared only by double-disking and double-harrowing without plowing. The yields from plowing four and six inches (subsoiled) are next highest. If it is assumed that subsoiling had no effect upon the yields of crops in this experiment, then Figure 3 indicates that plowing six inches produced the same measurable return as plowing four inches. Moreover plowing seven inches as measured by the yield from the middle check plot was essentially the same as the yield from plowing either four or six inches. Yields increased with 8-inch plowing over the shallower depths and again with 10-inch and 12-inch plowing. Twelve-inch plowing produced the maximum yield in bushels of corn.

Calculation of the yields indicates that plowing ordinary depths—four to seven inches—produced approximately 1.4 bushels per acre more corn than preparing a seed bed by disking and harrowing without plowing. The increased depth of plowing, up to 12 inches, produced from 3.6 to 4.9 bushels more than preparation without plowing. Expressed in percentages these increases would vary from 10.3 to 14.1 percent. The yield in bushels of corn was 9.1 percent higher from plowing 12 inches than from plowing 4 inches.

**Winter Wheat.** The average yields of winter wheat in bushels per acre are arranged graphically in Figure 4. The differences between average yields of all plots were statistically significant, while the variations in yield among the check plots were not statistically significant. The differences between yields evidently were due in some degree to differential plowing—Figure 4 shows that the yields of winter wheat do not vary absolutely in accord with differential plowing. The outstanding exception is that of the yield from the plots seeded without plowing and prepared only by disking

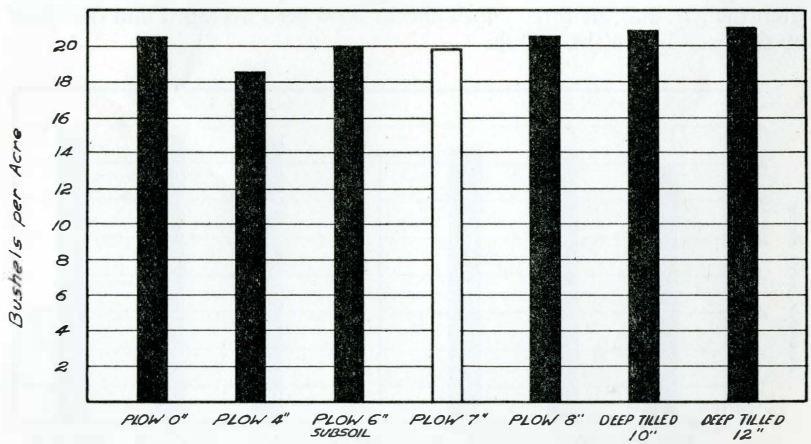


**Fig. 4. Average annual yields of winter wheat in bushels per acre from different soil treatments.**

and harrowing. No explanation is attempted at present. It probably indicates that effect of plowing may include factors other than the mechanical one of depth. However, the yields of winter wheat from all of the plots plowed at different depths (omitting the one unplowed) varied directly with the depth of plowing.

**Oats.** Graphic representation of the yields in bushels per acre of oats is not included here but the yields varied significantly throughout the series. Yields from the check plots did not vary significantly. The highest yield of oats came from the plots not plowed for corn. It will be recalled that all plots were plowed uniformly five inches in depth in preparation for oats. With this one exception the yields increase with increased depth of plowing from 4 to 10 inches. The slightly lower yield from 12-inch plowing (with a deep disk tiller) is hardly an exception.

**Legume—(seed).** The yields of legume seed were averages made from red clover (8 years), sweet clover (11 years) and soybeans (1 year). Variations in yields of seed are significant throughout the series. They are also significant between the check plots plowed seven inches, indicating that there was a significant place effect. For this reason there is no proof that the yields of legume seed varied with the depth of plowing one way or another.

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## *Conclusions*

The results of plowing at differential depths prior to planting corn in a four-year rotation of corn, winter wheat, oats and legumes over a period of 24 years are presented.

The total yield of corn, including grain and roughage, was the only one to vary significantly with different depths of plowing. The largest yields were obtained where the plowing was deepest.

Yields of grain, including corn, winter wheat and oats, increased in general with an increased depth of plowing.

Although the yields of legumes, both total and seed yields, varied significantly among treatments, it was impossible to establish a significant relationship between yields and tillage treatments because of significant place effects indicated by the yields of the check plots.

