

# The 1945 Crop Season in North Dakota

By

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**T**he growing season of 1945 had so many characteristics different than the average of conditions likely to occur over an average of a long period of years that it seems wise to publish a rather detailed discussion of the 1945 growing season as it developed at the Experiment Station at Fargo and at each of the branch experiment stations. Mr. T. E. Stoa, Agronomist, submits the following statement descriptive of the 1945 crop season at Fargo and with some comments upon the character of the crop season in the State as a whole.

## The 1945 Crop Season at Fargo and Throughout the State

"A very mild winter followed a relatively wet summer and fall in 1944. Snow was very light in the winter of 1944-45 and March temperatures were generally moderate. Some crop land was actually sown in March. April was less favorable, there being some wet snow and many small showers with below normal temperatures, which seriously delayed spring operations. Soil conditions for cultivating and sowing were not good. The soil was soggy and waxy underneath for a long time—making it difficult to work heavy soils without causing puddling. Much seeding, including wheat, remained to be done after April 30.

May continued very cool, cloudy and crops developed slowly. Heavy soils which had been worked when still a little wet, were cloddy and crop emergence was uneven. In some instances full germination did not occur until after good rains May 31 and June 1. Considerable wheat and other late grains were sowed this year in late May and even after June 1 on the heavier soils of the Red River Valley.

The May mean temperature at Fargo was 7 degrees below normal and for the first 3 weeks in June temperatures continued distinctly below normal. Lots of weeds, wild oats, quack grass, mustard, came on in the grain fields because crop stands developed slowly. Late June commenced to get dry in some sections of the State. Light to heavier rains in early July relieved the situation for a while. Further scattered local rains oc-

occurred about mid-July which, with continued moderate temperatures, kept crop prospects up. A fair sprinkling of leaf rust came on early in the wheat crop but in the southern part of the State did not develop to the extent first indicated. However, in northern counties this leaf rust continued to develop on the late crop, actually becoming very heavy before the crop ripened. Stem rust was also present on wheat in that area and both stem and leaf rust on the oats. Considerable scab again occurred this year on wheat in the southeastern section of the State, but it was less damaging than in 1944. Barley and flax were relatively free from any serious disease infestation this year.

In much of the State the small grain crop, because of the generally low temperature, was from 10 to 14 days later than normal. The first fall frost, Sept. 14, was light at Fargo (33°, touched soybeans and corn) but was heavy in western and south central part of the State (23°). A hard frost occurred at Fargo on Sept. 27 (26°). Corn was not fully mature and damage to yield and germination seemed likely.

For the State as a whole a generally excellent grain crop was produced, but corn needed warmer weather or another two weeks to ripen out."

#### Seeding Dates at Fargo

Wheat varieties were seeded at Fargo on May 7th and had emerged by May 22nd. Ripening occurred from as early as August 10th to as late as August 18th. It is of interest to note that the old Power Fife variety did not

get ripe until August 18th whereas the newer varieties were all ripe from four to five days earlier—in some cases as much as a week earlier. Durum varieties were ripe from August 17th to August 21st.

Oats varieties seeded on May 5th had emerged by May 20th.

Barley varieties were seeded at Fargo on April 28th and emerged by May 14th. Flax varieties were seeded on May 11th and had emerged by May 23rd.

Corn varieties were planted on May 19th. Frost occurred on September 15th. All corn varieties were harvested October 10th at which date the driest selection Nodak Hybrid 203 contained 30.1 percent moisture. It is an early 80-day type of corn. A very late so-called 100-day type of corn, Wisconsin Hybrid 4-12-A contained 55.2 percent moisture on October 10th.

#### 1945 Crop Season at Dickinson

Superintendent Leroy Moomaw of the Dickinson Agricultural Experiment Station submits the following comments on weather and crops for 1945.

