INSECTS DON'T PRACTICE BIRTH CONTROL AND GREAT HORDS TAKE A HEAVY TOLL

Four crop hazards - diseases, drought, insects and hail - have been responsible for most crop losses in North Dakota.

Disease control turns mostly to plant breeders for development of disease free crop varieties and N.D. Experiment Station's staffs have done outstanding work in that respect. As new disease resistant crop varieties were developed Extension has cooperated in distribution of seed for increase purposes and the new varieties have been quickly available to farmers in all areas of the state where that crop is grown.

Drought and hail are not controllable but some management practices such as irrigation, crop insurance and planned seed and seed reserves have been urged by Extension to soften their blows.

Insects are an ever present minor crop problem but occasionally build up to become catastrophic. Root worms, cutworms, army worms, leaf hoppers, aphids, midges, potato beetles, crickets, grasshoppers and others have caused annual local area crop losses and Extension has promoted control programs for them. Insect buildup has sometimes occurred very rapidly and done damage before farmers were aware of their presence. Extension entomologists have urged farmers to monitor their crops for insects and be prepared to control them when economic numbers occur.

Most insect problems have been controlled by the individual farmer but vast numbers and mobility of grasshoppers have required several organized area or statewide control programs. Notable among them were the 1934 and 1936 grasshopper hords. Severe droughts greatly magnified movement of grasshoppers from Wyoming, South Dakota, Montana and Canada into North Dakota and federal assistance was needed for their control. A brief summary of the 1934 control program is given here and the 1936 situation and program were very similar to it.

Because the potential grasshopper infestation included several states and the long distance movement of grasshoppers a regional conference to include eight states and the Dominion of Canada was planned in the fall of 1933. Business organizations were greatly concerned about the effect a major grasshopper infestation might have on business and offered to participate. That led to sponsoring of the regional conference at Fargo by the Greater North Dakota Association in November 1933 with approximately 300 in attendance. Severity of the situation prompted a resolution by that group to Congress urging federal funds for an intensive and extensive grasshopper control program within that eight state area.

Extent of Extension's 1933-34 grasshopper control program was reported by the Extension entomologist as follows:

1933-34 ANNUAL REPORT EXTENSION ENTOMOLOGIST F.D.BUTCHER

"The project on insect and rodent control has been conducted as a full-time project for the past year. The Extension entomologist is in charge of the project. During the summer months assistant state leaders in grasshopper control, of the U.S. Department of Agriculture, worked under the direction of the Extension entomologist on the grasshopper control project in North Dakota. There were: Adrian C. Fox, who was on duty from April 10 throughout the season; C.H. Griffith, who was on duty from April 10 throughout the season; E.M. Gregory assisted from April 16 to June 30; L.S. MacDonald was on duty from April 23 to May 31; and S.S. Easter was on duty in North Dakota part of the time during August and September.

"The necessity of the Extension organization in North Dakota to devote most of its time to adjustment programs and emergency programs developing on account of the drought, has made it necessary that the subphases of the insect and rodent control project be practically confined to the control of grasshoppers.

"The phase of the project which was given most consideration during the year was the control of grasshoppers. At the start of the year, the infestation indicated it would involve 5,252,320 acres of crop land in the several counties of the state. The program was set up to organize control work in each county of the state, and to acquaint farmers in each county of the successful methods that might be used for the control of grasshoppers. This part of the goal was realized with well organized control campaigns conducted in each county in North Dakota. Approximately 5,700,000 acres of crops were infested and that entire area was bailed for grasshopper control."
The Grasshopper Menace

Practical certainty of a grasshopper outbreak constitutes a great menace to harvesting a satisfactory crop in 1934. Entomologists predict one of the greatest outbreaks in the history of American agriculture.

Effective control requires two things: funds to purchase bait and direct the campaign; time to thoroughly organize states, counties, townships and local communities. To properly organize the individual counties requires early—immediate —action.

Legislation to provide Federal funds is to be immediately introduced in Congress. The all important work of organization cannot be started until this bill has passed. It is vital that Congress act favorably without delay.

Your assistance in presenting the need for speedy, favorable action to your representatives in Congress is solicited. It is your responsibility—it is your business to bring your views and your desires to the attention of your Congressman and senators.

JANUARY, 1934

Regional Grasshopper Conference
FARGO, NO. DAK.
Nov. 21-22, '33
Gardner Hotel

Call to Order
Opening of Conference—Dr. J. H. Shepperd, Pres. N. D. A. C.
Statement of Purposes of Conference—B. E. Groom

Grasshopper Outlook for 1934
North Dakota—F. L. Butcher, Extension Entomologist
Wyoming—C. L. Corwin, State Entomologist
Montana—A. L. Strand, State Entomologist
Minnesota—A. G. Bopples, State Entomologist
South Dakota—A. L. Ford, Extension Entomologist
Idaho—C. C. Bopples, State Entomologist
Washington—E. L. Chambers, State Entomologist
Nebraska—O. S. Boe, Extension Entomologist

Summary of Survey—Dr. J. H. Parker
Senior Entomologist, U. S. Dept. of Agriculture, Bozeman, Mont.

The Canada Outlook—Dr. R. D. Beld, Dominion Entomologist
Golden Valley County's grasshopper control report is given as an example of county organization for grasshopper controls as set up in most North Dakota counties.

In his Annual Report, Mr. J.C. Russell, Golden Valley County, says:

"GRASSHOPPER CONTROL CAMPAIGN EFFICIENTLY CONDUCTED"

"In the fall of 1933, with the assistance of F.D. Butcher and Robert Shotwell, entomologists connected with the Federal Department of Agriculture, we made a grasshopper egg survey of Golden Valley County. The great quantities of eggs discovered in grass lands adjacent to grain fields, in flax, alfalfa and sweet clover fields, and on idle ground made it certain that this area would suffer an unusually heavy infestation in 1934. Mr. Butcher and Mr. Shotwell predicted further that besides the varieties commonly encountered here there would be new varieties in large numbers.

"Early in April, therefore, the county agent met with the county commissioners to adopt a plan of action against this troublesome pest. The commissioners decided that the county agent should have full charge of the campaign and be directly responsible to them, and that each commissioner should look after details in his own district in cooperation with the county agent. They also called a meeting of the supervisors of every organized township in the county, who voted that each township board should select a man to superintend the work for that township. To expedite the preparation and distribution of the bait a mixing station with a responsible person in charge and assistants when necessary was established in each commissioner's district - one at Golva, one at Sentinel Burte and one at Beach.

"The first bait came ready mixed except for water for adding which we used a cement mixer. Ready mixed bait was inclined to cake in the sack, a condition which we remedied by running it through a feed grinder or hammer mill to break up the chunks.

"Bait that came unmixed was far more satisfactory. Two parts of sawdust, one part of bran and the proper amount of sodium arsenite in nine gallons of water per hundred pounds of the mixture were the proportions used. Results obtained from this formula - we had no molasses this year - were excellent. Since a new lot of young hoppers hatched out whenever a shower wet the soil an inch or so, two sprayings, and in a few localities three, were necessary. Except for the efficient spreading of this poison there would have been no crop here to harvest. Where spreading was delayed the grasshoppers ate both crop and weeds down to the bare earth.
"We had the best of cooperation from everyone. The county commissioners did everything in their power to make the campaign a success; every farmer in the county took special pains to do his part; and the Northern Pacific Railway allowed the use of their cars without demurrage until storage space could be provided.

"The indicated infestation of grasshoppers in North Dakota in 1934 is the most severe and widespread that has been experienced in the state. The tremendous increase in the number of the migratory grasshoppers, particularly in the northern and western part of the state, gives concern that unless effective control work is done, crop damage will be high. It is evident that the farm operators in the state will do a good job of control if it is possible to finance the bait requirements in the different counties. County budgets have necessarily been strained on account of slow tax receipts and increased burdens for relief estimates."

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### SUMMARY OF GRASSHOPPER SURVEY

**North Dakota - 1936**

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<th>County</th>
<th>Average Adult</th>
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Totals for the State ........................................... 13,360 $334,000
INSECTICIDES, WEEDICIDES, RODENTICIDES - PESTICIDES ALL; USE THEM WISELY OR THE E.P.A. MAY CALL

Use of agricultural chemicals greatly increased during the 1950's and soon became a basic part of agricultural production. Little was known or made available concerning the residual effect of many of the commonly used approved chemicals.

Environmental protection was not an issue until the 1950's and then publication of the book "Silent Spring" by Rachel Carson awakened millions of people to potential dangers from use of agricultural chemicals. Federal Food and Drug authorities were besieged with questions and several of the approved chemicals were removed from licensed lists. No effective chemicals had been developed to replace them and some special exceptions had to be made for emergency use of them. Losses of DDT and aldrin were especially difficult for a while.

Extension was kept busy trying to keep up with new chemicals and new regulations and in communicating that information to dealers and to farmers.

Licensing and use of agricultural chemicals has become more strict year after year. Damage and contamination liability has been assessed by courts against chemical companies and chemical users and environmentalists are ever watchful for any infractions of chemical use.

Extension has had a major role in training and certification of pesticide applicators in North Dakota and in May of 1985 that role was clarified and agreed upon as follows:

THE ROLE OF STATE COOPERATIVE EXTENSION IN THE PESTICIDE APPLICATOR TRAINING PROGRAM*

1. Organize and oversee the pesticide applicator training program in each state.
2. Plan and conduct initial training leading to commercial applicator core and major categories certification.
3. Provide private applicator training for both initial certification and recertification, this training conducted principally through county Extension agents; develop appropriate materials (curriculum) and provide Train the Trainer sessions for the agents.
4. Identify and oversee the development of training materials and delivery methods used by instructors in order to assure continued professional quality of instruction.
5. Review all educational programs proposed for continuing certification and make appropriate recommendations to the state lead agency.
6. Work closely with industries and associations in developing training programs:
   A. Initial training where feasible.
   B. Programs for continuing certification.
7. Maintain liaison with the state lead agency and meet formally at least once a year for program review and enhancement.