## Appendix Table I. Yields of Corn in Bushels (70 lbs.) and Pounds of Stalks Per Acre From Plots Plowed Differentially

| Tillage / Plot No. / Yield | | Plow 7" –50 | | Plow 4" –51 | | P.6", S.S.6" –52 | | P. 6", S.S.10" –53 | | Plow 7" –54 | | See Pg. 8 –55 | | Plow 8" –56 | | Dp. T. 10" –57 | | Dp. T. 12" –58 | | Plow 7" –59 | | Average 7" Plowing | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grain | Stalks | Grain | Stalks | Grain | Stalks | Grain | Stalks | Grain | Stalks | Grain | Stalks | Grain | Stalks | Grain | Stalks | Grain | Stalks | Grain | Stalks | Grain | Stalks |
| Year | Acre | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. |
| 1913 | 550-9. | 48.00 | 2000 | 51.28 | 2050 | 49.57 | 1850 | 52.43 | 2250 | 50.00 | 1900 | 49.28 | 2000 | 50.43 | 2050 | 56.85 | 1950 | 56.85 | 1850 | 49.85 | 1850 | 49.28 | 1917 |
| 1914 | 450-9. | 51.64 | 1600 | 54.71 | 1350 | 52.43 | 1400 | 53.43 | 1400 | 53.93 | 1400 | 56.07 | 1450 | 53.85 | 1230 | 53.71 | 1450 | 54.57 | 1470 | 55.07 | 1450 | 53.55 | 1483 |
| 1915 | 350-9. | 22.06 | 2000 | 21.10 | 2070 | 21.26 | 2050 | 19.46 | 1750 | 20.86 | 1750 | 27.40 | 1800 | 21.16 | 1500 | 21.76 | 1770 | 20.00 | 1800 | 18.90 | 1600 | 20.61 | 1783 |
| 1916 | 250-9. | 48.44 | 2600 | 52.38 | 2450 | 54.28 | 2350 | 54.41 | 2100 | 56.18 | 2520 | 50.76 | 3450 | 53.74 | 2350 | 51.03 | 2270 | 52.11 | 2130 | 49.27 | 2200 | 51.30 | 2440 |
| 1917 | 550-9. | 36.60 | 1950 | 35.16 | 2000 | 41.88 | 2250 | 34.31 | 2300 | 36.71 | 2250 | 32.76 | 2450 | 39.60 | 2450 | 48.35 | 2800 | 51.11 | 2900 | 49.20 | 2600 | 40.84 | 2267 |
| 1918 | 450-9. | 60.83 | 2100 | 61.43 | 2200 | 61.21 | 2100 | 58.48 | 2200 | 58.40 | 2150 | 56.24 | 2100 | 62.00 | 2200 | 58.93 | 2400 | 60.17 | 2100 | 57.85 | 1500 | 59.03 | 1917 |
| 1919 | 350-9. | 33.86 | 1650 | 34.28 | 2350 | 20.71 | 1550 | 18.28 | 2200 | 19.28 | 1750 | 21.43 | 1100 | 18.57 | 1450 | 18.57 | 1500 | 19.28 | 1550 | 17.86 | 1650 | 23.67 | 1683 |
| 1920 | 250-9. | 80.28 | 3300 | 75.57 | 3250 | 66.43 | 2850 | 52.71 | 1950 | 70.00 | 3100 | 78.28 | 3200 | 77.14 | 2950 | 70.71 | 2800 | 66.71 | 2350 | 50.14 | 2250 | 66.81 | 2883 |
| 1921 | 550-9. | 57.85 | 1500 | 66.00 | 1750 | 65.85 | 1700 | 67.14 | 2000 | 69.57 | 1700 | 60.86 | 1300 | 72.57 | 1500 | 71.57 | 2000 | 77.00 | 1800 | 72.00 | 1950 | 66.47 | 1717 |
| 1922 | 450-9. | 24.28 | 1700 | 23.86 | 1670 | 24.28 | 1700 | 19.86 | 1390 | 21.28 | 1490 | 20.86 | 1460 | 29.43 | 2060 | 34.00 | 2380 | 36.71 | 2570 | 30.57 | 2140 | 25.38 | 1777 |
| 1923 | 350-9. | 57.71 | 2600 | 54.85 | 2650 | 58.57 | 2500 | 58.43 | 2600 | 61.85 | 2800 | 50.14 | 2350 | 61.43 | 2750 | 59.43 | 2600 | 60.28 | 2350 | 60.57 | 2600 | 60.04 | 2667 |
| 1924 | 250-9. | 43.00 | 1800 | 48.57 | 1900 | 48.43 | 1950 | 49.28 | 2200 | 45.00 | 2000 | 38.71 | 1850 | 46.43 | 2100 | 44.28 | 2050 | 45.00 | 2200 | 37.43 | 1950 | 41.81 | 1917 |
| 1925 | 550-9. | 19.14 | 750 | 23.57 | 1000 | 26.28 | 1150 | 27.57 | 1200 | 24.86 | 700 | 10.71 | 500 | 17.28 | 800 | 15.57 | 700 | 23.28 | 1050 | 10.71 | 450 | 18.24 | 633 |
| 1926 | 450-9. | 48.54 | 1300 | 49.00 | 1150 | 45.64 | 1400 | 50.58 | 1450 | 49.08 | 1250 | 53.45 | 400 | 51.11 | 1350 | 55.58 | 1400 | 55.90 | 1450 | 58.65 | 1550 | 52.09 | 1367 |