"Crop yields in 1945 were again well above average for the fourth consecutive year at the Station, and the fifth consecutive year in the district. (The 1941 crop at the Station was severely damaged by hail, although the district produced above average yields.) This crop was produced in spite of low seasonal and annual rainfall. Water was stored in the soil as a result of heavy November rain and snow, the November snowfall of 28 inches being the high for any month of record. March snow-

fall was also more than three times normal, and further increased the water stored in the soil. Seasonal rainfall for the four months, April to July, of 6.96 inches was well below the normal 9.29 inches for these months. Precipitation to the end of September in 1945 amounted to 11.53 inches, giving a deficit of 2.36 inches as compared to the 53-year average for the nine months. Total of 12.22 inches for the full year showed a deficit of 3.5 inches.

Moderate temperatures during the growing season favored small grains, so that most of the grains filled well and produced seed above normal weight per bushel. Low temperatures delayed the development of corn, and until the middle of August it looked as though practically no mature corn would be harvested in the district. Dry weather with normal August temperatures hastened the development of corn, while continued dry weather and above normal temperatures during the first ten days of September favored maturity and resulted in better than average yields, with some corn mature enough for seed.

Small grains were not severely damaged by plant diseases, with the exception that root rot severely reduced barley yields in some cases. Hessian fly damage was found in most wheat fields through the district, and on some farms in Southwestern Stark County yields were greatly reduced. Mida wheat and a few other strains in the wheat nursery were definitely resistant to Hessian fly.

Precipitation during the last three months of the year was

less than half of normal. The soil froze up about as dry as in the fall of 1943. Rainfall in 1945 was the lowest since 1936, though the intensity of drought was nothing like that year."

### Seeding Dates at Dickinson

Wheat, oats and barley were seeded in variety trials at Dickinson on April 27th and 28th. The first field work on sandy soil began on April 10th when corn ground was ready for discing for a block of wheat. Field work on rotation and tillage plots was started on April 19th. Wheat and oats were seeded on the main rotation field April 21st and on the college field April 23rd about a week later than average and a week later than in 1944. Flax, sweet clover, and alfalfa were seeded on May 15th. Potatoes were planted on May 9th. Some early seeded oats and barley were damaged by a frost when the temperature dropped to 15° on the morning of May 5th but wheat survived this temperature with little or no damage.

### The 1945 Crop Season at Edgeley

Superintendent Joe P. Tiernan of the Edgeley Agricultural Experiment Station submits the following statement descriptive of the 1945 crop season at that Station. "The growing season—April, May, June, and July of 1945 had 6.60 inches of precipitation compared with 10.66 inches which is the 44 year average for the same period. The precipitation for the first ten months of 1945, January 1st through November 1st, was 12.70 inches compared with the 44 year average of 16.85 inches for the same period. In other words the pre-

precipitation record indicates that Edgeley experienced a near drought condition during the year. Grain suffered from lack of moisture on the plots on the Station where the shale subsoil comes near to the surface because of the low water-holding capacity of the shaly subsoil.

Seeding opened up the last part of March under favorable moisture conditions but the weather permitted seeding for only about five days. It was not until about April 20th that the majority of farmers began seeding. We had a dry growing season and hot weather came when the grain was in the process of filling. The March seeding had passed the critical stage when the hot weather came, but all April seedings were damaged. The earlier varieties planted in April in a series of cereal test plots were especially affected. Millets and sorghums which were planted May 24th scarcely emerged at all. All the crops of sorghums and millets in the vicinity of the Edgeley Station were failures this year.

During the drought period of the 30's in the Edgeley territory it appears that many weeds developed seed although they did not grow very tall. Such seeds scattered onto the fields and have been dormant until recent years furnished enough moisture for their germination. Those weeds have been hard to handle during the past few years."