*Environmental Protection Agency
*Agreed upon at State Cooperative Extension Services (SCES) 5/3/85

Extension Assistant Director, Agriculture and Community Development, Duane Berglund, is coordinator for statewide pesticide training and certification. Training meetings have been held
HOMESTEADERS ON DAKOTA’S BROAD PRAIRIES LONGED FOR THE SIGHT OF BEAUTIFUL TREES

Would you believe that North Dakota had an Extension Forester before it had an Extension Agronomist? Yes, Charles Gillett was first Extension Forester and he started work September 1, 1925 which was nearly two years before E.G. Booth became Extension’s first agronomist. At first thought that may seem peculiar as there were no great forests on the North Dakota plains but that is precisely why a forester was employed. Mr. Gillett’s annual report preface states it quite well as follows:

PREFACE

The Time has come in the development of North Dakota when minds must be turned toward forestry or shelterbelt work. One of the greatest drawbacks in the development of our state is the lack of tree growth. Many of our earliest settlers moved away from North Dakota because of the severe climatic conditions. If North Dakota is to become the country that we desire, attention must be turned toward shelterbelts and tree planting. For this reason this paper has been prepared with the aim of interesting the boys and girls, men and women in the forestry work as it pertains to our prairie state by means of a forestry program. Some suggestions for this program are contained herein.

The chief forestry work in North Dakota is carried on by the North Dakota School of Forestry through its president who is State Forester and the Extension Forester. The State Extension Forester cooperates with the Extension Service at the Agricultural College. These agencies cooperate with the people of the state who desire information in reference to the planting of shelterbelts, their location and land preparation, etc., upon private lands. Both the State Forester and the Extension Forester, situated at the North Dakota School of Forestry, Bottineau, are available and will assist the farmers with their shelterbelt and other forestry problems.

Actually the state provided for a School of Forestry in 1889 and the first Forestry Building was built in Bottineau in 1907. That location was selected because of the opportunity for studying native forests in the Turtle Mountains. Funds were provided in 1913 for a State Forester and a State Forestry Nursery at that school. Purpose of the nursery was to propagate and distribute trees to citizens of North Dakota free of charge except for transportation costs. Several things including lack of funds and World War I resulted in closing of the nursery before it got a good start and it remained closed until 1925.

Passage of the Clarke-McNary Act, June 7, 1924, provided for funds for teaching, demonstrating and
propagating of trees. It included work with the
general public and resulted in an agreement between
the School of Forestry and the Extension Service to
employ an Extension Forester as follows:

NAME OF PROJECT: Farm Forestry
LEADER: Extension Forester
HEADQUARTERS: State School of Forestry,
         Bottineau
DATE EFFECTIVE: September 1, 1925
LEGAL
AUTHORITY: Section 5 of the Clarke-
McNary Act of June 7, 1924,
the Smith-Lever Act, and
State and Federal laws
appropriating funds for
Extension work in forestry.

OBJECT:
To assist owners of farms in
establishing, improving, and
renewing woodlands,
shelterbelts, windbreaks, and
other valuable forest growth,
in growing and renewing
useful timber crops and in
marketing and utilizing the
same.

METHOD OF
PROCEDURE:
Demonstrations illustrating
better forestry practices will
be established in cooperation
with the county Extension
agent, which will be
supplemented by field
meetings, exhibits, personal
conferences, lectures,
correspondence, publications
and articles for the press.

ORGANIZATION:
One or more Extension
Foresters will be employed to
lead the work in the state.
The Extension Forester
serving as the leader of this
project will be responsible to
the Director of Extension for
his field activities and for
results secured. The subject
matter taught will be such as
is mutually acceptable to the
U.S. Forest Service, the Land
Grant College and the State
School of Forestry."

L.S. Matthew September 1, 1928 - September 30, 1931
John Taylor December 1, 1931 - September 30, 1933
O.W. Hanson October 16, 1933 - April 11, 1934
D.D. Baldwin April 16, 1934 - November 30, 1935
Victor Freeman July 7, 1936 - August 18, 1936
Walter Paul October 22, 1936 - May 12, 1937
John Thompson December 1, 1937 - July 15, 1942
John Zayalsek September 1, 1942 - December 31, 1966
Robert Heintz July 1, 1967 -

Much of that turnover resulted from a shortage of
trained foresters and better employment
opportunities. However, even with that change
pattern the Extension Forester's program fared quite
well. County agents were able to carry on the work
for short time periods and tree demonstration
plantings continued without interruption.

Shelterbelt plantings, maintenance of plantings and
utilization of North Dakota wood products have
been major projects for all Extension foresters. Early
goals were to have at least one new demonstration
planting in every county each year. Later that was
increased to at least four new demonstration
plantings. After Soil Conservation Districts became
involved in tree plantings emphasis was increased on
tree maintenance and utilization.

John S. Thompson was the first Extension forester
to be stationed at NDAC. According to the
recommendations of Mr. Warburton, Director of
Extension, Washington, D.C., the Extension forester's
headquarters were transferred July 1, 1939, from the
North Dakota School of Forestry at Bottineau to the
State Extension Division's headquarters at the
Agricultural College in Fargo.

That transfer brought about a much closer
relationship between the Extension forester and other
Extension specialists, supervisors, and leaders, as well
as with other government agencies. It brought the
project more directly under the supervision of the
State Director of Extension and greatly increased the
possibilities for educational activities in that field.
Located at the Agricultural College, the Extension
forester became better acquainted with current farm
problems and the plans and activities of other
agencies and the farm people in meeting these
problems.

Inclusion of field strip tree plantings in the federal
agricultural conservation program greatly increased
demand for trees. Soil Conservation Districts' tree
plantings increased to about 10,000 acres with 9
million trees per year. Weed control and protection of
trees from fire soon became major projects for the
forester. Chemical preemergence weed control and
several over-the-row mechanical weeder were
demonstrated in all counties in cooperation with
county agents and soil conservation districts. Five
gallon backpack pumps for fire control and using only
water were also demonstrated and subsequently
several hundred farmers purchased such pumps.
Prior to legislation regulating soil management large spoil banks were left around most strip mine sites. Total areas of those sites in North Dakota was about 5,000 acres and the Extension forester regarded them as potential sites for tree plantings and wildlife habitat. Mine owners were contracted and most were quite agreeable to such a program. Planting plans were worked out for demonstration plantings and trees, shrubs, grasses and sweet clover were planted. Spoil banks were mostly raw subsoil and success of those early plantings varied greatly. They did, however, lay groundwork for future plantings and better regulation of soil management at mining sites. Much wildlife is present in areas where those early plantings were successful.

Construction of Garrison and Oahe dams meant flooding of thousands of acres of trees along the Missouri River. Extension forester Zaylskie worked with the Army Corps of Engineers in trying to salvage trees suitable for lumber but the time period was too short and thousands of acres of trees were not harvested. Not even "Paul Bunyan and his Blue Ox, Babe" could have saved all that potential lumber.

Dutch Elm disease eliminated American Elm trees from shelterbelt plantings and caused much concern for existing American Elms. Extension forester Heintz did much educational work towards slowing the spread of that disease until alternate plantings could be established. Early detection and removal of infected trees has done much to slow the spread of Dutch Elm disease.

THE WOODED AREAS OF NORTH DAKOTA

by

Charles A. Gillett

Extension Forester

"It is the common conception among those unfamiliar with the state, that North Dakota, lying in the Great Plains and Prairie Regions, is a vast gently rolling area, without a tree, grazed by buffalo, and roamed by the red-skinned Indian. This idea might have been conveyed through the geographies, through western pioneer stories, or by means of other sources, but regardless of where it came from, many have been misled.

"It is true that there are places, and many too, where one can look for miles without seeing a tree. But there are others where one familiar with the forests of the east could picture oneself in second growth hardwood forests of the Adirondacks, of the Catskills, of the Green Mountains, and of other places. Forestry in North Dakota is very interesting and no one know how important, because in North Dakota there is lack of trees and great opportunities are offered for planting and experimental work.

"Lewis and Clark, so well known to history because of their famous expedition through the western part of our country, give us first knowledge concerning the woods of North Dakota. This knowledge can be found in their reports of their expedition, 1804-1806. The forested area which was reported by the earlier explorers has undergone many changes since their first contact with the pioneers. Fires set by Indians and settlers caused a great diminution of trees. The loss of forests by fire, together with the large acreage demoted by the cutting of thousands of cords of wood for the steamboats that plied the Missouri River, awakened an interest for their replacement as early as 1870. Information gathered from an old fuel dealer on the Missouri shows that from 30 to 40 steamboats would pass a given point a day during years of heaviest traffic. Each steamboat would burn from 25 to 30 cords of cottonwood during 24 steaming hours. 900 cords or more a day were burned, and it is easy to see how the forested area along the Missouri was soon reduced. Resin was used to help burn the green cottonwood. According to inhabitants of the Missouri River Valley most of this wood was cut in winter because of the thickness of the mosquitoes in summer. As much as eight dollars a cord was charged for this wood.