| 1927 | 350-9. | 51.43 | 2750 | 54.85 | 2800 | 53.71 | 2900 | 51.57 | 2750 | 47.00 | 2550 | 47.00 | 2500 | 52.71 | 2700 | 47.71 | 2650 | 47.00 | 2550 | 38.71 | 2500 | 45.71 | 2600 |
| 1928 | 250-9. | 38.50 | 1600 | 40.14 | 1200 | 40.86 | 1450 | 41.57 | 1400 | 40.14 | 1220 | 42.28 | 1600 | 40.14 | 1300 | 38.86 | 1420 | 39.71 | 1850 | 37.14 | 1200 | 38.59 | 1340 |
| 1929 | 550-9. | 52.37 | 1670 | 47.61 | 1530 | 53.16 | 1500 | 53.16 | 1440 | 51.58 | 1500 | 53.16 | 1830 | 60.30 | 1940 | 63.48 | 1830 | 63.48 | 1560 | 59.51 | 1500 | 54.49 | 1557 |
| 1930 | 450-9. | 13.57 | 2950 | 11.14 | 2640 | 12.14 | 2870 | 13.43 | 2980 | 17.57 | 2850 | 16.00 | 2940 | 17.86 | 2950 | 15.43 | 3260 | 16.43 | 3100 | 15.43 | 2860 | 15.52 | 2887 |
| 1931 | 350-9. | 9.57 | 1510 | 6.86 | 1660 | 6.86 | 1720 | 6.57 | 1740 | 6.00 | 1680 | 2.57 | 980 | 9.43 | 1880 | 10.29 | 1840 | 10.29 | 1600 | 7.57 | 1970 | 7.71 | 1720 |
| 1932 | 250-9. | 33.57 | 1170 | 30.71 | 1400 | 37.86 | 1500 | 39.28 | 1300 | 33.57 | 1420 | 27.43 | 1700 | 35.71 | 1720 | 39.28 | 1670 | 40.71 | 1850 | 31.43 | 2000 | 32.86 | 1530 |
| 1933 | 550-9. | 0.63 | 390 | 0.48 | 220 | 0.95 | 370 | 1.11 | 470 | 0.63 | 440 | 0.95 | 510 | 1.75 | 520 | 2.94 | 660 | 5.24 | 880 | 4.13 | 820 | 1.80 | 550 |
| 1934 | 450-9. | 9.29 | 1350 | 11.43 | 1050 | 13.43 | 960 | 14.86 | 1160 | 14.29 | 1000 | 9.71 | 720 | 14.57 | 1080 | 17.71 | 1260 | 18.00 | 1440 | 16.00 | 1080 | 13.19 | 1143 |
| 1935 | 350-9. | 26.31 | 3558 | 23.20 | 3776 | 28.00 | 3790 | 29.91 | 3456 | 29.29 | 3150 | 27.76 | 2887 | 28.67 | 3363 | 28.00 | 3370 | 27.11 | 3232 | 28.31 | 3518 | 27.97 | 3409 |
| 1936 | 250-9. | 0.50 | 500 | 1.93 | 800 | 3.57 | 1450 | 9.71 | 2100 | 1.14 | 1000 | 1.71 | 1200 | 3.64 | 1550 | 1.93 | 1300 | 2.00 | 1400 | 1.07 | 1100 | 0.90 | 867 |
| 1937 | 550-9. | 27.32 | 1938 | 30.18 | 1875 | 23.48 | 1694 | 23.30 | 1625 | 27.14 | 2000 | 35.09 | 1313 | 40.89 | 2313 | 44.37 | 2313 | 43.57 | 2313 | 42.50 | 2250 | 32.32 | 2063 |
| Total lbs. per Acre | | 62670 | | 63720 | | 63759 | | 63059 | | 63374 | | 60943 | | 67229 | | 67924 | | 69476 | | 62991 | | | |
| 25 and 24 years | | | 44536 | | 45121 | | 45304 | | 46021 | | 44080 | | 42130 | | 45996 | | 47263 | | 46775 | | 44398 | | |
| Total grain plus stalks | | 107206 | | 108841 | | 109063 | | 109080 | | 107454 | | 103073 | | 113225 | | 115187 | | 116251 | | 107389 | | | |
| **Average 25 & 24 Yrs.** | | **35.81** | **1856** | **36.41** | **1880** | **36.43** | **1888** | **36.03** | **1918** | **36.21** | **1837** | **34.82** | **1755** | **38.42** | **1917** | **38.81** | **1969** | **39.70** | **1949** | **35.99** | **1850** | **36.01** | **1848** |
| **Increase over "Av.P.7"** | | | | **0.40** | **32** | **0.42** | **40** | **0.02** | **70** | | | **–1.19** | **–93** | **2.41** | **69** | **2.80** | **121** | **3.69** | **101** | | | | |
| **Increase percent** | | | | **1.11** | **1.73** | **1.17** | **2.16** | **0.06** | **3.79** | | | **–3.30** | **–5.03** | **6.69** | **3.73** | **7.78** | **6.55** | **10.25** | **5.47** | | | | |

