

**ANNUAL REPORT  
OF THE  
DICKINSON EXPERIMENT STATION  
EXPERIMENTAL PROGRAM**

We have made some progress on a program of improvement and expansion at the Dickinson Experiment Station. Every effort is being made to coordinate all projects and activities so that we will:

1. Continue to improve and expand a worthwhile program in Agronomy, Livestock and Grass & Legume Investigations.
2. Improve the appearance of the Dickinson Experiment Station so that we can look upon our entire setup as a model even for an Experiment Station.
3. Contribute as much as possible to the improvement of agriculture in the West River Area, in all phases of work in which we are engaged.

In order to meet the requirements outlined by the preceding, it will be necessary that we include in our three programs of work, trials which cover, at least in a measure, the following phases of agriculture in the West River Area.

**A. AGRONOMY**

- I. Continue our work along the following lines:
  1. Crop rotations.
  2. Tillage practices.
  3. Variety trials.
  4. Small scale nursery work.
  5. Forage crop comparisons.
  6. Fertilizer trials with small grains.
- II. During the coming year submit to the Director of the North Dakota Agricultural Experiment Station the following reports for publication:
  1. A scientific report on 44 years work at the Dickinson Experiment Station from 1908-1951.
  2. A leaflet, containing a summary of the results of the crop rotations and tillage practices which have been carried out at the Dickinson Experiment Station, which will be available for distribution to farmers and ranchers.

**B. ANIMAL HUSBANDRY**

- I. Continue our cattle program with the following trials:
  1. Continue the winter feeding trials of breeding cows with six lots being fed as follows:
    - a. Ten lbs. of native upland hay and 30 lbs. silage.
    - b. Ten lbs. of crested wheatgrass hay and 30 lbs. of silage.
    - c. Two additional lots fed rations equal to 75% of those listed in a and b.
    - d. Nine lbs. native upland hay, 30 lbs. silage and .8 lb. soybean oil meal.
    - e. One lot receiving 75% of the amount listed in d.

2. Continue our trials on wintering calves using the 1951 calf crop with the following rations:
  - a. Four lbs. hay, 30 lbs. silage and 2 lbs. oats.
  - b. Four lbs. hay and 20 lbs. silage.
3. Using our yearling steers, compare a full feed of grain to a full feed of silage with a protein supplement for fattening steers using the following rations:
  - a. Seven lbs. crested wheatgrass hay and 15 lb. barley.
  - b. Six lbs. crested wheatgrass hay, 50 lbs. silage, and 1.5 lbs. soybean oil meal.
4. Increase our cow herd for experimental work to the maximum number of good cows that our pasture facilities and forage crop acreage at the Dickinson Experiment Station will carry.
5. Continue and expand the following program of hog work:
  - a. Maintain three breeds of hogs: the Duroc Jersey, Yorkshire, and Hamprace.
  - b. Keep these lines pure and at the same time make some crosses to determine the value of hybrid vigor when crosses of these breeds are made.
  - c. Raise both spring and fall litters to be used in our experimental work.
  - d. Continue pasture trials with Sudan, alfalfa, rape and oats, winter wheat and winter rye seeded in the spring and spring rye as compared to dry lot for the growing out of young pigs.
  - e. Carry the pigs in dry lot trials after the pasture season closes until ready for market.

### **C. GRASS AND LEGUME INVESTIGATIONS:**

1. Expand our grass and legume nurseries to include any new species that may seem desirable.
2. Expand our trials on different species of grass, grass mixtures, legumes and legume and grass mixtures for both hay and pasture.
3. Initiate grazing trials with native grass at Pyramid Park.
4. Initiate trials on the renovation of old stands of grass, to be started in 1952 on crested wheatgrass sod.
5. Continue and expand our trials with fertilizer on old stands of grasses and legumes.

### **AGRONOMY FARM**

#### **IMPROVEMENT PROGRAM**

We did some improving, remodeling, and construction work this year which is not easy when you consider that besides limited sales funds, all of the money for such work must be taken out of a maintenance budget, since no appropriations were made for any of these projects.