"In so far as is known, North Dakota was never a densely wooded state but where extensive woods were noted by the earlier explorers, later pioneers found but a meager supply. The pioneers who came to North Dakota had been born and reared in a country where trees grew and these people were not accustomed to the barreness of the soil. Many tried to plant seed trees brought from the east, others sent for seedlings, and as the tree planting idea became more general, it was supposed that an increase in forested areas would bring more favorable climatic conditions.

"Agitation for tree planting was made as early as 1866 in Congress which finally resulted in the Timber Culture Acts of 1873 and 74, with later amendments. By these acts 160 acres of land were given free if a definite number of acres of trees were planted and kept in condition for 10 years. This resulted in a great deal of fraud, but much good came from it. These plantings dot the eastern half of North Dakota today and are known as "timber claims."

"The next tree planting aid of interest was when Congress, in 1913, provided that the Department of Agriculture establish the Northern Great Plains Field Station at Mandan. One of its departments is that of growing, distributing, and experimenting with trees suitable to this region.

"Several fire laws have been made but are not in effect. These laws were made with the aim of reducing the loss from prairie and brush fires. The state provided for a State School of Forestry in 1889 and for a State Nursery in 1913. After being closed for a number of years, the School was re-opened and the nursery re-established in September 1925."
FARMSTEADS AND GARDENS
TIDY AND NEAT
GIVE BEAUTY FOR EYES AND
FOOD TO EAT

Better farm homes and better family living have been
continuous North Dakota Extension projects. Much
work has been done through Homemaker's and 4-H
Clubs and some clubs have sponsored community
improvement projects. Whole community interest and
participation have been promoted and farm families
have been recruited to sign up and do their part. Most
projects set for about three or four months completion
starting in May or June and ending in September or
October.

Projects often started and concluded with a potluck
picnic and tour to view and photograph participating
farmsteads before any work was started and after the
work was completed. These were primarily pick-up,
clean-up and fix-up projects and didn't involve much
money but did greatly improve many farmsteads.

Extension County Agents and Home Economists and
State Specialists in Horticulture, Agricultural
Engineering and Home Living have worked with
thousands of North Dakota farm and city families in
planning and layout of farmsteads, yards and home
improvements. Demands for assistance with yard
problems have made it expedient to place horticulturists
at Fargo and Grand Forks primarily to give assistance
to city residents.

WNAX radio station at Yankton, South Dakota
promoted a three year, five state farmstead
improvement contest starting in July 1947. States
included in their contest were North and South
Dakota, Nebraska, Iowa and Minnesota. During the
three years of that contest 220 North Dakota
farmsteads located in 31 North Dakota counties were
entered and the Irwin Froiland farmstead in Griggs
County, North Dakota was selected as the three year,
five state winner. Totally, Froiland's competed against
1,689 other farm families in 243 counties.

All 220 North Dakota participants made substantial
improvements in their farmsteads and generated
much community interest. Extension Horticulturist
Harry Graves and Extension Home Management
Specialist, Florence P. Day, gave all 220 participants
much assistance and used their farmsteads to promote
greater farmstead improvement work.

Along with farmstead improvement, Graves
promoted home gardens and farm fruit plantings. He
worked with county staffs in organizing demonstration
gardens and helped with garden tours where garden
layout, plant varieties, garden tools and garden
chemicals were discussed. Many demonstration gardens
were sponsored through Homemaker's clubs and gardening
was one of their study projects.

Extension horticulturists have prepared updated
circulars each year and they have been among the
most in demand of Extension circulars.

Fruit tree plantings were strongly promoted and
demonstrated. Graves worked with Oscar H. Will
Nursery at Bismarck in setting up packets of apple
and plum varieties suitable for North Dakota. Those
packets of about five to nine trees were made
available through county Extension offices at a
nominal price and served as demonstration plantings.
Weather had long been considered as the greatest
hazard to growing fruit in North Dakota but rabbits
and mice proved to be more of a hazard than
weather. Several hundred of those plantings were
made and have served to show fruit can be grown in
North Dakota.

Extension horticulturists have been executive
secretary for the North Dakota Horticulture Society
and through that organization have promoted annual
tours and fruit shows. Many Society members have
had demonstration gardens, orchards or flower
plantings and done much to promote horticulture
development in North Dakota.

Requests for assistance with planning, landscaping
care of farm and home yards have greatly
exceeded the Extension horticulturist's capacity to
answer. Special workshops have been conducted to
train Extension county staff members for that work.
Overlay yard and landscaping books and slide sets
have been provided and county staff members do well
with them.
MANY THINGS THAT ARE NOT CLEAR CAN BE SOLVED BY AN AG ENGINEER

R.C. Miller is the name signed to the first North Dakota Extension Agricultural Engineer's annual report. It reported work done in 1924 and Mr. Miller had worked six months at one-quarter time and six months at one-third time. He was also responsible for college teaching and for Experiment Station work. Was he busy? His annual report would indicate he didn't have much time for mischief.

Miller's work was almost entirely in response to written requests and much of it was to supply information to county agents so they could handle it. His work projects for the year were divided into five categories as follows:

1. Construction of trench and pit silos
2. Construction of straw sheds
3. More efficient grain threshing and cleaning
4. Remodeling old and construction of new buildings
5. Construction of farm irrigation systems

All of those projects were tied in with his Experiment Station work. Conditions around open unsheltered prairie homesteads were quite different from other areas where trees abounded. Construction had to be modified to meet those conditions.

Mr. Miller had a goal of 30 trench silos to be constructed in North Dakota in 1924. Up to that time only two were known to exist in the state and his goal seemed quite optimistic. He prepared a circular #62 - "Trench Silos for North Dakota" and more than 3,000 copies were requested by farmers. He conducted many demonstrations for construction and covering of the silos.

Was he too optimistic? No, he didn't know the power of county agents' persuasion. Their reports showed that 195 trench silos were constructed in their counties during 1924. Undoubtedly others were constructed in non-agent counties.

Straw sheds were designed mostly for sheep but quite a few were constructed for pigs, poultry and non-milking cattle. They provided cheap shelter and made it possible for many farmers who couldn't finance barns to have livestock.

Remodeling of old buildings and plans for new buildings were numerous and that has continued to be a never-ending agricultural engineering project.

Experiment Station and Extension Agricultural Engineers from seven midwestern states started during the 1930's to work together to design and test farm structures suitable for their seven states' area. States involved were North Dakota, South Dakota, Nebraska, Kansas, Iowa, Minnesota and Wisconsin.

As structures were approved blueprint plans of them were made and exchanged between those states. That caused some problems so to facilitate handling of the plans a non-profit organization named the Midwest Plan Service was established. Midwest Plan Service reproduces all plans and makes them available at cost to all who want them.

North Dakota Agricultural Engineers have been very active in that program and did much research with structures for potato storage, grain handling and storage, loose housing for livestock, pole type barns, wide span rafters and poultry housing.

Wide span rafters became popular and many lumber yards started prefabricating them. Some lumber dealers thought the rafter bracing was excessive and omitted some braces in an effort to cut prices. Some of those rafters failed under excessive snow loads and those dealers tried to pass the blame on to the agricultural engineers. It was, however, quickly shown that failure to include all bracing was the cause of failure. Properly constructed rafters used in neighboring buildings and similar snow loads did not fail.

Midwest Plan Service has been successful in providing economical, efficient and well adapted farm structures' plans to thousands of farmers. Its success has resulted in other states joining with it and groups of some other states have formed similar services. Farmers who have used the plans have saved much labor and money by the accurate bill of materials provided with each set of plans.

Livestock equipment and building models have been on display at several hundred meetings, institutes and fairs.
Not much work was done in either grain threshing and cleaning or irrigation although quite a few requests for help were received. Miller's time was much overworked without those two projects and county agents were supplied information and left to their own resource in those projects.

Extension agricultural engineers' time remained on a one-third basis until October 1927 when R.W. Oberlin took over on a one-half time basis and Miller took on more Experiment Station work. Mr. Oberlin was able to expand the work to include "farm power and machinery" but working on a one-half time basis was not nearly enough to satisfy all requests for assistance.

November 1, 1928 Extension agricultural engineering leaped to a full time position but even on a full time basis that work was spread across the state thinner than ice after the first frost. Oberlin continued as agriculture engineer until September 30, 1929 when C.L. Hamilton took over.

Much of the work during that period and for several years thereafter was with the transition of farm power from horses to farm tractors. Horses were on their way out and a last gasp effort was made to revive their use by making bigger and bigger team hitches. Big team hitch demonstrations were much in demand and were well attended. Quire a few farmers did adapt to big hitches for a few years but most took the easier but more expensive route and bought tractors.

Two day economic conferences were set up in each county starting in 1929. Ten to twelve counties were organized each year as time permitted. Purpose of those conferences was to review local farm and family situations and then make recommendations for improvement. Those who attended were separated into several committees including one to consider farm power and machinery. Committee members took their assignments seriously and presented practical and worthwhile recommendations. A composite of recommendations from all counties was then reviewed.
and used as a basis for planning statewide Extension programs and activities.

Oberlin's last annual report dated September, 1929, states that,

"Since November 1, 1928, full time of one man has been devoted to Extension work in Agricultural Engineering. Prior to that time, only half time was devoted to this work.

"The principal problems in Extension work for the past ten months have been:

1. Farm power and machinery
2. Farm buildings
3. Home conveniences

The work done will be reported under these headings."