## Appendix Table II. Yields of Winter Wheat in Bushels (60 pounds) and Pounds of Straw Per Acre From Plots Plowed Differentially Before Corn

| Tillage | | Plow 7" | | Plow 4" | | P.6", S.S.6" | | P. 6", S.S.10" | | Plow 7" | | See Pg. 8 | | Plow 8" | | Dp. T. 10" | | Dp. T. 12" | | Plow 7" | | Average | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Plot No. | | -50 | | -51 | | -52 | | -53 | | -54 | | -55 | | -56 | | -57 | | -58 | | -59 | | 7" Plowing | |
| Yield | | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw |
| Year | Acre | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. |
| 1914 | 550-9. | 7.67 | 2650 | 7.50 | 2410 | 7.50 | 2230 | 7.00 | 2290 | 7.33 | 2260 | 7.08 | 2075 | 7.00 | 2140 | 6.83 | 2580 | 6.83 | 2420 | 7.17 | 2710 | 7.39 | 2540 |
| 1915 | 450-9. | 35.50 | 2620 | 38.67 | 3190 | 38.33 | 2980 | 38.67 | 2960 | 40.83 | 3070 | 39.83 | 3060 | 37.83 | 3160 | 37.17 | 3040 | 38.00 | 3020 | 36.83 | 2970 | 37.72 | 2887 |
| 1916 | 350-9. | 37.66 | 4340 | 38.33 | 4350 | 37.17 | 3990 | 37.83 | 4300 | 37.66 | 4680 | 34.33 | 4780 | 39.50 | 4910 | 37.83 | 4330 | 35.83 | 4550 | 37.83 | 4680 | 37.72 | 4567 |
| 1917 | 250-9. | (Winter wheat failed and Shelley Millet was substituted. | | | | | | | | | | | | | | | | | | | | | |
| 1918 | 550-9. | 13.50 | 1190 | 13.33 | 1150 | 16.50 | 1890 | 16.00 | 1270 | 17.50 | 1450 | 15.50 | 1220 | 21.83 | 1640 | 27.67 | 1920 | 31.00 | 2240 | 29.83 | 2160 | 20.28 | 1600 |
| 1919 | 450-9. | 11.33 | 2220 | 11.83 | 2190 | 11.00 | 2160 | 11.67 | 2300 | 11.00 | 2410 | 10.83 | 2430 | 10.33 | 2180 | 9.67 | 2220 | 10.00 | 2350 | 7.00 | 1730 | 9.78 | 2120 |
| 1920 | 350-9. | 11.50 | 2660 | 8.83 | 1900 | 7.67 | 1860 | 8.83 | 1750 | 9.83 | 1960 | 9.50 | 2020 | 7.50 | 1630 | 9.17 | 1750 | 10.17 | 1990 | 8.17 | 2060 | 9.83 | 2227 |
| 1921 | 250-9. | 16.67 | 2240 | 15.67 | 2180 | 16.83 | 2250 | 21.67 | 3300 | 19.33 | 2390 | 19.00 | 2630 | 18.50 | 2410 | 16.67 | 2270 | 16.17 | 2110 | 14.83 | 1830 | 16.94 | 2153 |
| 1922 | 550-9. | 27.83 | 2350 | 32.33 | 2580 | 31.67 | 2350 | 31.17 | 2260 | 32.17 | 2220 | 33.83 | 2440 | 33.00 | 2160 | 34.17 | 2360 | 34.33 | 2680 | 36.00 | 2840 | 32.00 | 2470 |
| 1923 | 450-9. | 12.33 | 3660 | 14.50 | 3450 | 14.00 | 3260 | 12.00 | 3630 | 11.50 | 3170 | 12.50 | 3100 | 15.17 | 3170 | 14.33 | 3100 | 15.17 | 3140 | 13.17 | 3010 | 12.33 | 3280 |
| 1924 | 350-9. | 51.17 | 4250 | 51.17 | 4240 | 50.00 | 4280 | 53.33 | 4760 | 54.67 | 4920 | 51.67 | 5300 | 52.00 | 4880 | 48.67 | 4580 | 48.00 | 4420 | 44.50 | 4430 | 50.11 | 4533 |
| 1925 | 250-9. | 12.33 | 1560 | 15.67 | 1760 | 15.83 | 1550 | 17.33 | 1760 | 14.00 | 1560 | 13.50 | 1490 | 13.83 | 1570 | 14.17 | 1350 | 15.00 | 1400 | 15.17 | 1890 | 13.83 | 1670 |
| 1926 | 550-9. | 6.83 | 2870 | 6.17 | 2030 | 8.00 | 1940 | 7.83 | 1890 | 5.83 | 910 | 11.33 | 1320 | 9.83 | 1750 | 12.83 | 1330 | 13.67 | 1780 | 13.17 | 1610 | 8.61 | 1797 |
| 1927 | 450-9. | 20.42 | 1895 | 22.50 | 1840 | 32.17 | 1150 | 25.00 | 1850 | 24.50 | 1570 | 25.83 | 1880 | 20.83 | 1680 | 21.83 | 1800 | 23.17 | 2160 | 24.67 | 1800 | 23.20 | 1755 |
| 1928 | 350-9. | 6.33 | 3320 | 8.00 | 2620 | 8.50 | 2690 | 10.50 | 2550 | 11.67 | 2400 | 15.00 | 1500 | 15.00 | 2340 | 14.83 | 2210 | 11.00 | 2540 | 10.67 | 2760 | 9.56 | 2827 |
| 1929 | 250-9. | 29.67 | 2470 | 31.00 | 2990 | 28.83 | 2270 | 28.33 | 2800 | 28.50 | 2690 | 27.67 | 2640 | 25.83 | 2450 | 26.67 | 2150 | 25.67 | 2260 | 25.67 | 2160 | 27.95 | 2440 |
| 1930 | 550-9. | 29.26 | 2570 | 28.89 | 2540 | 28.89 | 2620 | 28.89 | 2620 | 29.07 | 2510 | 31.85 | 2830 | 29.26 | 3010 | 32.59 | 2980 | 33.33 | 2980 | 32.22 | 2920 | 30.18 | 2667 |
| 1931 | 450-9. | 11.33 | 1440 | 10.67 | 1370 | 12.00 | 1430 | 13.67 | 1500 | 13.33 | 1500 | 16.67 | 1740 | 14.33 | 1590 | 17.00 | 1680 | 17.33 | 1720 | 15.33 | 1460 | 13.33 | 1467 |
| 1932 | 350-9. | 33.67 | 3030 | 32.33 | 2510 | 34.17 | 2550 | 35.00 | 2650 | 32.67 | 2740 | 37.33 | 2960 | 36.67 | 2920 | 35.33 | 3060 | 35.67 | 3260 | 36.00 | 3000 | 34.11 | 2923 |
| 1933 | 250-9. | 6.00 | 1040 | 9.67 | 1220 | 8.17 | 1210 | 8.83 | 1570 | 7.67 | 1090 | 7.50 | 1050 | 8.33 | 1060 | 8.67 | 1080 | 9.33 | 1190 | 7.33 | 1010 | 7.00 | 1047 |
| 1934 | 550-9. | Failure due to drought. Wheat dried up. Mowed July 2. Nearly all Russian thistles. | | | | | | | | | | | | | | | | | | | | | |
| 1935 | 450-9. | 41.67 | 4300 | 42.67 | 4600 | 42.33 | 4500 | 43.17 | 4670 | 44.67 | 4560 | 45.00 | 4660 | 43.00 | 4580 | 43.17 | 4670 | 43.83 | 4570 | 43.33 | 4320 | 43.22 | 4393 |
| 1936 | 350-9. | 8.66 | 1480 | 9.17 | 950 | 10.67 | 1360 | 11.50 | 1510 | 10.83 | 1100 | 14.00 | 1210 | 16.67 | 1750 | 15.00 | 1700 | 14.33 | 1790 | 12.67 | 1590 | 10.72 | 1390 |
| 1937 | 250-9. | 13.83 | 2270 | 16.00 | 2440 | 16.08 | 2635 | 17.50 | 3550 | 14.33 | 2940 | 13.17 | 2060 | 16.67 | 2500 | 14.67 | 2120 | 16.67 | 2000 | 14.83 | 2310 | 14.33 | 2507 |
| Total grain (bushels) 24 yrs. | | 445.16 | | 464.90 | | 476.31 | | 485.72 | | 478.89 | | 492.92 | | 492.91 | | 498.94 | | 504.50 | | 486.39 | | 470.14 | |
| Total pounds grain, 24 yrs. | | 26710 | | 27894 | | 28579 | | 29143 | | 28733 | | 29575 | | 29575 | | 29936 | | 30270 | | 29183 | | 28208 | |
| Total pounds straw, 24 yrs. | | | 56425 | | 54510 | | 53155 | | 57740 | | 54100 | | 54395 | | 55480 | | 54280 | | 56570 | | 55250 | | 55260 |
| Total pounds grain & straw | | | 83135 | | 82404 | | 81734 | | 86883 | | 82833 | | 83970 | | 85055 | | 84216 | | 86840 | | 84433 | | 83468 |
| **Average (24)** | | **18.55** | **2351** | **19.37** | **2271** | **19.85** | **2215** | **20.24** | **2406** | **19.95** | **2254** | **20.54** | **2266** | **20.54** | **2312** | **20.79** | **2262** | **21.02** | **2357** | **20.27** | **2302** | **19.59** | **2303** |
| **Increase over "Av.P.7"** | | | | **-0.22** | **-32** | **0.26** | **-88** | **0.65** | **103** | | | **0.95** | **-37** | **0.95** | **9** | **1.20** | **-41** | **1.42** | **54** | | | | |
| **Increase percent** | | | | **-1.12** | **-1.39** | **1.33** | **-3.82** | **3.32** | **4.47** | | | **4.85** | **1.61** | **4.85** | **0.39** | **6.13** | **-1.78** | **7.25** | **2.34** | | | | |