We started a long range program of improving the Agronomy Farm, adjusting it as a part of the overall program of the Dickinson Experiment Station by initiating the following projects:

1. Contouring the old pasture and several small lots adjoining which gave us 44.3 acres of contour strip cropping. This was signed up under the PMA program for a soil conserving payment. This acreage will be used for the production of feed for our livestock and will be part of the rotation along with the acreage on the livestock farm. Our main crops for feed must be corn, oats, and barley. In 1952 all of the land used for feed production on both farms will be under the supervision of the Agronomy Department for the following reasons:
  - a. Make the most efficient use of labor, which constitutes our largest operating expense.
  - b. Will put all of our farm machinery under one foreman, who will be responsible for every piece of machinery used in the field, which will reduce the cost of upkeep.
2. We removed three rows of ash, elm, and box elders on the north and west of our shelterbelt. The acreage was replanted to Colorado blue spruce and ponderosa pine to prove a better windbreak for our orchard. We got an excellent stand and what few replacements are necessary are available in our spruce and pine nurseries
3. We started another small apple orchard west of the mess house, to be developed in conjunction with the Horticulture Department of the North Dakota Agricultural College.
4. Removed the wood, lumber and junk which had been piled in the tree planting on the hill north of the farmstead, which will be renovated in the spring. An acreage south of that planting to extend the trees to the main shelterbelt was prepared for planting 8 rows of trees in 1952.
5. Reshingled the roofs on the main house and the mess house with asphalt shingles at a cost of \$968. This was a job which could not be delayed any longer because of the condition of both roofs.
6. Removed a Russian olive hedge south of the main house to provide a better view of the cedar planting to the south of the hedge.
7. Trimmed the Russian olive hedge to just above the ground level between the main house and the road, which came back in excellent fashion this summer.
8. Took out the two cedars next to the entrance of the main house and replaced them with two small Colorado blue spruce which will be kept trimmed. The hedge and vines were also trimmed back.
9. Added to our evergreen nursery with transplants from the Soil Conservation Nursery at Mandan, which included Douglas fir for the first time, along with Colorado blue spruce, cedar and ponderosa pine.
10. Painted the shingles red on the machine shed and workshop, both well houses, and the seed house, which is in line with our program of painting our buildings white with red roofs. We gave the machine shed one coat of white paint when our painting project was drawn to a close by the weather about October 15.
11. Twenty-five loads of scoria were hauled on the roads for their general improvement.

### IMPROVEMENTS RECOMMENDED

In 1952 we have several projects which should be completed at the Agronomy Farm which I am listing in what I feel is their order of importance:

1. Remodeling the kitchen in the main house to make it modern and redecorating the downstairs.
2. Painting buildings white where painting is needed.
3. Remodeling the old barn which is now used as a machine shed, making an up to date seed house. This can be done with a minimum of cost and will be our next major building project.
4. Replacing all dead Colorado blue spruce and ponderosa pine in our new plantings.
5. Build a new fence on the west side of the Agronomy Farm.
6. Paint posts white on the fence around the weather station and along the road running to the west line from the farmstead.

### LIVESTOCK IMPROVEMENT PROGRAM

The Livestock Farm is in need of changes which will improve its general appearance. While some improvements have been made, much needs to be done to give it the appearance of an Experiment Station. The following projects were completed in 1951.

1. One of the machine sheds was moved to what we thought was a satisfactory site with good drainage, and remodeled into a hog house. Another granary which was mouse infested to the point of being barely usable, was moved up to the hog house and made into a feed grinding and mixing plant. The following shows total cost of this project:

	HOG HOUSE	FEED HOUSE
Lumber, Posts & Material	91.06	264.15
Labor	314.75	286.50
Gates	450.52	
Cement	340.67	170.33
Miscellaneous	13.75	45.00
Iron	----	----
Roofing	----	----
	<u>1210.75</u>	<u>765.98</u>

2. In order to carry two additional lots of cows on winter feeding trials and put our steers on fattening rations, it was necessary to construct four additional lots. An open cattle shed 100 feet long and 20 feet wide was built, which was divided by constructing four lots 25 feet wide extending approximately 80 in length. The following table shows the total cost of this project:

	<b>CATTLE SHED</b>	<b>CATTLE LOTS</b>
Lumber, Posts & Material	941.26	467.00
Labor	213.95	152.80
Iron	78.09	38.90
Roofing	130.00	
Timbertox	20.00	
	<u>\$ 1383.30</u>	<u>\$ 658.70</u>

3. In order to make water available in these four additional cattle lots and at the hog house, it was necessary to connect on to our water line at the old cattle lots and extend this line through the new cattle lots up to the hog house. This was done at a cost of approximately \$232.59.
4. It was necessary to bring the electricity from the scale house to the new hog house and feed house at a cost of approximately \$250.00.
5. At the main barn where we kept two lots of calves on winter trials last year we made an additional lot. This gives us two lots for steers and one for exercising the dairy cattle and saddle horses. This job was done at a minimum cost of labor and material which will not exceed \$50.00.
6. Two small buildings we had at the livestock farm 8 x 12 feet, were placed 4 feet apart and made into a brooder house 12 x 20 feet, at a cost of approximately \$225.00. This includes labor, all the lumber we needed to purchase, including boards for a double floor with paper between.
7. We remodeled our poultry house, making a model poultry house. The following table shows the total cost of this job:

<b>POULTRY HOUSE</b>	
Lumber & Material	373.49
Labor	186.00
	<u>\$ 559.49</u>

8. A machine shop which was located quite close to the dwelling was moved in line with the poultry house, put on a good concrete floor and divided into a machine shop and feed mixing house for the poultry plant. The following table gives a total cost of our poultry feed house in conjunction with our machine shop:

<b>POULTRY FEED HOUSE</b>	
Labor	50.00
Cement	100.37
	<u>\$ 150.37</u>

9. We hauled about 35 loads of scoria for improving the roads on the Livestock Farm.

10. Painted the roofs on the hog house, feed house, poultry feed house, poultry house, granary, garage and brooder house red and gave the hog house one coat of white paint before we were forced to stop because of the weather.
11. Getting our foundation stock for the hog project cost us as follows:
  - a. Three Durocs, a boar for \$100 and 2 sows to be exchanged for two Hamprace sows when we have them available.
  - b. Two Hamprace sows \$186.48 and a boar for \$90.
  - c. Two purebred Yorkshire sows \$180 and a boar for \$100.
12. This year we purchased 73 feeder pigs for \$758.78. These pigs were used in our pasture trials. Two of them never did come along very well and finally died from inflammation resulting from worm capsules. We saved out 12 of these gilts for raising our feeder pigs next year and the remaining animals have been put on feed to be marketed when they reach approximately 225 lbs. in weight.
13. This year we put in force the contract with the Soil Conservation Service to use the Pyramid Park for grazing trials. We grazed our herd on the Pyramid Park for four months. We were able to put the park in conditions for grazing at a cost of \$26.95, the price of a hand pump. Besides this we had two men spend one day fence repairing. We had absolutely no trouble with our herd during the entire summer. As a means of providing an additional water supply we constructed a dugout, which at 17¢ a cubic yard, cost us \$214.20

This was surveyed by the Soil Conservation Service and has an excellent drainage area. While our well was entirely satisfactory and held out during the summer, we plan to use the dugout when our cattle are first taken down to the park next summer, which will eliminate the need for keeping a pump and engine in operating condition at least during the early part of the grazing period.

It was necessary to hire a man for four months to look after our herd. We paid him \$75.00 a month for checking the herd each day, pumping water and riding the fence at regular intervals. It was not necessary during the entire four months for us to make a special trip to Pyramid Park because of any emergency that arose, since the man we employed took care of everything in stride and didn't bother us with any of his minor problems.

This year we obtained a registered brand H<sub>x</sub> on the left rib with which all of our cattle are going to be branded next spring before they are taken out to range. While we have several brands on the animals, none of them were registered and it is our belief that we should never take our herd out to graze unless they have registered brands, to reduce the prospect of a visit by rustlers to a minimum.

We have several important projects to be completed at the Livestock Farm next year and I am going to list some of these in what I feel are their order of importance.

1. Put things in order at the farmstead to give it the appearance of an Agricultural Experiment Station.
2. Select a parking lot in the most desirable location for 1952.
3. Build additional hog fences.
4. Contour strip farm the rolling acreage tilled on the livestock farm.
5. Paint all of the buildings white needing paint in 1952.

Beginning on December 1<sup>st</sup> of last year we have had a regular weekly news release and starting August 1<sup>st</sup> of this year we have a regular weekly radio program with the Stark County Extension Agent on Thursday of each week from 12:35 to 12:45. The following list covers the news releases from December 1, 1950 to November 15, 1951:

<b>Date</b>	<b>Title</b>	<b>Author</b>
<b>1950:</b>		
Dec. 4	Bradford Knapp to Attend Dickinson Livestock Meeting December 11	Raymond Douglas
Dec. 12	Cattle Wintering Trials That Have Been Undertaken at Dickinson Experiment Station	Larkin Langford
Dec. 19	Discard Red Durum	Tom Conlon
Dec. 26	Feeding Minerals Helps Keep Livestock Healthy	Raymond Douglas
<b>1951:</b>		
Jan. 2	Turkeys, Like Cattle, Respond to Good Feed and Care	Larkin Langford
Jan. 9	Area Farmers Pick Top Grain Varieties	Thomas Conlon
Jan. 16	A Beef Cattle Improvement Program	Raymond Douglas
Jan. 23	Beef Cow Wintering Experiment	Larkin Langford
Jan. 30	Order Your Evergreens Early	Thomas Conlon
Feb. 6	Don't Buy Numbered Wheats	Thomas Conlon
Feb. 15	Forage Crops for Western North Dakota	Raymond Douglas
Feb. 22	Turkey Economics	Larkin Langford
Mar. 1	Fallow or Corn Land for Small Grains	Raymond Douglas
Mar. 8	Cereal Silage-1950	Larkin Langford
Mar. 15	Seeding Trials Planned at Dickinson Experiment Station for 1951	Thomas Conlon
Mar. 22	A Green Manure Crop In Western North Dakota	Raymond Douglas
Mar. 29	Start Chicks for the Farm Flock Now	Larkin Langford
Apr. 5	Grain Varieties for 1951	Thomas Conlon
Apr. 12	Best Date for First Tillage Operation of Fallow	Raymond Douglas
Apr. 19	Good Pastures Pay Good Dividends	Larkin Langford
Apr. 26	Sow Flax Early	Thomas Conlon
May 3	Disked Small Grain Stubble for Wheat Production	Raymond Douglas
May 10	Last Year's Grass Has Value	Warren Whitman
May 17	Creep Feed Suckling Pigs on Pasture for Rapid Growth	Larkin Langford
May 24	Winter Wheat Winter Killed at Dickinson Experiment Station	Thomas Conlon
May 31	Grass and Legume Investigations at Dickinson Experiment Station	Raymond Douglas
June 7	Spring Seeded Grasses Get Good Start on Corn Ground	Warren Whitman
June 14	Range Management Students Inspect Grass Work of the Dickinson Experiment Station	Raymond Douglas
June 21	Weed Spraying Completed at the Dickinson Experiment Station	Thomas Conlon
<b>Date</b>	<b>Title</b>	<b>Author</b>
June 28	Crop Rotations and Tillage Practices in Western North Dakota	Raymond Douglas
July 5	Fescue Selections Poor Performers at Dickinson Experiment Station	Warren Whitman
July 12	Give Chickens the Best of Feed and Care to Finish Them for an Early Market	Larkin Langford
July 19	Fruit Crop Prospects Good at Dickinson Experiment Station	Thomas Conlon
July 28	Four Year Rotations in the West River Area	Raymond Douglas
Aug. 2	Old Created Wheatgrass Stand Responds to Nitrogen Fertilizer	Warren Whitman
	Fruit Tour at Dickinson on July 24	Raymond Douglas
Aug. 9	Dickinson Experiment Station Launches a Pig Pasturing Experiment	Larkin Langford
Aug. 16	Barley and Oats Yield Well in Rotation and Tillage Trials at the Dickinson Experiment Station	Thomas Conlon
Aug. 23	Double Disking vs. Spring Moldboard Plowing of Small Grain Stubble	Raymond Douglas
Aug. 30	Time for Early Fall Grass Seeding Now	Warren Whitman

Sept. 6	Pullets in Model Farm Flock are Housed at Five Months of Age-	Larkin Langford
Sept. 13	Popular Wheat Varieties are High Yielders at the Dickinson Experiment Station	Thomas Conlon
Sept. 27	Late Fall Good Time for Grass Seeding	Warren Whitman
Oct. 4	Experimental Cattle are Trailed to Dickinson from Badlands	Larkin Langford
Oct. 11	New Oats Looks Good in Dickinson Experiment Station Trials	Thomas Conlon
Oct. 18	Five and Six Year Crop Rotations in West River Area	Raymond Douglas
Oct. 25	Leafy Grasses Produce Better Quality Hay	Warren Whitman
Nov. 1	Good Feed and Management Will Keep the Laying Flock on the Job all Winter	Larkin Langford
Nov. 8	Barley Yields in the West River Area	Thomas Conlon
Nov. 15	Hog Program at the Dickinson Experiment Station	Raymond Douglas



An effort was made to attend meetings and contact farmers and ranchers wherever possible and the following list shows my official contacts from November 15, 1950 to November 15, 1951:

<b>Date</b>	<b>Meeting</b>	<b>Attendance</b>
Nov. 24	Morton County Breeders Association Burleigh County & McLean County Agents about Field Day	41
Nov. 25	Ward County & McHenry County Agents about Field Day	
Dec. 1	Oliver and Mercer County Agents about Field Day	
Dec. 11	Livestock Field Day, Dickinson	300
Jan. 8-13	Station Conference, Fargo	
Feb. 9	Plans for Annual Farm Institute, New England	
Feb. 22	Farm Institute, Beach	200
Feb. 23	Farm Institute, New England	500
Mar. 5-8	Winter Show, Valley City	
Mar. 15	Vet. Agr. Group, Dickinson	22
Mar. 30	Livestock Meeting, Bowman	120
Apr. 13	West River Livestock, Grain & Hay Show Meeting	16
May 7	High School Group, Experimental Program	25
May 9	High School Group, Future of Agriculture	9
May 12	Campfire Girls, Study Trees	16
May 18	Biology Class, Experimental Program	20
	West River Livestock, Grain & Hay Show Meeting, Dickinson	12
May 19&26	Dickinson State Teachers College Class – Tillage	75
May 23-24	Vet. Agr. Class, Grass, Trees, Lawns	20
June 6-9	N.D. Stockmen's Assn., Fargo	
June 13	Stockmen's Meeting, Beulah	52
June 21	Beulah Vet. Agr. Class, Tour Station	45
June 29	Annual Crop Field Day	500
July 11-12	State Board of Higher Education, Tour of Station	6
July 17	Scranton Civic Club, Tour of Station	40
July 20	U.S. Range Experiment Station, Miles City, Mont.	
July 23	North Central Experiment Station Field Day, Minot	150
July 24	Fruit Tour, Expt. Stn., Frank Dvorak and Henry Biel's Orchards	80
July 25	Dx. Rotary Club, Tour of Station	35
Aug. 3	Dx. Veterans Agr. Class, Tour of Station	70
Aug. 21	Belfield Vet. Agriculture Class, Tour of Station	20
Aug. 24	S.W. District 4-H Club, Tour of Station	47
Aug. 28	Killdeer Vet. Agr. Class, Tour of Station	7
Sept. 8	Stockmen's Assn. Meeting, Watford City	156
Sept. 18	Richardton Lion's Club, Russian Agriculture	25
Sept. 21	Golden Valley Co. Fair, Judge Livestock	200
Sept. 25	Federated Women's Club, Rhame	41
Sept. 26	Dunn County Fair, Judge livestock and talk at Banquet	250
Sept. 29	R.E.A. Annual Meeting, Electricity on the Farm	500
Oct. 1-5	West River Livestock, Hay & Grain Show	4000
Oct. 9	Gen. Agriculture Class, Dickinson State Teachers College	20
Oct. 24	West River Fair Board, Dickinson	20
Nov. 3	Hettinger County Livestock Show & Sale, Banquet, Mott	80
Nov. 8	Adams County Livestock, Show & Sale, Hettinger	200

## **NEW EQUIPMENT AND MACHINERY AT THE DICKINSON EXPERIMENT STATION**

### **I. Machinery Purchased:**

1. A new Allis-Chalmers 8 foot double disk.
2. One new 7 foot John Deere Van Brunt press drill.
3. One new farmhand operated on our Minneapolis U tractor for stacking hay and moving hay and straw.
4. One new John Deere forage chopper which was purchased through a trade-in on our old John Deere, which never worked very successfully. The new chopper was very satisfactory and did an excellent job.
5. At the hog house on the livestock farm we purchased a little giant hammer mill with a mixer and dust catcher and a 2 horse motor for grinding our feed grain. Our bins are of approximately 16 bushel capacity and on rubber so that they can be moved out in the hog house for filling the self feeder, etc.

### **II. Office Equipment Purchased:**

1. Webster-Chicago wire recorder and two small typewriter tables.
2. Fifty pamphlet cases for filing bulletins.
  - a. Small cabinet to hold these cases.

### **III. Machine Shop Equipment Purchased:**

1. Farm size Oxyacetelyne welder
2. Heavy duty floor jack.
3. Heavy duty machinists vice.
4. Press for power press drill.
5. Stationary grinder.

### **IV. Equipment Needed:**

We are in need of the following equipment, some of which should be purchased in 1952 for the proper operation of the Experiment Station:

1. A small power lift duckfoot cultivator to be used in the small plots and for cultivating the shelterbelts and orchards.
2. A new variety thresher. While the old one was remodeled several years ago, it is in such a state of repair that the yields obtained in the variety plots are not accurate. This thresher does not and probably has not for several years threshed out all of the grain produced on the variety trials due to the condition of the cylinder and concave teeth.