**SUMMARY OF ACTIVITIES**

**(Extension Engineer Only)**

**1928-29**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total days in office</td>
<td>130</td>
</tr>
<tr>
<td>Total days in field</td>
<td>94</td>
</tr>
<tr>
<td>Days in counties having agents</td>
<td>92</td>
</tr>
<tr>
<td>Days in counties not having agents</td>
<td>2</td>
</tr>
<tr>
<td>Number counties visited</td>
<td>16</td>
</tr>
<tr>
<td>Number visits to all counties</td>
<td>34</td>
</tr>
<tr>
<td>Highest number days in one county</td>
<td>4</td>
</tr>
<tr>
<td>Total number meetings</td>
<td>37</td>
</tr>
<tr>
<td>Total attendance at meetings</td>
<td>27,206</td>
</tr>
<tr>
<td>Total number result demonstrations</td>
<td>23</td>
</tr>
<tr>
<td>Number radio talk shows</td>
<td>3</td>
</tr>
<tr>
<td>Number of counties</td>
<td></td>
</tr>
<tr>
<td>major phase of project conducted</td>
<td>20</td>
</tr>
<tr>
<td>Number stock blueprints sent out</td>
<td>216</td>
</tr>
</tbody>
</table>

They were divided as follows:

- Sheep barn: 16
- Poultry house: 46
- Hay "roll-in": 7
- Hog house: 27
- Brooder house: 7
- Septic tank: 38
- Barns: 34
- Cow stall: 2
- Number of bulletins passed out: 1,629
- Number of inquiries answered: 313

As follows:

- Big hitch: 23
- Cold storage: 3
- Concrete: 20
- Blueprints: 20
- Drainage: 20
- Silos: 5
- Home conveniences: 91

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**CHANGES IN THE STATE EXTENSION ORGANIZATION AS IT RELATES TO THE SUBJECT MATTER LINE OF WORK CONCERNED.**

**WATER IS A STAFF OF LIFE WITHOUT IT THERE IS ENDLESS STRIFE**

Many areas of North Dakota have had severe problems in supplying suitable and adequate water for both livestock and household needs. Much well water is light chocolate to very dark colored caused by lignite coal slack veins through which it flows. It left a heavy scum when used for cooking and made even the most careful clothes washing look worse than "ring around the collar."

Extension conducted many demonstrations and answered hundreds of questions on how to precipitate out much of that water color but it was not practical for a whole farm family washing. Commercial water treatment systems did much to correct that problem.

Inadequate water supply was a more difficult problem and many farm homes had to have water storage tanks and haul water for household use.

Federal funds for community water supplies were granted to many small towns starting in the 1950's and that was followed by federal funds made available for loans to rural water cooperatives. The idea of pipelines for transporting water from a good water source to individual farms seemed "far fetched" and like rural electric and rural telephone cooperatives required much study and organization.

Extension agents worked with local people in conducting meetings to discuss and organize water cooperatives. They kept maps and membership applications at their offices and gave much assistance to getting rural water cooperatives underway.

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**WHO HAS SEEN A MORE BEAUTIFUL SIGHT THAN LIGHTED FARMSTEADS EVERY NIGHT?**

Rural electrification has been briefly mentioned but it deserves much more emphasis under Agricultural Engineering. No other single development can compare with its impact on farm family living and elimination of hand labor. Lighting systems, pressure water systems, milking machines and coolers, feed processing, grain handling and dozens of electric appliances and hand tools brought farm families out of their "dark age" into a new way of life.
Selection, use and care of electric motors were topics of discussion for several hundred meetings and exhibits.

All of that didn’t just happen over night. Extension worked hard to “sell” and to help organize Rural Electric Cooperatives. Extension’s early efforts in rural electrification started with promotion of home made six volt wind electric plants described in Experiment Station circular #58. More than 10,000 copies of that circular were distributed during an eleven month period in 1935-36. Even as late as that time it was generally thought that long distances between farms would preclude rural electrification loans for much of North Dakota. REA fieldmen had already made preliminary surveys of some areas and pronounced them unsound for line service. Individual farm electric plants appeared to be their only means for electric service and soon electric generator windmill towers dominated many farmsteads. Most systems were 32 volts and electric appliances were much restricted.

National REA policy changes required that service must be made available to even sparcely settled areas and that opened all of North Dakota for organization of Rural Electric Cooperatives. Many farmers who had either wind or engine powered generators were reluctant to join a Rural Electric Cooperative and sign up for high line service. That slowed construction of many lines. Membership applications contained a clause requiring the member to use at least a minimum amount of electricity each month and although the minimum bill was only $3.50 to $7.50 a month it seemed like a lot of money to some farmers.

Organization of RE Cooperatives was just the beginning of rural electrification work. The next big job was to help plan farm and home wiring systems for both present and future use. Most farm families were quite conservative in planning use of electricity. Few farm homes or other buildings were adequately wired for 110 volt current and most existing wiring had to be taken out and replaced. There was a great shortage of qualified wiring contractors and most contractors were too busy to do much planning with individual families. Extension prepared circulars, wiring models and wiring planning guides which were discussed and demonstrated in cooperation with Rural Electric Cooperatives’ staffs throughout their territories. Innumerable requests for assistance have been answered by personal contacts, letters, telephone and circulars. North Dakota farm families have not only “seen the light” but are also greatly profiting from its “powerful twin”, the electric motor.

Continuously Extension has provided service in utilization of electricity. Guidance in selection, use and care of electric motors and appliances has been a topic of discussion at innumerable meetings. Homemakers club members and 4-H club members have had several projects dealing with electric appliances and safety precautions when using or working around electricity.
MANY A FARMER HAS HAD THE DREAM OF WATERING CROPS FROM A FLOWING STREAM

Nearly every North Dakotan has a little irrigationist blood as witnessed by the innumerable lawn and garden waterings. Some are more enthusiastic or adventurous and have a few irrigated acres and some are downright serious irrigators with as much as 1,500 acres or more getting water.

Extension has struggled with irrigation since the 1920's but didn't get seriously involved until the State Water Conservation Commission was formed and an irrigationist, W.H. Farmer, was jointly employed starting April 5, 1937. At that time only three large projects and a few scattered small projects were operating. Cooperating with the State Water Conservation Commission, which was also just organized, 31 projects were completed for the first year's irrigation and 54 more were in the process of development. By 1938, 203 projects had been visited to judge feasibility for development and 78 were aided directly to irrigate fields averaging 30 acres in size.

History of irrigation in North Dakota shows extreme up and down trends. First published data on irrigation in North Dakota are found in reports of 1889 which show that 445 acres were under irrigation.

By 1914 this had increased to 6,174 acres. According to reports received from various county auditors, there were 15,908 acres under irrigation in North Dakota during 1935. Of this, 14,355 acres were in McKenzie County in the Lower Yellowstone Irrigation Project and 400 acres were in Williams County. The remaining 1,142 acres were scattered in 14 other counties.

Mr. Farmer left North Dakota Extension in 1941 and irrigation responsibility was assumed jointly by other Extension staff members until D.J. McLelland was employed in 1950.

Missouri River development generated great enthusiasm for irrigation but political actions and broken promises have about worn out that enthusiasm. Irrigation development has been slow in North Dakota and much of it has been with water from drilled wells. Irrigated acreage much more than doubled between 1975 and 1984 but it still covered only about one-half of one percent of the total state cropland. Goal for irrigation from Missouri River water was at least six percent of cropland but prospects for even one-fourth that amount seemed slim by 1985.

Total irrigated acreage in North Dakota during 1985 was about 175,000 acres involving about 800 farmers. Where it goes from there is anyone's guess.
BEWARE! WATER BANDITS MAY BE NEARBY TO OBTAIN IT THEY MAY CHEAT AND LIE

One of the most controversial projects in North Dakota's history has been the construction of the Garrison Dam and the projected Missouri Water Diversion Project. Garrison is one of several multipurpose structures proposed and built to control and utilize Missouri River water. Flood control, energy generation, municipal water supply, irrigation and recreation were projected as benefits which would offset the loss to inundation of many thousands acres of prime Missouri Valley farm land and many homes and farmstead sites.

One of the bigger carrots dangled by the planners was potential irrigation of 1.5 million or more acres through construction of a Missouri River Diversion Project. Plans for this project were well underway by the Army Corps of Engineers and the Bureau of Reclamation during the 1930's but were delayed by WWII. Resumption of plans in the mid 1940's meant that some means of informing farm families of this project had to be devised and Extension was asked to assist. Irrigation potentials were discussed and plans for irrigation demonstration farms were set up. Farmer advisory committees were selected and demonstration farms were established near Upham and Sheldon and at the State Training School at Mandan.

Daniel J. McClellan, Extension Water Use Specialist, worked extensively with the Bureau of Reclamation and local soil conservation districts in setting up cropping and management operations for the demonstration farms. He also worked with county agents in conducting meetings and tours of the demonstration farms. There was great enthusiasm for irrigation from many farmers but also strong opposition from others who had large acreages of potentially irrigable land and were faced with a 160 to 320 acre authorization limitation. Utilization of water for irrigation was to be administered through organized irrigation districts and assistance was given for both the Fort Clark District in Mercer and Oliver Counties and the Heart Butte district in Grant and Morton Counties. Both of these districts were organized on the basis of flood or row type irrigation just before the time that sprinkler systems were being introduced and sprinklers greatly changed the development of those districts.

During the 1960's ground water well irrigation demonstration plots were established near Oakes and at the Carrington Experiment Station and Extension agents publicized and organized farmer groups for tours and result meetings and demonstrations of those projects. There is a large potential for irrigation in North Dakota but its development will be slow and Extension will undoubtedly continue its part in that development. A big limitation to irrigation is North Dakota's short growing season and the market demand for longer season crops.