## Appendix Table III. Yields of Oats in Bushels (32 lbs.) and Pounds of Straw Per Acre From Plots Plowed Differentially Before Corn

| Tillage | | Plow 7" | | Plow 4" | | P.6", S.S.6" | | P. 6", S.S.10" | | Plow 7" | | See Pg. 8 | | Plow 8" | | Dp. T. 10" | | Dp. T. 12" | | Plow 7" | | Average | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Plot No. | | −50 | | −51 | | −52 | | −53 | | −54 | | −55 | | −56 | | −57 | | −58 | | −59 | | 7" Plowing | |
| Yield | | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw | Grain | Straw |
| Year | Acre | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. |
| 1915 | 550-9. | 101.88 | 3240 | 97.81 | 2910 | 100.94 | 3240 | 99.38 | 3230 | 102.19 | 3080 | 100.00 | 2940 | 99.06 | 3150 | 95.63 | 3460 | 87.19 | 3120 | 89.06 | 3050 | 97.71 | 3123 |
| 1916 | 450-9. | 63.44 | 1720 | 62.81 | 1690 | 63.75 | 1620 | 59.69 | 1480 | 63.44 | 1670 | 61.88 | 1660 | 57.81 | 1270 | 60.94 | 1620 | 59.69 | 1680 | 64.06 | 1720 | 63.65 | 1703 |
| 1917 | 350-9. | 81.25 | 1830 | 84.06 | 1910 | 82.81 | 1700 | 85.63 | 2020 | 92.19 | 2120 | 97.81 | 2310 | 90.63 | 2050 | 91.88 | 2210 | 88.44 | 2510 | 86.56 | 2460 | 86.67 | 2137 |
| 1918 | 250-9. | 36.88 | 1270 | 53.13 | 1450 | 53.13 | 2150 | 57.19 | 1520 | 50.31 | 1240 | 46.88 | 1240 | 55.00 | 1420 | 49.69 | 1260 | 46.25 | 1250 | 45.94 | 1280 | 44.38 | 1263 |
| 1919 | 550-9. | 47.50 | 1630 | 45.63 | 1580 | 40.63 | 1360 | 39.38 | 1400 | 43.13 | 1180 | 33.75 | 1350 | 40.63 | 1570 | 43.75 | 1410 | 41.88 | 1330 | 42.50 | 1500 | 44.38 | 1437 |
| 1920 | 450-9. | 49.06 | 1600 | 52.50 | 2500 | 52.50 | 2370 | 53.44 | 2140 | 56.88 | 2280 | 56.88 | 2080 | 52.19 | 2070 | 54.06 | 2070 | 48.44 | 1830 | 37.19 | 1700 | 47.71 | 1860 |
| 1921 | 350-9. | 55.94 | 1710 | 52.81 | 1660 | 54.69 | 1630 | 56.25 | 1830 | 58.13 | 2050 | 61.56 | 2160 | 61.56 | 2160 | 61.56 | 2230 | 60.94 | 2170 | 65.00 | 2220 | 59.69 | 1993 |
| 1922 | 250-9. | 43.13 | 1240 | 46.88 | 1240 | 52.81 | 1290 | 64.06 | 1460 | 51.25 | 1230 | 46.56 | 1130 | 44.06 | 1160 | 47.50 | 1180 | 48.13 | 1230 | 43.75 | 1090 | 46.04 | 1187 |
| 1923 | 550-9. | 56.25 | 2410 | 67.19 | 2200 | 65.63 | 2310 | 65.31 | 2360 | 67.81 | 2340 | 72.19 | 2390 | 64.38 | 2170 | 60.31 | 2070 | 55.94 | 2050 | 49.38 | 1220 | 57.81 | 1990 |
| 1924 | 450-9. | 42.81 | 3730 | 45.94 | 4030 | 45.63 | 3640 | 42.19 | 4150 | 48.13 | 3660 | 49.69 | 3810 | 35.94 | 4200 | 31.88 | 4730 | 31.88 | 4580 | 30.63 | 4920 | 40.52 | 4103 |
| 1925 | 350-9. | 39.69 | 3230 | 33.44 | 2830 | 36.25 | 2940 | 37.50 | 3000 | 49.69 | 3430 | 43.44 | 3010 | 40.63 | 3050 | 37.50 | 3300 | 37.50 | 3400 | 43.13 | 3920 | 44.17 | 3527 |
| 1926 | 250-9. | 10.63 | 2380 | 10.00 | 1860 | 8.13 | 1900 | 9.69 | 2330 | 9.38 | 1620 | 8.13 | 1620 | 6.88 | 1880 | 9.38 | 1700 | 7.19 | 1410 | 9.06 | 1710 | 9.69 | 1903 |
| 1927 | 550-9. | 43.05 | 1489 | 46.87 | 1278 | 43.75 | 1389 | 57.77 | 1222 | 44.79 | 1344 | 48.26 | 1389 | 51.39 | 1600 | 48.96 | 1456 | 51.73 | 1544 | 55.55 | 1722 | 47.80 | 1518 |
| 1928 | 450-9. | 28.75 | 2010 | 32.81 | 1800 | 25.00 | 1760 | 26.56 | 1250 | 25.00 | 1700 | 38.12 | 1180 | 45.31 | 2450 | 43.13 | 1420 | 46.88 | 1600 | 50.94 | 1410 | 34.90 | 1707 |
| 1929 | 350-9. | 54.06 | 1320 | 58.44 | 1280 | 63.13 | 2330 | 62.81 | 1290 | 63.44 | 1220 | 66.25 | 1280 | 67.50 | 1090 | 67.50 | 1090 | 68.44 | 1160 | 65.31 | 1510 | 60.94 | 1350 |
| 1930 | 250-9. | 55.00 | 1400 | 56.25 | 1470 | 53.75 | 1430 | 56.88 | 1590 | 55.00 | 1430 | 54.06 | 1300 | 50.00 | 1380 | 54.06 | 1410 | 54.06 | 1440 | 55.00 | 1380 | 55.00 | 1403 |
| 1931 | 550-9. | 15.28 | 1710 | 13.89 | 1610 | 16.67 | 1580 | 19.44 | 1270 | 15.97 | 1670 | 22.22 | 1400 | 25.69 | 1230 | 27.78 | 1220 | 30.56 | 1080 | 30.21 | 1260 | 20.49 | 1547 |
| 1932 | 450-9. | 64.06 | 2170 | 66.25 | 2180 | 68.13 | 2160 | 66.25 | 2180 | 68.44 | 2210 | 71.25 | 2180 | 72.19 | 2230 | 72.19 | 2210 | 74.69 | 2430 | 70.94 | 2290 | 67.81 | 2223 |
| 1933 | 350-9. | 7.50 | 860 | 9.06 | 810 | 10.00 | 880 | 12.19 | 760 | 11.25 | 990 | 11.25 | 940 | 12.81 | 990 | 12.19 | 980 | 11.25 | 970 | 11.88 | 1020 | 10.21 | 957 |
| 1934 | 250-9. | Failure due to drought. Oats dried up. Mowed July 2. Nearly all Russian thistles. | | | | | | | | | | | | | | | | | | | | | |
| 1935 | 550-9. | 62.49 | 2795 | 50.39 | 2288 | 60.16 | 2525 | 55.08 | 2513 | 55.48 | 2175 | 62.11 | 2363 | 57.81 | 2175 | 62.89 | 2388 | 62.50 | 2200 | 57.04 | 2150 | 58.34 | 2373 |
| 1936 | 450-9. | 21.25 | 1420 | 22.81 | 1170 | 22.81 | 1670 | 23.44 | 1500 | 24.69 | 1510 | 28.13 | 1600 | 28.13 | 1600 | 34.06 | 1310 | 40.00 | 1520 | 43.15 | 1920 | 29.70 | 1617 |
| 1937 | 350-9. | 42.19 | 1250 | 43.75 | 1600 | 50.94 | 1770 | 52.19 | 1580 | 54.69 | 1750 | 59.69 | 1740 | 60.31 | 2120 | 56.88 | 2380 | 60.31 | 2170 | 59.06 | 2010 | 51.98 | 1670 |
| Total bushels of grain, 23 yrs. | | 1022.09 | | 1052.72 | | 1071.24 | | 1102.32 | | 1111.28 | | 1140.11 | | 1119.91 | | 1123.72 | | 1113.89 | | 1105.34 | | 1079.59 | |
| Total pounds grain, 23 yrs. | | 32707 | | 33687 | | 34280 | | 35274 | | 35561 | | 36484 | | 35837 | | 35959 | | 35644 | | 35371 | | 34547 | |
| Total pounds straw, 23 yrs. | | | 42414 | | 41346 | | 43644 | | 42075 | | 41899 | | 41072 | | 43015 | | 43104 | | 42674 | | 43462 | | 42591 |
| Total grain plus straw, 23 yrs. | | 75121 | | 75030 | | 77924 | | 77349 | | 77460 | | 77555 | | 78852 | | 79063 | | 78318 | | 78833 | | 77138 | |
| **Average (23)** | | **44.44** | **1844** | **45.77** | **1798** | **46.58** | **1898** | **47.93** | **1829** | **48.32** | **1822** | **49.57** | **1786** | **48.69** | **1870** | **48.86** | **1874** | **48.43** | **1855** | **48.06** | **1890** | **46.94** | **1852** |
| **Increase over "Av.P.7"** | | | | **−1.17** | **−54** | **−0.36** | **46** | **0.99** | **−23** | | | **2.63** | **−66** | **1.75** | **18** | **1.92** | **22** | **1.49** | **3** | | | | |
| **Increase percent** | | | | **−2.49** | **−2.92** | **−0.77** | **2.48** | **2.11** | **−1.24** | | | **5.60** | **−3.56** | **3.73** | **0.97** | **4.09** | **1.19** | **3.17** | **0.16** | | | | |

**Appendix Table IV. Yields of Legume Hay, 1. Red Clover 2. Sweet Clover 3. Soybeans (pounds per acre) From Plots Plowed at Differential Depths, Before Corn**