#### **The 1945 Crop Season at Langdon**

Superintendent Victor Sturlaugson of the Langdon Agricultural Experiment Station has the following comments upon

the weather and crop production for 1945:—"Perhaps an all time record crop was produced at the Langdon Substation, and in this area in general, in 1945. The wheat and barley variety yields at the station surpassed all previous records and the quality was exceptionally good. The durum wheats weighed 64 pounds to the bushel with but a few exceptions and the hard wheats held well above the 60 pound mark. Oat yields were reduced to some extent as a result of heavy rust infestation, however the highest yielding oat, namely the Rusota made over 90 bushels per acre. The flax yields, also, were considerably above the average. This record crop was produced with sub-normal moisture for the season. The total moisture for the period January 1st to November 30th, 1945 was 17.35 inches. Adding the normal for December, .63 of an inch, makes 17.98 inches whereas the normal annual rainfall is 18.30 inches. Then too, the spring of 1945 opened up considerably later than usual inasmuch as practically no field work was possible until the second week in May. Usually field operations are started in this section about the 20th of April. However, with a plentiful moisture reserve from the fall of 1944 combined with a nearly ideal moisture distribution during the 1945 growing season and further due to the fact that the temperature remained relatively cool throughout the season production of this record crop was made possible.

The 1944-45 winter was unusually mild with but little snowfall permitting travel by car all through the winter. Heavy rains

fell the latter part of March driving the frost out to a considerable depth. April remained wet and cold setting field work back about three weeks behind the usual schedule. Spring moisture conditions were ideal, however, emergence of crops was slow due to continued cold weather at that time. The crops remained behind schedule throughout the season with durum harvest falling largely into September. Rains and subsequent wet weather persisted throughout practically all of September permitting but very little threshing from September 6th to October 3rd. Fine weather prevailed through the remainder of October and thus threshing and combine operations were practically completed by the end of that month. While the prolonged wet weather in September caused considerable bleaching of grains in the swath further damage was averted by the fact that the weather remained cool which prevented sprouting. Grains in the shocks came through in good shape. November was unusually rough, cold and cloudy with an excessive snowfall of over ten inches. Roads, including most of the highways in this section became blocked with snow on November 8th and remained in poor condition for car travel for a considerable length of time. Only four clear days and five partly cloudy days were recorded for the month leaving twenty-one days cloudy. Sleet and mist were frequent during the month. A minimum of 14 degrees below zero was recorded for November."

Seeding operations at the Station commenced May 4th. The wheat varieties were seeded on

that date. Oats and barley varieties were seeded May 16th and emerged uniformly on May 23rd. The wheat plots on the fertilizer trials were seeded on May 10th and had all emerged by May 17th. Fertilized plots ripened three days earlier than the "check" or unfertilized plots. The tillage trials with wheat at the Langdon Station were seeded May 10th and emerged by May 19th.

### The 1945 Crop Season at Williston

Superintendent W. H. Huber submits the following statement with respect to weather conditions in 1945 at the Williston Agricultural Experiment Station. Precipitation during the months of October, November, and December, 1944, was 0.66 of an inch below normal and top soil was dry when winter set in. Precipitation in this region the first three months of the year is normally light. In 1945 it was below normal until the last week in March when the precipitation for that month amounted to 1.40 inches, 0.71 of an inch above normal. The total precipitation for January, February, and March, 1945, was 2.28 inches which was 0.64 of an inch above normal for the three month period. This stored enough moisture in the soil to start the crop. Only 0.43 of an inch of precipitation occurred during April and 0.99 of an inch in May, a total deficiency of 1.84 inches for those two months. The total rainfall in May amounted to only 0.99 of an inch which was 1.07 inches below normal for that month. Most of the rain that fell in May fell on the 31st when there was 0.79 of an inch precipitation, the

first rain of any consequence since the last week in March. Only .2 of an inch of rain fell between May 5th and May 24th. It came in four light showers of no consequence.

### Seeding Dates on the Upland Station at Williston

The wheat varieties were seeded on the 27th of April and emerged on the 12th of May. Barley varieties were seeded on the 30th of April and emerged on the 15th of May. Oats varieties were seeded on the first of May and emerged on the 17th of May. Plant growth was slow during May but the root system became well developed during this period and crops responded readily to improved growing conditions in June.