UNLESS OF YOUR SOIL YOU GET FONDER IT IS APT TO START TO WANDER

Black blizzards of the 1930's dimaxed more than a decade of farm problems and spelled financial doom for thousands of North Dakota farm families. Those dark days extended from Texas to Canada and from the Rocky Mountains to the Appalachians. Billions of tons of fertile soil went "with the winds to play" or "floated merrily down the streams" and unfortunately much is still going that way. Who was the soils keeper?

Oh! Don't point your finger at me! Every Tom, Dick and Harry lets his soil blow. How could I stop mine when it wanted to go! Wandering soil had long been a problem in North Dakota but it took the black blizzards of the 1930's to awaken the nation and the states and the individual farmers to their responsibilities for keeping their soil at home. Several USDA agencies had responsibilities and dabbled in soil conservation work but their efforts were uncoordinated and relatively ineffective. Land use patterns had to be changed and it was time to work together to get it done. A joint meeting between the USDA action agencies and the Land Grant colleges held at Mount Weather, Virginia, July 7 and 8, 1938 resulted in a coordination agreement. That joint agreement known as the Mount Weather Agreement outlined provisions for coordinating efforts of Extension and the several USDA action agencies towards soil and water management and conservation. The impact of the Mount Weather Agreement was to inform, inspire and assist people on a local community basis to assess their local soil and water use and management situations and then develop plans and actions to adjust them for best soil and water conservation. That led to a program named "Land Use Planning" and it was headed up in North Dakota by H.W. Herbison, Planning Leader. Mr. Herbison was a farm product and had several years as a county agent. He had the enthusiasm of a traveling salesman, a hide thick enough to withstand any deriders and an endless optimism.
In compliance with the Mount Weather Agreement a State Agricultural Land Use Advisory Council had been set up to assure the cooperation of each agency and a unified plan of action. Members of that Council were:

Director of Extension - Chairman
Director of Experiment Station
Chairman of A.A.A. State Committee
S.C.S. State Coordinator
F.S.A. State Director
Land Use Planning Specialist of BAE
Representatives of Forest Service
Other State and Federal officials responsible for management of land use programs in the State
Farm men and women (one from each type of farming area in the state

In addition coordinating committees were set up in each county and actual planning groups or committees were established on a community basis.

Membership of those committees included:
County committee - consisting of:
Farm people (10 or more - substantial majority in the committee)
County agent (non voting secretary)
A.A.A. member
Rural Rehabilitation supervisor
Other state and federal officials in the county who have responsibility for agricultural land use programs; e.g., Soil Conservation Service project supervisor.
Community Planning Groups or Committees - consisting of:
Representative farm men and women

The task of this entire organization, working together, was to work out a long time land use plan that would serve as a guide to a more stable agriculture in the future.

Objectives of the 1939 Plan of Work in Land Use

1. For a majority of the counties in the state, to organize county and community committees and to conduct meetings to acquaint the people with the nature of the project and to outline the work which is expected to be done and to indicate the responsibilities of all the groups and agencies involved in the work.
2. To assemble basic information, preferably on a county and township basis, to be used as background information to uncover the problems which are too often obscured because we cannot see the trees because of the forest, so to speak.
3. To intensify the work in a number of counties (6) to the point where rather specific recommendations can be made with respect to an appropriate land use adjustment.
4. To select one county as a "unified" program county where the degree of intensity of work therein would develop to the "action program" stage.
5. Incidental to the other objectives is the bringing together of the various agencies for cooperative action in developing the needed land use adjustments.

"The methods of procedure to be followed to accomplish the objectives of the program were set forth in a USDA publication named "County Land Use Planning Work Outline #1" and made available to each committee. They required considerable amending to meet each communities situation.

"There were two main objectives in the land use work of the County Agricultural Planning Committees in 1938:
1. To locate on a map and to describe the areas within the county where different kinds of land use adjustments are needed, so that some of the federal and state programs can be coordinated and more effectively applied.
2. To bring farmers themselves into closer contact with certain problems which affect parts of their counties.

"To accomplish these objectives the County Agricultural Planning Committees seemed the logical group to do this work. It was naturally important that informed local people participate to locate the areas properly and describe them correctly. They have had an intimate acquaintance with the local situations. They have been a part of some of the important programs. They can probably do a better job of interpreting the needs of their communities than anyone else. And, perhaps, more important, is the fact that the needed adjustments will not be made without an actively interested local public. It was recognized that informed leadership was essential. There is no better way to develop this type of leadership than to have those who will do the leading participate in the planning of the adjustments." It was deemed advisable to have other local people participate in the work — County assessors and collectors and their deputies, county surveyors and engineers, local abstractors, bankers and businessmen."

Mr. Hersbison got the program orientation and training of Extension personnel well underway in 1938. His report for the first six months of 1939 showed good progress as follows:

"The joint statement agreed to at this conference outlined an organization for adequate agricultural land planning. It included provision for correlating efforts of the Extension division and the several action programs of the USDA throughout the
In the preparation of basic data on county bases and in number of meetings held and in number of farmers participating, the present project is more comprehensive than any thus far undertaken in North Dakota. Although it is too early to make an accounting of the results, the following table sets forth the extent to which work has been done in the counties for the period January 1 to July 1, 1939:

<table>
<thead>
<tr>
<th>County</th>
<th>Total No. Community Meetings Held</th>
<th>Total No. Committee Meetings Held</th>
<th>Total No. Other Meetings On Land Use</th>
<th>Percentage Illustrative Material Prepared and Ready for use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowman</td>
<td>13</td>
<td>1</td>
<td>19</td>
<td>90%</td>
</tr>
<tr>
<td>Burke</td>
<td>1</td>
<td>25</td>
<td>22</td>
<td>60%</td>
</tr>
<tr>
<td>Burleigh</td>
<td>1</td>
<td>169</td>
<td>27</td>
<td>90%</td>
</tr>
<tr>
<td>Cavalier</td>
<td>0</td>
<td>1</td>
<td>15</td>
<td>60%</td>
</tr>
<tr>
<td>Foster</td>
<td>5</td>
<td>76</td>
<td>15</td>
<td>90%</td>
</tr>
<tr>
<td>Pierce</td>
<td>12</td>
<td>192</td>
<td>17</td>
<td>95%</td>
</tr>
<tr>
<td>Sargent</td>
<td>3</td>
<td>192</td>
<td>57</td>
<td>85%</td>
</tr>
<tr>
<td>Towner</td>
<td>10</td>
<td>291</td>
<td>18</td>
<td>75%</td>
</tr>
<tr>
<td>McKenzie</td>
<td>0</td>
<td>0</td>
<td>16</td>
<td>10%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Intensive Counties</th>
<th>12</th>
<th>1,123</th>
<th>11</th>
<th>266</th>
<th>18</th>
<th>1,473</th>
<th>73% average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ward (unified)</td>
<td>12</td>
<td>870</td>
<td>3</td>
<td>51</td>
<td>52</td>
<td>351</td>
<td>75%</td>
</tr>
</tbody>
</table>

Intensive land use planning continued through 1942 when it was interrupted by WWII and the need for all out production. It was never resumed as such but Extension worked to organize the entire state into soil and water conservation districts. Extension has continued to work with those districts and with all USDA action agencies to accomplish better soil and water management.

Land use planning called for land use action and Extension had already made strong efforts to adapt its programs for best land use. Extension's efforts to help calm the restless land and keep it fertile and productive started by promotion of more farm diversification. Alfalfa, sweetclover, brome grass and crested wheat grass demonstration plots were established and 1914-15 annual reports show that 70,000 pounds of alfalfa seed was distributed to farmers at cost. Some alfalfa varieties were not winter hardy and that led to the organization of the North Dakota Grimm Alfalfa Association to supply the hardy Grimm Alfalfa variety seed to farmers. Agricultural census figures show that alfalfa has been a popular soil protective crop and in 1974 nearly 2 million acres were harvested.

Crested wheatgrass was strongly promoted in the western range area. It was easy to establish and furnished excellent early spring grazing. It did much to stabilize ranching and help to control erosion.

Field tillage demonstrations showing how plant waste materials could be maintained to reduce land blowing were conducted by Extension agricultural engineers and agronomists starting in the 1930's. Machinery dealers were willing cooperators and supplied every type of tillage implement available. Agricultural engineers designed several machines and modified other machines that could be built by farmers to help reduce erosion. Farmer attendance at
demonstrations was excellent and they were quick to adopt soil conserving tillage. Many farmers used their ingenuity to design soil conserving machines and eagerly demonstrated them. Tillage demonstrations have continued whenever conditions or new machine developments warranted them as illustrated by the following news release:

**WILL DEMONSTRATE SOIL MANAGEMENT 1937-38**

"Six demonstrations to acquaint farmers with tillage methods designed to check soil blowing have been arranged by Extension agents in Ramsey, Ward, McLean, McKenzie, Stark and Burleigh Counties in a series beginning May 23 in Devils Lake, the NDAC Extension Service made known this week.

"The schedule for these demonstrations follows: Devils lake, May 23-24; Minot, May 25-26; Garrison, May 27-28; Watford City, May 30-31; Dickinson, June 1-2; and Bismarck, June 3-4. Working with the Extension agents at each meeting will be William J. Leary, Agronomist, and Leo E. Holman, Farm Engineer, of the NDAC Extension Service.

"Actual operation of different types of tillage implements in the field will be demonstrated, thus giving farm operators a chance to see and compare the quality of tillage work done. Adaptation of such common implements as the moldboard plow, field cultivator, corn cultivator, one way disk and disk harrow to improve their effectiveness in controlling erosion will be shown. Crop, soil management and farm implement problems will be taken up and discussed at each demonstration."