| Tillage | | Plow 7" | | Plow 4" | | P.6", S.S.6" | | P. 6", S.S.10" | | Plow 7" | | See Pg. 8 | | Plow 8" | | Dp. T. 10" | | Dp. T. 12" | | Plow 7" | | Average 7" Plowing | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Plot No. | | -50 | | -51 | | -52 | | -53 | | -54 | | -55 | | -56 | | -57 | | -58 | | -59 | | | |
| Yield | | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. |
| Acre | Yr. Crop. Cut. | Cut | Total | Cut | Total | Cut | Total | Cut | Total | Cut | Total | Cut. | Total | Cut | Total | Cut | Total | Cut | Total | Cut | Total | Cut | Total |
| 550-9. | 1916 R.Cl.1 | 3550 | 3550 | 3100 | 3100 | 3350 | 3350 | 3050 | 3050 | 3450 | 3450 | 3300 | 3300 | 3250 | 3250 | 3500 | 3500 | 3550 | 3550 | 3750 | 3750 | 3583 | 3583 |
| 450-9. | 1917 R.Cl.1 | 920 | | 960 | | 1030 | | 1190 | | 1390 | | 2030 | | 2270 | | 2120 | | 2130 | | 2770 | | 1693 | |
| 450-9. | 1917 R.Cl.2 | 2250 | 3170 | 2250 | 3210 | 2300 | 3330 | 1950 | 3140 | 2100 | 3490 | 2270 | 4300 | 2000 | 4270 | 2100 | 4220 | 2050 | 4180 | 2050 | 4820 | 2133 | 3827 |
| 350-9. | 1918 R.Cl.1 | 1200 | | 1260 | | 1100 | | 1300 | | 800 | | 1760 | | 1500 | | 1350 | | 650 | | 1550 | | 1183 | |
| 350-9. | 1918 R.Cl.2 | 1200 | 2400 | 1100 | 2360 | 1040 | 2140 | 1060 | 2360 | 970 | 1770 | 1240 | 3000 | 1000 | 2500 | 1070 | 2420 | 1100 | 1750 | 650 | 2200 | 940 | 2123 |
| 250-9. | 1919 R.Cl.1 | 3190 | | 3440 | | 3470 | | 3660 | | 3540 | | 3160 | | 3250 | | 3350 | | 3570 | | 3110 | | 3280 | |
| 250-9. | 1919 R.Cl.2 | 3250 | 6440 | 3750 | 7190 | 3500 | 6970 | 3250 | 6910 | 3250 | 6790 | 3850 | 7010 | 3650 | 6900 | 3950 | 7300 | 3700 | 7270 | 3450 | 6560 | 3317 | 6597 |
| 550-9. | 1920 S.Cl.1 | 3150 | 3150 | 3350 | 3350 | 3320 | 3320 | 3300 | 3300 | 3020 | 3020 | 3220 | 3220 | 3200 | 3200 | 3370 | 3370 | 3370 | 3370 | 2770 | 2770 | 2980 | 2980 |
| 450-9. | 1921 S.Cl.1 | 2750 | 2750 | 2850 | 2850 | 2450 | 2450 | 2300 | 2300 | 2900 | 2900 | 2650 | 2650 | 2650 | 2650 | 2350 | 2350 | 2450 | 2450 | 2050 | 2050 | 2567 | 2567 |
| 350-9. | 1922 S.Cl. | No hay cut—entire crop for seed. | | | | | | | | | | | | | | | | | | | | | |
| 250-9. | 1923 S.Cl. | No hay cut—entire crop for seed. | | | | | | | | | | | | | | | | | | | | | |
| 550-9. | 1924 S.Cl.1 | 2530 | 2530 | 2400 | 2400 | 2770 | 2770 | 2250 | 2250 | 2820 | 2820 | 2610 | 2610 | 1560 | 1560 | 3140 | 3140 | 2660 | 2660 | 2830 | 2830 | 2727 | 2727 |
| 450-9. | 1925 S.Cl.1 | 3200 | 3200 | 2200 | 2200 | 2350 | 2350 | 2200 | 2200 | 2950 | 2950 | 2350 | 2350 | 1950 | 1950 | 2050 | 2050 | 2250 | 2250 | 2600 | 2600 | 2917 | 2917 |
| 450-9. | 1925 S.Cl. | Plot plowed immediately after first cutting to control quack grass. | | | | | | | | | | | | | | | | | | | | | |
| 350-9. | 1926 S.Cl.1 | 850 | 850 | 625 | 625 | 775 | 775 | 700 | 700 | 1050 | 1050 | 350 | 350 | 275 | 275 | 1350 | 1350 | 1325 | 1325 | 1275 | 1275 | 1058 | 1058 |
| 350-9. | 1926 S.Cl. | Plots plowed immediately after first cutting to control quack grass. | | | | | | | | | | | | | | | | | | | | | |
| 250-9. | 1927 S.Cl. | Very poor stand—225 pounds for entire acre. Plowed after cutting to control quack grass. | | | | | | | | | | | | | | | | | | | | | |
| 550-9. | 1928 S.Cl.1 | 2472 | 2472 | 2028 | 2028 | 2556 | 2556 | 2580 | 2580 | 2306 | 2306 | 2778 | 2778 | 3889 | 3889 | 3917 | 3917 | 4806 | 4806 | 4778 | 4778 | 3185 | 3185 |
| 450-9. | 1929 S.Cl.1 | 2075 | 2075 | 1025 | 1025 | 1300 | 1300 | 1150 | 1150 | 1100 | 1100 | 1475 | 1475 | 2250 | 2250 | 2475 | 2475 | 2525 | 2525 | 3450 | 3450 | 2208 | 2208 |
| 350-9. | 1930 S.Cl.1 | 780 | 780 | 550 | 550 | 900 | 900 | 850 | 850 | 800 | 800 | 1250 | 1250 | 1825 | 1825 | 1850 | 1850 | 1500 | 1500 | 1225 | 1225 | 935 | 935 |
| 250-9. | 1931 S.Cl. | Very poor stand. Plowed and seeded to soy beans, which were cut for seed. | | | | | | | | | | | | | | | | | | | | | |
| 550-9. | 1932 S.Cl.1 | 5000 | 5000 | 5250 | 5250 | 5900 | 5900 | 5850 | 5850 | 5050 | 5050 | 5750 | 5750 | 5600 | 5600 | 5600 | 5600 | 6050 | 6050 | 6100 | 6100 | 5383 | 5383 |
| 450-9. | 1933 S.Cl.1 | 215 | 215 | 170 | 170 | 290 | 290 | 420 | 420 | 740 | 740 | 510 | 510 | 1270 | 1270 | 1270 | 1270 | 1330 | 1330 | 1100 | 1100 | 685 | 685 |
| 350-9. | 1934 R.Cl. | Failure due to drought. Seeded to Bison Flax April 28th. Flax also failed. | | | | | | | | | | | | | | | | | | | | | |
| 250-9. | 1935 R.Cl. | Failure due to drought. Seeded to soy beans. | | | | | | | | | | | | | | | | | | | | | |
| 250-9. | 1935 SoyB.1 | 3150 | 3150 | 3150 | 3150 | 3500 | 3500 | 3450 | 3450 | 3400 | 3400 | 3200 | 3200 | 2450 | 2450 | 3000 | 3000 | 3750 | 3750 | 3000 | 3000 | 3183 | 3183 |
| 550-9. | 1936 S.Cl.* | 4375 | 4375 | 4563 | 4563 | 4375 | 4375 | 4875 | 4875 | 3938 | 3938 | 4063 | 4063 | 4813 | 4813 | 4250 | 4250 | 4063 | 4063 | 3438 | 3438 | 3917 | 3917 |
| 450-9. | 1937 S.Cl.† | 0 | 0 | 0 | 0 | 0 | 0 | 250 | 250 | 450 | 450 | 450 | 450 | 1150 | 1150 | 2200 | 2200 | 5000 | 5000 | 5500 | 5500 | 1983 | 1983 |

