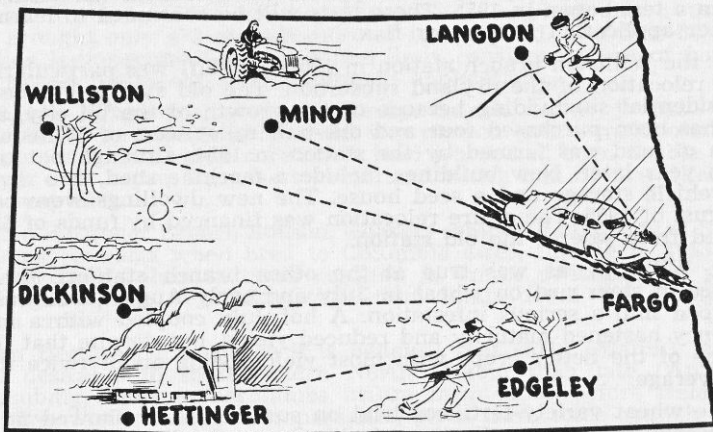


# Summary of 1955 Activity at the Six Branch Experiment Stations



The six branch stations are located at Edgeley, Hettinger, Dickinson, Williston, Minot and Langdon—all having some variation in soil, climate and farming patterns. These branch stations are needed to give a statewide picture of plant, animal, soil and farm structure picture as well as to describe the within-state variations.

At the Edgeley branch station early varieties of grains suffered most in 1955 because of the light snow the preceding winter and the dry weather in April and May. Poor emergence and germination were evident throughout the area and a week or two of extremely hot weather at the time that early grain was filling did much to account for light test weight of barley and wheat. Rust was a smaller problem in 1955 than in the two preceding years.

At the Langdon branch station B 5128 flax continued to display a slight yield advantage over other varieties and is recommended for early seeding in that area. Redwood and Norland also did well with Marine and Sheyenne, early maturing varieties, favored for late sowing. Among the oats grown at Langdon, Garry Select, a Canadian variety, along with Rainbow, Exeter, Ajax and Rodney did well. Ajax is the earliest maturing of these varieties and Exeter the latest.

As was true at other points in the state, winter rye did well in 1955 at Langdon with the exception of Tetra Petkus. Ladak alfalfa did best among the alfalfa varieties, and as was true elsewhere in the state, an alfalfa-brome mixture continued to outyield straight grass seedings.

At the North Central Experiment Station at Minot, small grains and flax demonstrated their ability to yield well on sub-soil moisture. Low rainfall during the growing season forced plants to draw on moisture reserves resulting from heavy rains in the fall of 1954. Because the plants were able to do this, excellent yields were obtained despite the low rainfall during the growing season.

Fall tillage of stubble prior to spring plowing has not proved beneficial to wheat yields in tests conducted over the past five years at Minot. Fall spiking or fall cultivating prior to spring plowing both produced average

wheat yields of 14.4 bushels. Spring plowing of previously undisturbed stubble averaged 14.2 bushels. Spring plowing produced better yields than simply cultivating or disking the stubble in the spring. Where stubble was disked in the spring there were significantly heavier stands of pigeon grass and Russian thistle growing with the wheat.

In fertilizer tests at the North Central station flax did not respond to nitrogen fertilizer, but phosphorus applications increased the yields somewhat in a test begun in 1955. These tests will be continued to learn which fertilizer application is best for flax.

At the Williston branch station in 1955 the staff was particularly busy in the relocation of the dryland substation. The old station has been sold for residential subdividing because of the growth of the oil city, and 640 acres has been purchased four and one-half miles west of Williston. This section of land was farmed by the station in 1954, although not occupied until a year later. New buildings include a machine shed, two dwellings, shop-vehicle storage and a seed house. The new dwellings were occupied in August of 1955. The entire relocation was financed by funds of \$175,000, received from sale of the old station.

At Williston, as was true at the other branch stations, there was evidence of stem rust on wheat in July and early August, but this never developed into a serious infestation. A hot July coupled with a moisture deficiency hastened maturity and reduced yields, but despite that the area had one of the better crops with most yields being about twice the long time average.

The wheat variety-fertilizer trial on summerfallow showed no significant response to the application of phosphorus fertilizer, and a trial with wheat involving both phosphorus and nitrogen fertilizer on last year's crop land showed no response to treatments.

Small grain trials at the Williston irrigation station brought the following averages: wheat, 38.2 bushels per acre; oats, 92.5 bushels per acre; barley, 50.8 bushels per acre and flax, 23.3 bushels per acre, all considered very good yields.

At the Dickinson branch station stem rust was not serious in 1955, and the planting and growing seasons were favorable. Top yields in the wheat variety trials were 33.4 bushels per acre for ND 8, 30.6 for ND 25 and 28.9 for ND 3, while Lee, Selkirk and Mida all yielded around 28.5 bushels per acre. Winter wheat killed out nearly 100 per cent at Dickinson.