The implements and power were furnished through the cooperation of local farmers, local implement dealers, implement branch houses and main offices of implement companies.

The tillage work done demonstrated the following:
- Recommended summer tillage practices
- Methods of conserving soil and moisture
- Methods of changing over ordinary tillage implements for use in emergency control of wind erosion.

Soil management field days included demonstrations for use of many homemade tillage machines for reducing erosion and conserving moisture on the fields.
Results obtained:

-Tillage demonstrations were held in six counties which included all four districts of the state.

-Three thousand farmers and implement dealers attended the demonstrations and were given an opportunity to compare the work of the different types of machines and to decide as to the relative values of the different machines on individual farms. Valuable comments and criticisms were received concerning the different machines.

-The demonstrations showed methods of “changing over” common farm implements for use in the emergency control of wind and water erosion. Farmers were much interested in this particular part of the demonstration because they obtained ideas whereby they could use implements already on the farm for controlling erosion. In many areas economic conditions were such that new types of tillage machinery, for weed and erosion control, could not be purchased. Therefore, the suggested methods for “changing over” common implements gave farmers in this area ideas for preventing their soil from eroding.

Along with land use planning the U.S. Bureau of Land Management started a land inventory and purchase program to help correct some of the mistakes of homestead settlement. Much land that had been homesteaded on a quarter section basis was greatly oversetlled. Land quality and rainfall were insufficient for sustained crop production and that combined with grasshoppers and extreme drought of the 1930's turned those lands into a blowing desert. Taxes were unpaid and much land was being abandoned to the mortgages. Extension, Soil Conservation Service and Farm Security worked with the Bureau of Land Management in executing the purchase of about a half million acres of such land in McKenzie, Golden Valley, Dunn, Billings, Slope, Ransom and Richland Counties. That land was restored to grass and leased back to grazing associations which were organized to administer its use. In that process about 1,000 farms were eliminated and tax bases reduced accordingly. Many adjustments in rural schools, mall routes and roads became necessary because of those changes.

ADAMS COUNTY
1937-38

250 FARMERS ATTEND TILLAGE DEMONSTRATION*

“250 farmers attended the tillage demonstration held in cooperation with Wm. J. Leary, Extension Agronomist, and Leo Holman, Extension Agricultural Engineer.

“Probably the most windy and disagreeable day encountered in 1939 accompanied this demonstration. However, a very well rounded tillage demonstration was carried on at the Elmer Erickson farm two miles west of Hettinger.

“Tillage practices stressed, were straight summerfallow with both ridging and waffling effects, damming listing, duck foot and disk plow operations.

“An implement for instigating a waffling effect on damming listing on a smooth tillage operation was a made over disk. Every other disk was removed. The remaining disks were assembled with top half of first disk cut off, followed by one with the bottom half cut off and repeated for the width of the machine. This implement was, indeed, very interesting to the extent that some cooperators contacted have made such a disk, namely Clifford Solseth of Bucyrus, Henry Texley of Lemmon, and a cooperator from South Dakota. The local implement dealer, O.A. Erlandson, also sold an off center disk which serves the same purpose.”

“Another implement that was used in this tillage demonstration was a regular disk harrow with every other disk removed to make a ridging effect. This practice has been used very extensively to roughen the summer fallow under the AAA program.

“I feel that the tillage demonstration left a good many constructive tillage methods with our cooperators in the county.”

*Adams County Agent’s Annual Report, 1937-38
OH, WHAT A GREAT DELIGHT
INDOOR PLUMBING, DAY AND NIGHT

Days of Chick Sale's favorite pasttime, reviewing the mail order catalogue while seated comfortably in the backyard "john," have all but vanished and Extension is partially to blame for depriving recent generations of that "great pasttime". Extension has been ever mindful of the whole farm family and has focused much effort towards better home living. Rural electrification was not an isolated project but rather was the door opener for many other Extension projects including pressure water systems and indoor plumbing.

Most early rural homes were not planned to include running water or a bathroom and when rural electrification made pressure water systems practical much planning was necessary before it could be installed. It wasn't too difficult to get water into the kitchen but finding room for a bathroom and adding sewage disposal was much more difficult. Many houses required some kind of addition and actually a trend towards building a whole new house was started from that need.

Starting in 1946 county agents, home agents and Extension engineers were besieged with requests for assistance in planning both house remodeling and whole new houses. Whole new farmstead layouts became common with new driveways, shelterbelt planting and often new livestock or grain storage buildings. Lumberyards were ill equipped to give much assistance and had very limited plan blueprints. Extension engineers visited lumber dealers and acquainted them with the Extension midwest plans and most dealers became strong supporters.

Most urgent were plans for remodeling to include bathrooms and sewage disposal systems. Shortage of construction and plumbing materials caused many problems and price "rip offs" were not uncommon. One farmer asked his county agent for help with a septic tank and when the agent arrived at the farm he found that the local dealer had sent a totally untrained person to install the plumbing. All of the soil pipe had been installed but was not connected to the fixtures. It was cast iron pipe with oakum and lead joints and all of it was installed backwards and had to be torn out and done over all at the farmer's expense.

Requests for assistance were too great to handle on an individual basis and Extension met with dealers and planned joint community meetings where home modernization, plumbing and heating were discussed. "Plumbaramas" were held throughout the state over a period of about 10 years and a summary of 1956-57 activities which is quite typical of a years activities is presented from the agricultural engineers annual report.

1956-57

"Twelve Plumbaramas were held. These plumbaramas have been developed as a complete water and sewage disposal system installation demonstration. It is a cooperative effort between the cooperating farmers, the Extension Service, the power supplier, local plumbers, dealers and distributors to encourage well planned pressure water and sewage disposal system installations. The basic steps in Plumbaramas included the selection of a suitable cooperators, division of work to be done by local plumbers on the site, coordination of work to meet the deadline, publicity arrangements, and stationing of competent people at various installations during the day of the demonstration to explain the various design and equipment to those attending. Commercial exhibits were displayed at most of the "plumbaramas".

<table>
<thead>
<tr>
<th>Site</th>
<th>Attendance</th>
<th>Serving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elmer Ronning</td>
<td>137</td>
<td>Divide-Burke</td>
</tr>
<tr>
<td>Homer Smith</td>
<td>60</td>
<td>Ward</td>
</tr>
<tr>
<td>Bert Weisenberger</td>
<td>150</td>
<td>Eddy-Foster-Wells</td>
</tr>
<tr>
<td>Ted Stroh</td>
<td>150</td>
<td>Burleigh</td>
</tr>
<tr>
<td>Bud Brandvick</td>
<td>30</td>
<td>Dunn</td>
</tr>
<tr>
<td>Roy Johnson</td>
<td>225</td>
<td>Morton-Grant-Sioux</td>
</tr>
<tr>
<td>Dallas Hystad</td>
<td>175</td>
<td>McKenzie</td>
</tr>
<tr>
<td>Lee Heinrich</td>
<td>150</td>
<td>Stutsman-Kidder</td>
</tr>
<tr>
<td>Gus Schraeder</td>
<td>175</td>
<td>LaMoure-Stutsman</td>
</tr>
<tr>
<td>Arnold Hanson</td>
<td>125</td>
<td>Stutsman-LaMoure</td>
</tr>
<tr>
<td>Joe Ivanov</td>
<td>62</td>
<td>Logan</td>
</tr>
<tr>
<td>Vincent Rambeck</td>
<td>169</td>
<td>Walsh-Pembina</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,608</td>
<td></td>
</tr>
</tbody>
</table>
Home improvements including selection, use and care of electric appliances to installation of running water and sewage systems kept county agent and Extension Engineer Arthur Schultz busy.
The effect of the “plumbaramas” has been excellent. Practically everyone attending went home with ideas that would make his proposed installation more efficient and more economical. Those attending who had systems had problems that were answered by specialists conducting the demonstration.

“Twenty-eight news stories, 22 radio programs and 6 TV shows were prepared and presented on the various phases of pressure water and sewage disposal systems.

“Seven water and sewage meetings with an attendance of 422 were held in Sargent, Divide, Mountrail and Burke Counties.

“Forty-nine farm calls were made to design pressure water and sewage disposal systems. Seven farm calls were made to discuss trouble and suggest remedies for existing conditions in installed water and sewage systems.

“Extension circular AE-43 “Sewage Disposal Systems for your Farm Home” was revised and distributed. Extension circular AE-61 “An Insulated Stock Watering Tank” was prepared and distributed. Extension circular AE-62 “Water Your Stock Automatically” was prepared and distributed.”

Specific results related to Extension’s efforts with that project show that 44 meetings with a total attendance of 1,243 were held in 1946. During 1948-50 assistance was given for installation of 4,536 new water systems and during 1949 assistance was given with 3,274 septic tank installations.