*Continued on next page*

**Appendix Table IV, Continued**

| Tillage | Plow 7" | | Plow 4" | | P.6", S.S.6" | | P. 6", S.S.10" | | Plow 7" | | See Pg. 8 | | Plow 8" | | Dp. T. 10" | | Dp. T. 12" | | Plow 7" | | Average 7" Plowing | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Plot No. | -50 | | -51 | | -52 | | -53 | | -54 | | -55 | | -56 | | -57 | | -58 | | -59 | | | |
| Yield | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw |
| Acre Year Crop | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. |
| (6) R.Cl. Totals | | 15560 | | 15860 | | 15790 | | 15460 | | 15500 | | 17610 | | 16920 | | 17440 | | 16750 | | 17330 | | 16130 |
| **Average (6)** | | **2593** | | **2643** | | **2632** | | **2577** | | **2583** | | **2935** | | **2820** | | **2907** | | **2792** | | **2888** | | **2688** |
| **Increase over "Av.P.7"** | | | | **-45** | | **-56** | | **-111** | | | | **247** | | **132** | | **219** | | **104** | | | | |
| **Increase percent** | | | | **-1.67** | | **-2.08** | | **-4.13** | | | | **9.19** | | **4.91** | | **8.15** | | **3.87** | | | | |
| (16) S.Cl. Totals | | 27397 | | 25011 | | 26986 | | 26725 | | 27124 | | 27456 | | 30432 | | 33822 | | 37329 | | 37116 | | 30545 |
| **Average (16)** | | **1712** | | **1563** | | **1687** | | **1670** | | **1695** | | **1716** | | **1902** | | **2114** | | **2333** | | **2320** | | **1909** |
| **Increase over "Av.P.7"** | | | | **-346** | | **-222** | | **-239** | | | | **-193** | | **-7** | | **205** | | **424** | | | | |
| **Increase percent** | | | | **-18.12** | | **-11.63** | | **-12.52** | | | | **-10.11** | | **-0.37** | | **10.74** | | **22.21** | | | | |
| (1) Soy Beans | | 3150 | | 3150 | | 3500 | | 3450 | | **3400** | | 3200 | | 2450 | | 3000 | | 3750 | | 3000 | | 3183 |
| **Increase over "Av.P.7"** | | | | **-33** | | **317** | | **267** | | | | **17** | | **-733** | | **-183** | | **567** | | | | |
| **Increase percent** | | | | **-1.04** | | **9.96** | | **8.39** | | | | **0.53** | | **-23.03** | | **-5.75** | | **17.81** | | | | |
| (22yr.) Total Hay Crops | | 46107 | | 44021 | | 46276 | | 45635 | | 46024 | | 48266 | | 49802 | | 54262 | | 57829 | | 57446 | | 49858 |
| **Average (22)** | | **2096** | | **2001** | | **2103** | | **2074** | | **2092** | | **2194** | | **2264** | | **2466** | | **2629** | | **2611** | | **2266** |
| **Increase over "Av.P.7"** | | | | **-265** | | **-163** | | **-192** | | | | **-72** | | **-2** | | **200** | | **363** | | | | |
| **Increase percent** | | | | **-11.69** | | **-7.19** | | **-8.47** | | | | **-3.18** | | **-0.09** | | **8.83** | | **16.02** | | | | |

## Appendix Table V. Yields of Legumes in Bushels (60 lbs.) and Pounds of Straw Per Acre From Plots Plowed Differentially Before Corn

| Tillage | | | Plow 7" | | Plow 4" | | P.6", S.S.6" | | P. 6", S.S.10" | | Plow 7" | | See Pg. 8 | | Plow 8" | | Dp. T. 10" | | Dp. T. 12" | | Plow 7" | | Average 7" Plowing | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Plot No. | | | -50 | | -51 | | -52 | | -53 | | -54 | | -55 | | -56 | | -57 | | -58 | | -59 | | | |
| Yield | | | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw | Seed | Straw |
| Acre | Year | Crop | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. | Bu. | Lbs. |
| 550-9. | 1916 | R.Cl. | 1.70 | 1300 | 1.95 | 1200 | 2.17 | 1490 | 1.92 | 1290 | 2.00 | 1380 | 2.20 | 1330 | 2.17 | 1570 | 2.17 | 1770 | 2.45 | 1850 | 2.20 | 1790 | 1.97 | 1490 |
| 450-9. | 1917 | R.Cl | No seed—both cuttings for hay. | | | | | | | | | | | | | | | | | | | | | |
| 350-9. | 1918 | R.Cl. | No seed—both cuttings for hay (hay about half weeds). | | | | | | | | | | | | | | | | | | | | | |
| 250-9. | 1919 | R.Cl. | No seed—both cuttings for hay (plowed Oct. 15, 1919—12 in. high). | | | | | | | | | | | | | | | | | | | | | |
| 550-9. | 1920 | S.Cl. | 4.00 | 5260 | 4.75 | 5365 | 6.83 | 4840 | 5.33 | 5830 | 4.83 | 5960 | 6.67 | 6000 | 7.00 | 6180 | 7.25 | 5715 | 6.50 | 5360 | 7.75 | 5535 | 5.53 | 5585 |
| 450-9. | 1921 | S.Cl. | 5.00 | 900 | 4.83 | 1310 | 5.17 | 1290 | 5.00 | 1200 | 5.17 | 1690 | 5.33 | 1380 | 3.50 | 890 | 3.67 | 1480 | 5.33 | 980 | 5.67 | 1360 | 5.28 | 1317 |
| 350-9. | 1922 | S.Cl. | 11.83 | 3040 | 12.67 | 2590 | 12.33 | 2410 | 11.83 | 3390 | 14.17 | 3050 | 9.33 | 3390 | 10.33 | 2680 | 11.83 | 2790 | 12.33 | 2860 | 14.00 | 3310 | 13.33 | 3133 |
| 250-9. | 1923 | S.Cl. | 9.67 | 3520 | 10.17 | 3590 | 12.00 | 3380 | 11.50 | 3810 | 11.33 | 3220 | 10.50 | 3570 | 10.67 | 3360 | 12.50 | 3850 | 14.00 | 3360 | 13.17 | 4010 | 11.39 | 3583 |
| 550-9. | 1924 | S.Cl. | 6.25 | 2825 | 6.58 | 2805 | 8.17 | 3110 | 6.42 | 3115 | 6.83 | 3090 | 8.50 | 3390 | 5.75 | 2955 | 6.17 | 3030 | 5.75 | 2855 | 4.50 | 2330 | 5.86 | 2748 |
| 450-9. | 1925 | S.Cl. | Plowed immediately after 1st cutting to control quack grass—hence no seed crop. | | | | | | | | | | | | | | | | | | | | | |
| 350-9. | 1926 | S.Cl. | Plowed immediately after 1st cutting to control quack grass—hence no seed crop. | | | | | | | | | | | | | | | | | | | | | |
| 250-9. | 1927 | S.Cl. | Very poor stand. Plowed immediately after 1st cutting to control quack grass—hence no seed crop. | | | | | | | | | | | | | | | | | | | | | |
| 550-9. | 1928 | S.Cl. | 3.70 | 2534 | 2.78 | 2853 | 3.70 | 2378 | 3.89 | 2545 | 3.52 | 2545 | 4.81 | 2267 | 6.48 | 3521 | 7.04 | 3445 | 6.85 | 3389 | 7.22 | 4123 | 4.81 | 3067 |
| 450-9. | 1929 | S.Cl. | 3.00 | 1620 | 1.67 | 1800 | 2.17 | 1670 | 1.75 | 1595 | 2.08 | 1475 | 2.42 | 1555 | 3.50 | 2010 | 4.75 | 1955 | 4.42 | 1835 | 5.00 | 2200 | 3.36 | 1765 |
| 350-9. | 1930 | S.Cl. | 0.42 | 1125 | 0.50 | 1020 | 0.67 | 1060 | 0.75 | 1255 | 0.75 | 1255 | 0.92 | 1395 | 1.17 | 1530 | 1.17 | 1430 | 1.33 | 1320 | 1.08 | 1785 | 0.75 | 1388 |
| 250-9. | 1931 | SoyB. | 6.67 | 800 | 7.33 | 1060 | 7.33 | 660 | 8.33 | 800 | 6.33 | 540 | 5.33 | 710 | 6.17 | 930 | 8.33 | 850 | 7.00 | 700 | 6.67 | 650 | 6.56 | 663 |
| 550-9. | 1932 | S.Cl. | 4.50 | 1180 | 4.00 | 770 | 4.83 | 1250 | 4.67 | 1290 | 4.67 | 1050 | 5.33 | 1340 | 5.00 | 1380 | 6.42 | 1480 | 8.33 | 1900 | 9.67 | 2410 | 6.28 | 1547 |
| 450-9. | 1933 | S.Cl. | 3.00 | 320 | 2.00 | 580 | 1.67 | 700 | 3.33 | 800 | 3.00 | 920 | 3.00 | 1020 | 2.67 | 740 | 4.00 | 960 | 4.83 | 1010 | 4.83 | 1310 | 3.61 | 850 |
| 350-9. | 1934 | R. Cl. | Failure due to drought. Seeded to Bison Flax April 28. Flax also failed. | | | | | | | | | | | | | | | | | | | | | |
| 250-9. | 1935 | R.Cl. | Red clover failed. Seeded to soy beans, which were cut for hay. | | | | | | | | | | | | | | | | | | | | | |
| 550-9. | 1936 | R.Cl. | Very little red clover—mostly volunteer sweet clover—cut for hay. | | | | | | | | | | | | | | | | | | | | | |
| 450-9. | 1937 | R.Cl. | No seed crop. Weeds cut and left lie. | | | | | | | | | | | | | | | | | | | | | |