### Seeding Dates on the Irrigation Station at Williston

The Irrigation Station at Williston is on the Lewis and Clark Project on the flood plain of the Missouri River. Barley varieties were seeded at the Irrigation Station on May 3rd and emergence was on May 18th. Early varieties were ripe on August 12th and later varieties on August 14th. Oats varieties were seeded on May 15th and had emerged by May 22nd. Early varieties were ripe by August 14th and later varieties by August 16th. Flax varieties were seeded on May 4th and emerged by May 22nd. The earliest ripening occurred on August 26th and latest on August 31st. Potatoes were planted on May 24th and emerged June 24th. They were first irrigated on July 22nd and the second irrigation occurred on August 26th. They were har-

vested October 3rd. Soybean varieties were seeded May 21st and had emerged by May 26th. This crop was partly damaged by hail on June 23rd and killed by the first killing frost on September 20th. It was then harvested for hay. Austrian field peas were seeded on May 21st and had emerged by May 28th. Irrigation took place on July 20th and on one plot the crop was plowed under for green manure on August 1st. The two other plots were harvested for seed on August 27th.

### Seasonal Conditions at Minot

Superintendent G. N. Geiszler reports the following seasonal conditions at the Minot Station. "The season was one that would rate below normal for temperature and rainfall and above normal for wind velocities.

After an unseasonably warm spell in March, the weather turned cool and rainy. The soil did not dry up to permit seeding before April nineteenth and then only on summer-fallow and fall plowing. Stubble land remained too wet to plow until the first of May. Several heavy winds started some wind erosion on the light soil areas which had been fall plowed.

Below normal temperatures and rainfall continued through May and June, with the temperature the third week in June rising to near summer level.

July started relatively cool but temperatures rose and rainfall dropped off so that some crops suffered slight moisture deficiency towards the end of the month. However, a heavy thundershower on July 26th re-



plished the moisture supply to carry all crops to maturity without appreciable drought injury.

August temperatures were about normal and rainfall below normal. This condition facilitated harvesting operations. However, high winds were common. These caused much grain which had earlier been injured by the sawfly to fall over out of reach of harvesting equipment. On some fields where wheat followed wheat, losses as high as ten percent were noted. A check on summerfallow made on August 15th showed the soil thoroughly moist to a depth of eight feet.

September temperatures were about normal with the first killing frost occurring on September 12th. This froze so hard as to injure leaves on ash and box-elder trees. Frost occurred on several successive nights. Rainfall was light.

October temperatures were some below normal with little precipitation.

November temperatures were below normal and precipitation quite high with relatively little wind. The first snow of the season fell on November 4th.

**North Dakota is the leading barley producing state.** The serious decline in barley production in the areas of the United States usually considered malting barley areas has increased greatly the market outlet for North Dakota barley of good quality and malting type. The preferred malting varieties are Wis. 38, Kindred ("L"), Manchuria and O.A.C. 21. Wis. 38, usually an excellent yielder, is less resistant to some of the root rots and blight diseases so common in 1944 and 1943, than is the "L" or Manchuria barley. A long and weak neck that breaks readily and sometimes results in a serious loss of heads is another disadvantage for Wis. 38. The "L" is a rough-necked Manchurian type of barley that has some resistance to stem rust and a uniformly white or straw-colored kernel. Relatively weak straw is its most serious drawback. (T.E.S.)

This was followed by more snow and near zero temperatures for the remainder of the month."

Wheat varieties were seeded at the Minot Station on April 28th and the earliest varieties were ripe by August 16th and later maturing varieties were ripe by August 20th. Barley varieties were seeded on April 30th and the early variety was ripe on August 8th while the latest variety was ripe by August 20th. Oats varieties were seeded on April 30th. The earliest variety was ripe on August 9th and the latest variety on August 21st. An early killing frost killed all the corn before any of the varieties had matured.

#### Seasonal Conditions at Hettinger

The Hettinger Agricultural Experiment Station is now primarily being maintained as a sheep breeding experiment station. Due to a lack of equipment this year cereal varieties which are tested in a small way were seeded late. Wheat was seeded May 20th and was ready for harvest on August 21st. Barley varieties were seeded on May 20th and with the exception of one variety was ready for harvest by August 6th. The later variety was harvested on August 13th.