**WATER SYSTEMS MEETINGS - 1946**

<table>
<thead>
<tr>
<th>District</th>
<th>Number</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cavalier</td>
<td>1</td>
<td>356 (dealers and farmers)</td>
</tr>
<tr>
<td>Pierce</td>
<td>1</td>
<td>55</td>
</tr>
<tr>
<td>Barnes</td>
<td>5</td>
<td>125</td>
</tr>
<tr>
<td>Stutsman</td>
<td>1</td>
<td>110</td>
</tr>
<tr>
<td>Ransom</td>
<td>2</td>
<td>47</td>
</tr>
<tr>
<td>McHenry</td>
<td>4</td>
<td>95</td>
</tr>
<tr>
<td>Mountrail</td>
<td>4</td>
<td>98</td>
</tr>
<tr>
<td>Burke</td>
<td>3</td>
<td>171</td>
</tr>
<tr>
<td>Benson</td>
<td>6</td>
<td>168</td>
</tr>
<tr>
<td>Towner</td>
<td>5</td>
<td>76</td>
</tr>
<tr>
<td>Ward</td>
<td>5</td>
<td>121</td>
</tr>
<tr>
<td>Stark</td>
<td>1</td>
<td>45</td>
</tr>
<tr>
<td>Foster</td>
<td>1</td>
<td>53</td>
</tr>
<tr>
<td>Cass</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>Ramsey</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>44</strong></td>
<td><strong>1,243</strong></td>
</tr>
</tbody>
</table>

**MANY SEWAGE DISPOSAL SYSTEMS INSTALLED - 1949**

That year 3,274 septic tank installations were made. Practically all of the excavation work was done by motor powered dirt moving equipment. Perhaps not over a dozen were excavated by hand. The records from the counties are as follows: (The asterisk * indicates counties having organized crews.) The counties are listed by districts. (x counties are estimates)

**NORTHWEST DISTRICT**

<table>
<thead>
<tr>
<th>County</th>
<th>Installations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benson</td>
<td>157</td>
</tr>
<tr>
<td>Cavalier</td>
<td>25</td>
</tr>
<tr>
<td>Eddy</td>
<td>37</td>
</tr>
<tr>
<td>Foster</td>
<td>20</td>
</tr>
<tr>
<td>Grand Forks</td>
<td>15</td>
</tr>
<tr>
<td>Griggs</td>
<td>50</td>
</tr>
<tr>
<td>Nelson</td>
<td>15</td>
</tr>
<tr>
<td>Pembina</td>
<td>20</td>
</tr>
<tr>
<td>Ramsey</td>
<td>190</td>
</tr>
<tr>
<td>Steele</td>
<td>39</td>
</tr>
<tr>
<td>Towner</td>
<td>95</td>
</tr>
<tr>
<td>Traill</td>
<td>55</td>
</tr>
<tr>
<td>Walsh</td>
<td>50</td>
</tr>
<tr>
<td>Wells</td>
<td>6</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>774</strong></td>
</tr>
</tbody>
</table>

**NORTHEAST DISTRICT**

<table>
<thead>
<tr>
<th>County</th>
<th>Installations</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Bottineau</td>
<td>52</td>
</tr>
<tr>
<td>*Burke</td>
<td>65</td>
</tr>
<tr>
<td>*Divide</td>
<td>42</td>
</tr>
<tr>
<td>*McHenry</td>
<td>112</td>
</tr>
<tr>
<td>*McKenzie</td>
<td>80</td>
</tr>
<tr>
<td>*McLean</td>
<td>36</td>
</tr>
<tr>
<td>*Mountrail</td>
<td>97</td>
</tr>
<tr>
<td>*Pierce</td>
<td>60</td>
</tr>
<tr>
<td>Renville</td>
<td>80</td>
</tr>
<tr>
<td>Rolette</td>
<td>19</td>
</tr>
<tr>
<td>Sheridan</td>
<td>25</td>
</tr>
<tr>
<td>*Ward</td>
<td>75</td>
</tr>
<tr>
<td>*Williams</td>
<td>255</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>998</strong></td>
</tr>
</tbody>
</table>

**SOUTHWEST DISTRICT**

<table>
<thead>
<tr>
<th>County</th>
<th>Installations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnes</td>
<td>40</td>
</tr>
<tr>
<td>Burleigh</td>
<td>25</td>
</tr>
<tr>
<td>*Cass</td>
<td>35</td>
</tr>
<tr>
<td>Dickey</td>
<td>54</td>
</tr>
<tr>
<td>Emmons</td>
<td>26</td>
</tr>
<tr>
<td>*Kidder</td>
<td>150</td>
</tr>
<tr>
<td>*LaMoure</td>
<td>72</td>
</tr>
<tr>
<td>Logan</td>
<td>25</td>
</tr>
<tr>
<td>McIntosh</td>
<td>30</td>
</tr>
<tr>
<td>Ransom</td>
<td>25</td>
</tr>
<tr>
<td>*Richland</td>
<td>185</td>
</tr>
<tr>
<td>*Sargent</td>
<td>150</td>
</tr>
<tr>
<td>*Straitsman</td>
<td>304</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1,171</strong></td>
</tr>
</tbody>
</table>

**SOUTHEAST DISTRICT**

<table>
<thead>
<tr>
<th>County</th>
<th>Installations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams</td>
<td>27</td>
</tr>
<tr>
<td>xBillings</td>
<td>10</td>
</tr>
<tr>
<td>Bowman</td>
<td>20</td>
</tr>
<tr>
<td>Dunn</td>
<td>16</td>
</tr>
<tr>
<td>*Golden Valley</td>
<td>66</td>
</tr>
<tr>
<td>*Grant</td>
<td>30</td>
</tr>
<tr>
<td>*Hettinger</td>
<td>29</td>
</tr>
<tr>
<td>Mercer</td>
<td>12</td>
</tr>
<tr>
<td>Morton</td>
<td>42</td>
</tr>
<tr>
<td>Oliver</td>
<td>27</td>
</tr>
<tr>
<td>xSioux</td>
<td>26</td>
</tr>
<tr>
<td>Slope</td>
<td>16</td>
</tr>
<tr>
<td>*Stark</td>
<td>30</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>331</strong></td>
</tr>
</tbody>
</table>

An interesting incident occurred in 1951 when self-propelled combines were beginning to become popular. At that time they were equipped with just an open air seat.
A young couple with pre-school children and somewhat limited funds was faced with a major decision. It was evident that a new combine was needed and the farmer had his eyes focused on a self-propelled unit. His wife strongly wanted indoor water and plumbing but it appeared as though it would have to wait until the combine was purchased.

The combine would be used 15 to 20 days each year and the indoor plumbing would be used every day. Farm and family goals were discussed and each time the combine came out ahead. Extension Engineer, S.L. Vogel, was helping the county agent at that time and he produced figures showing that the difference in price between an adequate pull-type combine and the same capacity self-propelled unit would be just about equal to the cost of installing water and plumbing. Mrs. farmer was elated but Mr. farmer still had that self-propelled combine gleam in his eyes. After some further discussion Mr. Vogel said, "when the snow is blowing and it's about 20° below zero and you need to go to the bathroom, how do you think it would be sitting on that combine seat." The farmer began to laugh and both farm and family goals were met.

BEFORE TRACTORS
THEY WERE SUPREME
NOTHING WAS NICER
THAN A WELL MATCHED TEAM

B.T. - before tractors - horses dominated a farmers-perimeter. Homesteaders on a quarter section needed at least four good horses and those four horses required 15 to 40 acres for pasture, hay and oats. Horses were a major part of the farm economy and Extension was fully aware of their importance. Draft horse projects were included and popular in 4-H work and numerous circulars on horse selection and care were prepared by specialists. Horse production was a problem on many farms as they were not equipped to care for a stallion and were dependent on a breeding ring or patronize agreement to receive stallion service. Percheron and Belgian breeds were most popular and Extension assisted farmers in setting up breeding rings and securing financing for the purchase of desirable type stallions.

Horse health was a common problem and most veterinarians were called "horse doctors". Their training requirements for many years was a six month course in the treatment of common animal ailments. Most of their work was with horses until the early 30’s and most of their learning was by experience. Extension entered the horse health field mostly through demonstrations for bot-fly control and vaccination against "sleeping sickness". Several bulletins on horse ailments and proper feeding were also prepared.

Most farm machinery was made in four horse size and a driver was required for each four horse team. That was not an efficient use of either horses or drivers and Extension agricultural engineers worked hard to demonstrate ganging of machines together and use of larger hitches so one driver could double or triple work output. Horse numbers were at their peak between 1915 and 1925 when there were about 800,000 head in North Dakota. Big hitches were demonstrated from about 1920 to 1935 and eight horse teams became common in eastern North Dakota. Some farmers used 16-18 horse hitches before tractors made the horse obsolete for farm field work.

County agents assisted with organization of many horse breeding rings and Grant County Agent Theodore Olson was probably the last county agent to give such assistance. Tractors had made much headway towards replacing horses in North Dakota by 1935 but many farmers still preferred horses for some jobs. Thus two groups of Grant County farmers were assisted during the winter of 1935-36 with organization and financing of two horse breeding rings.

Standard loans through the Rural Resettlement Administration furnished the finance for the purchase of two high quality purebred Percheron stallions with definite patronage agreements entered into by forty-six farmers.

Schnell's Marquette 207098, a six year old, black, ton stallion, bred by Henry Christman, of Petrel, North Dakota, was purchased by Ed Fried, Elgin, North Dakota. He secured patronage agreements from twenty-nine neighbors for breeding fifty-six mares. Fifty-three of these mares actually were bred.

"Friend's Community Livestock Production Service" is the name that was given to the breeding ring established by this group of cooperators. The patrons were well satisfied with the stallion and, according to the agreements, again bred their mares to the same stallion in 1937.

Schnell's Lundon 204299, a seven year old, black Percheron, weighing approximately a ton, was purchased by Otto Hintz of the New Leipzig community. Seventeen patronage agreements, involving fifty-eight mares, were entered into by Mr. Hintz. All of the fifty-eight mares were bred and agreements called for breeding mares to the same stallion in 1937. The signers of these agreements formed a breeding ring known as "Hintz Community Livestock Production Service."
SOME THOUGHT AND INGENUITY HAVE SAVED MUCH WORK FOR YOU AND ME

Relatively few farmers in 1985 will remember or know of the hectic farm labor shortages of WWI and WWII. WWI shortage lasted only about one year whereas WWII involved nearly four years of pressure to produce more with the same old machinery and many fewer farm hands. Everyone was expected to do his or her part and men, women and children willingly overworked themselves to keep food flowing to the “front.”