*Continued on next page*

**Appendix Table V, Continued**

| Tillage | Plow 7" | | Plow 4" | | P.6", S.S.6" | | P. 6", S.S.10" | | Plow 7" | | See Pg. 8 | | Plow 8" | | Dp. T. 10" | | Dp. T. 12" | | Plow 7" | | Average 7" Plowing | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Plot No. | -50 | | -51 | | -52 | | -53 | | -54 | | -55 | | -56 | | -57 | | -58 | | -59 | | | |
| Yield | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. | Lbs. |
| Acre Yr. Crop. Cut. | Cut | Total | Cut | Total | Cut | Total | Cut | Total | Cut | Total | Cut. | Total | Cut | Total | Cut | Total | Cut | Total | Cut | Total | Cut | Total |
| (8 yr.) R.Cl. Totals | 1.70 | 1300 | 1.95 | 1200 | 2.17 | 1490 | 1.92 | 1290 | 2.00 | 1380 | 2.20 | 1330 | 2.17 | 1570 | 2.17 | 1770 | 2.45 | 1850 | 2.20 | 1790 | 1.97 | 1490 |
| Average (8) | 0.21 | 163 | 0.24 | 150 | 0.27 | 186 | 0.24 | 161 | 0.25 | 173 | 0.28 | 166 | 0.27 | 196 | 0.27 | 221 | 0.31 | 231 | 0.28 | 224 | 0.25 | 186 |
| Increase over "Av.P.7" | | | -0.01 | -36 | 0.02 | 0 | -0.01 | -25 | | | 0.03 | -20 | 0.02 | 10 | 0.02 | 35 | 0.06 | 45 | | | | |
| Increase percent | | | -4.00 | -19.35 | 8.00 | 0.00 | -4.00 | -13.44 | | | 12.00 | -10.75 | 8.00 | 5.38 | 8.00 | 18.82 | 24.00 | 24.19 | | | | |
| (13 yr.) S.Cl. Totals | 51.37 | 22324 | 49.95 | 22683 | 57.54 | 22088 | 54.47 | 24830 | 56.35 | 24255 | 56.81 | 25307 | 56.07 | 25246 | 64.80 | 26135 | 69.67 | 24869 | 72.89 | 28373 | 60.20 | 24983 |
| Average (13) | 3.95 | 1717 | 3.84 | 1745 | 4.43 | 1699 | 2.37 | 1910 | 4.33 | 1866 | 4.37 | 1947 | 4.31 | 1942 | 4.98 | 2010 | 5.36 | 1913 | 5.61 | 2183 | 4.63 | 1922 |
| Increase over "Av.P.7" | | | -0.79 | -177 | -0.20 | -223 | -2.26 | -12 | | | -0.26 | 25 | -0.32 | 20 | 0.35 | 88 | 0.73 | -9 | | | | |
| Increase percent | | | -17.06 | -9.21 | -4.32 | -11.60 | -48.81 | -0.62 | | | -5.62 | 1.30 | -6.91 | 1.04 | 7.56 | 4.58 | 15.77 | -0.47 | | | | |
| (1 yr.) Soy Beans | 6.67 | 800 | 7.33 | 1060 | 7.33 | 660 | 8.33 | 800 | 6.33 | 540 | 5.33 | 710 | 6.17 | 930 | 8.33 | 850 | 7.00 | 700 | 6.67 | 650 | 6.56 | 663 |
| Increase over "Av.P.7" | | | 0.77 | 397 | 0.77 | -3 | 1.77 | 137 | | | -123 | 47 | -0.39 | 267 | 1.77 | 187 | 0.44 | 37 | | | | |
| Increase percent | | | 11.74 | 59.89 | 11.74 | -0.45 | 26.98 | 20.66 | | | -18.75 | 7.09 | -5.95 | 40.27 | 26.98 | 28.21 | 6.71 | 5.58 | | | | |
| Total lbs. | | | | | | | | | | | | | | | | | | | | | | |
| Seed, 22 yrs. | 3584 | | 3554 | | 4022 | | 3883 | | 3881 | | 3860 | | 3865 | | 4518 | | 4747 | | 4906 | | 4124 | |
| Crops Totals | 59.74 | 24424 | 59.23 | 24943 | 67.04 | 24238 | 64.72 | 26920 | 64.68 | 26175 | 64.34 | 27347 | 64.41 | 27746 | 75.30 | 28755 | 79.12 | 27419 | 81.76 | 30813 | 68.73 | 27136 |
| Average (22) | 2.72 | 1110 | 2.69 | 1134 | 3.05 | 1102 | 2.94 | 1224 | 2.94 | 1190 | 2.92 | 1243 | 2.93 | 1261 | 3.42 | 1307 | 3.60 | 1246 | 3.72 | 1401 | 3.12 | 1233 |
| Increase over "Av.P.7" | | | -0.43 | -99 | -0.67 | -131 | -0.18 | -9 | | | -0.20 | 10 | -0.19 | 28 | 0.30 | 74 | 0.48 | 13 | | | | |
| Increase percent | | | -13.78 | -8.03 | -21.47 | -10.62 | -5.77 | -0.73 | | | -6.41 | 0.81 | -6.09 | 2.27 | 9.62 | 6.00 | 15.38 | 1.05 | | | | |