Top yielders in the barley variety trials were Husky, Kindred x Titan (B103), Tregal, Titan and Hannchen.

Linda, Marine and Bison flax all yielded over seven bushels per acre, although dry July weather hindered the flax and favored weed growth. Significantly, yields in the weed-free nursery trials were more than double those in the field plots.

Gopher, with 78.8 bushels per acre, was the top yielder among oat varieties in 1955, a year which saw better-than-average yields. Branch yielded 77.8 bushels.

In Dickinson trials, standard crested wheatgrass and Nordan crested wheatgrass showed best yields over a four-year period, among the straight grass (as opposed to grass-legume) plots. Intermediate wheatgrass, green stipgrass, and pubescent wheatgrass also did well. Yields from Lincoln bromegrass and northern bromegrass were substantially less than that from the wheatgrasses. Southern type bromes yielded more than northern type bromes during the past two years. Ree wheatgrass gave the best yields of any of the intermediate wheatgrass varieties.

Grass-alfalfa mixtures cut for hay produced 2,301 pounds of dry hay, while grass mixtures without legumes produced only 1,577 pounds per acre, giving the grass-legume mixture a 45.9 per cent advantage. The four-year average of grass versus grass-alfalfa mixtures shows the latter outproducing the former by 32.3 per cent. Comparing alfalfa varieties, three-year aver-

ages show Narragansett leading with an average of 1.5 tons per acre, DuPuits second with 1.4 tons, Ladak 1.4 tons, and down at the lower end were Grimm (eighth in average production of varieties on trial) with 1.3 tons and Ranger ninth with 1.3 tons.

In the Dickinson grass fertilizer trials it was found that a 50 pound application of nitrogen fertilizer on old crested wheatgrass sod increased forage yields by about 1,200 pounds of hay per acre. An additional 50 pounds of nitrogen added another 768 pounds in yield, but a third 50 pounds brought only 472 pounds more of forage yield. The first 50 pound application is the economically justified limit, considering cost of fertilizer and decreased increment from additional applications.

In a new tillage trial at the Dickinson branch station, it was learned that production on stubble land which was plowed with a moldboard plow was 34 per cent better than on stubble land which had been double disked and 20 per cent better than the stubble land which had been worked with the one way disk.

At the Hettinger Branch Station, workers compared offspring of Suffolk and Hampshire rams when bred to Columbia ewes, finding in 1955 trials that the Suffolk-Columbia cross resulted in lambs averaging 14 pounds more weight apiece at market time than lambs from the Hampshire-Columbia cross.

From Hettinger experience it is believed that early (March) lambing is more desirable in southwestern North Dakota than late (April and May) lambing, since earlier lambs utilize farm labor before field work begins, gives lambs a lead over parasites, gives them some growth before they are exposed to predators and dogs, gets them eating grass when grass is at its highest nutrient value, permits early and most profitable marketing of lambs and thus leaves more late pasture for the ewe flock.

---

### NORTH DAKOTA PIG CROP UP

The number of pigs raised in North Dakota in the fall of 1955 (June 1 to December 1) was placed at 121,000 head, 12 per cent more than the similar period in 1954 and 15 per cent more than the 10-year (1944-1953) average, reports C. J. Heltemes, statistician at Fargo for the Department of Agriculture's Agricultural Marketing Service.

The record fall pig crop was in 1943, when 287,000 pigs were raised and the smallest in 30 years was the 79,000 produced in 1953. Fall farrowing in the fall of 1955 was placed by Heltemes at 18,000, largest number since 1945. The average size of litter was 6.71 pigs, exceeded only in 1952 and 1954. Largest litter size on record was 6.81 in 1952 and second largest the 6.74 in 1954.

Hog production in 1955 was 793,000 head, up from 676,000 in 1954 and largest number since 1946. Largest North Dakota hog production was in 1943, when 1,949,000 head were raised—more than twice the 10-year average.

The agricultural statistician predicts farrowing of 91,000 sows in the spring of 1956, a number equal to 94 per cent of the spring farrowing in 1955 and 84 per cent of the 10-year average.

---

### TEAMWORK AMONG FERTILIZERS

In a trial at the Hettinger, N. D., Branch Station in 1955, comparing effects of nitrogen and phosphorus fertilizers on yield of wheat grown on corn ground, it was found that phosphorus alone at 35 pounds per acre increased the wheat yield by 3.7 bushels per acre, whereas 20, 30, 40 or 50 pounds of nitrogen per acre in addition to the 35 pounds of phosphorus resulted in yield increases of 6.9, 7.4, 9.4 and 11.4 bushels per acre, respectively. The test weight of the wheat was not affected, either favorably or adversely, by fertilizer application.