Much hand labor was required at the time for many farm jobs and emphasis was placed on labor saving devices. Farmers are noted for their inventiveness and soon dozens of labor saving schemes and devices appeared and were shared with neighbors.

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
U. S. DEPARTMENT OF AGRICULTURE AND STATE LAND GRANT COLLEGES COOPERATING

BIG HITCH DEMONSTRATION
at L. E. Heaton, Jr., Farm, McKenzie
2 Miles East and 1½ Miles South
WEDNESDAY, JUNE 20, at 2 P.M.

Showing “tying in and bucking back” system that is a more practical arrangement than the use of lines on any team from four horses up.

Teams from 4 to 12 horses driven with absolute safety with two lines.

Any horse broken to a harness can be used.

Demonstration by a man who plowed 20 acres per day all last fall with a 19 horse team.

Come — Don’t Forget the Time and Place
A. R. MIKSEN, County Agent.

In some counties cards like these were sent to all horse users.

Horses-Mules Power-Profit

HORSE ASSOCIATION OF AMERICA
Union Stock Yards
CHICAGO, ILL.

A copy of this bulletin was furnished to each person attending the demonstration.

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
U. S. DEPARTMENT OF AGRICULTURE AND STATE LAND GRANT COLLEGES COOPERATING

N. J. P. S. E. (Horses)
Broughting the “BIG HITCH EXHIBITION”
on the Milo J. Pierson farm, MONDAY, May 21st.
“HORSE JAM”

Get back burning PERSHING-PROHE strut their stuff before deciding against the horse. 4 to 16 horse teams in action!

"Horse Jams"

"Don't Doubt We Ain't Dead Yet!"

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Milt Sloulin and his miniature model of stacker constructed for "use at meetings." This illustrates how an "educator" can get his stuff across to farmers at meetings without lugging around a tractor hook up to a full-sized outfit. Models can be constructed small enough to put in the County Agent's car of almost any of the equipment suitable for demonstration work in the "meeting place" during winter months.

KID STUFF? Maybe! But County Agent Russ Widdifield, of Ransom County, North Dakota, has seen to it that his 4-H Club leaders interest 4-H Club members and their parents in practical labor-saving equipment to reduce manpower needs in haying and harvest operations.

The above picture is one of the "Liberty Livestock Club" (and young friends) looking over a home-made "combination buck and shock sweep" demonstrated and used in Ransom County in 1943. There are many of this type constructed and used with old automobiles throughout the state. It is particularly well adapted for use on rolling land, and well liked for "its load capacity" and ease of handling "after five minutes practice driving."

B.B. Guskjolen, one of Benson County's old timers, has the crop all planted and is building himself a backsaver for the haying just ahead. School is out and he is using the school's tools and the advice of Milt Sloulin engaged in helping our 34 others back of the building as this picture was taken.

"Pointing" of finger and asking questions gets a ready response from this Maddock farmer who has just finished up making his new overshot stacker.
Haying and harvesting are two of the most labor intensive farm operations and replacing the "hired man who wasn't there" was a challenge to agricultural engineers as well as to farmers. Plans and models for homemade tractor-mounted sweepstakes and booster fences and for overshot haytowers were demonstrated in every county. Extensive use was made of those plans as reported by Kidder County Agent Milton Leetun who said that more than 400 such sweepstakes were constructed in that county during the 1943-45 period.

Grain handling was difficult as most farmers were still dependent on the scoop shovel or two handled scoop to keep their grain moving. Agricultural engineers constructed and demonstrated a homebuilt auger type grain mover operated from a power take off. More than 800 of those homemade augers were built in 1943-44 and at war's end commercial versions of them became "best sellers."

A major benefit of many labor saving devices was that they could be operated by the less physically strong farm youth or grandpa's or women. During 1944 alone farmers reported construction of 7,052 units of labor saving equipment that had been demonstrated and plans furnished by Extension. Those pieces of equipment were estimated by farmers to have replaced 18,003 workers that year. During the four year war period the equivalent of 60,000 farm workers were replaced by such devices.

An aftermath of war time farm labor shortages and use of labor saving equipment has been commercial production of numerous labor saving devices. Farmers have become increasingly invention conscious and farm strong back and hand labor has been greatly reduced.

WHEAT CROPS BIGGER THAN EVER BEFORE NEED MORE ROOM FOR THEM TO STORE

North Dakota's 1941 and 1942 wheat crops were much above normal and market grain prices were somewhat depressed. Government wheat loans at about 85% of parity were available for farm stored wheat. That was well above market price and most farmers wanted to take advantage of it. A major problem was the shortage of suitable storage space. Many farms already had bins full of 1940 wheat sealed under government loan and that had to be removed to make room for their new crop.

Federal AAA program officials decided to store wheat forfeited under the loan program at local bin sites. That meant two or more bin sites had to be set up for every county. State AAA officials let contracts for several types of prefabricated grain bins and had them shipped by truck and railroad to bin sites. Local crews had to unload them and set them up. Some bin parts were damaged or missing and it was necessary to check every load and secure replacement parts immediately.

Harvest was underway before most bins arrived and AAA county committeemen delegated responsibility for the bins to the county agent who was their executive secretary. Bin sites had to be leased and crews hired to unload and erect bins. Labor shortages resulted in hiring of many inexperienced high school aged youth and most did a creditable job. Bins ranged from 1,000 bushel to 5,000 bushel capacity and twenty to thirty were erected at each site. Some sites also had ten to twenty steel bins with 2,000 bushel capacity.

As soon as bins were constructed, farmers were scheduled to haul in their 1940 and 1941 forfeited loan grain. That involved having each load weighed and graded at local grain elevators and calculations made for the proper number of bushels for each loan.

Although supervisors were hired for bin construction and handling of grain at the bin sites, county agents still had to devote much time to those programs.

Extension agricultural engineers designed several grain bins for farm storage and during 1941-42 approximately 1,000 such plans were supplied to North Dakota farmers and lumber yards.
Grain storage building built from Midwest Plan.

Shortage of materials slowed construction until after WWII. At that time rural electrification power made it possible to handle grain mechanically and Extension agricultural engineers redesigned grain storage buildings accordingly.

**ODE TO A CHICKEN, A PIG OR A COW? OWED, IT SEEMS IS BETTER SOMEHOW**

Extension has made continuous efforts to improve livestock quality, productivity and profitability and used many different methods towards those ends. Some of the most widely used methods included farmer's livestock institutes, purebred livestock trains, organization of county livestock associations and the North Dakota Livestock Association, organization of dairy herd improvement associations and livestock artificial breeding associations, adult and 4-H livestock judging training meetings and contests, poultry culling demonstrations, organization and supervision of the North Dakota livestock mutual aid corporation, sheep shearing schools and contests, sheep dipping and drenching demonstrations and supervision, beef cattle performance testing, livestock shows and sales, numerous bulletins and mass media articles for specific and general livestock management, feeding, health and marketing.

No separate annual reports were made by Extension livestock specialists until 1924 George J. Baker was state agent in livestock improvement. Mr. Baker continued as Extension animal husbandman until August 15, 1937 when he became acting and later full Extension Director. A review of Mr. Baker's early reports shows seven major emphasis projects as follows:

1. Hogging Off Corn
2. Organization of and Assistance to Livestock Shipping Associations
3. Boys' and Girls' Club Work with Beef Cattle; Sheep and Hogs
4. Improvement of Livestock by the Use of Purebred Sires
5. The Ton Litter Work
6. The State Livestock Breeders' Association
7. Care and Management of Sheep

"The single project which received the greatest amount of attention was the improvement of livestock by the use of purebred sires. Eight purebred sire campaigns were conducted, in which 639 purebred bulls were placed in eight counties in North Dakota. Of these 639 bulls, only 200 head were secured outside of the state.

"Less time was given the Ton Litter Project this year. The result was that a smaller number of ton litters were produced, there being but three to complete the 2000 pounds in 180 days."

It is interesting to note Mr. Baker's statistical report for the year of December 1, 1925 through November 30, 1926 which includes 417 miles by street car and 46 miles by horse and foot. Railroad travel reflects North Dakota road conditions during that era.

**STATISTICAL SUMMARY**

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SIRES ARE HALF
OF THE FLOCKS AND HERDS
THERE NEVER HAVE BEEN
MORE TRUE WORDS

Improved livestock productivity and profit have been continuing goals for Extension but one of the bigger obstacles was difficulty or inability of obtaining adequate sires. Individual owners of small herds and flocks found it difficult to upgrade their animals without inbreeding until the idea for sire exchanges was born during the early 1920's. Several different systems were used successfully under that program. One was a local county program where farmers brought their sires to a central point. There they were graded and inspected by a veterinarian and any inferior or questionable animals were rejected or consigned to market. All sires had to be purebred with marketable papers. Farmers then sold or exchanged sires with each other on a private treaty basis.

An alternative to that system was a multiple county exchange and auction. Sires were assembled at a central point and exchanges made the first day followed by an auction of untraded sires on the next day.

Ram exchanges were conducted somewhat differently. A truckload of good quality rams was assembled and moved from place to place around the state. They could be either purchased or exchanged or farmers could exchange rams between themselves. Sire exchanges were quite popular and did much to upgrade the quality and productivity of North Dakota farm animals. Some counties that did not conduct sire exchanges had purebred livestock sales. Those sales were especially popular for breeders whose herds and flocks were too small for their own private auction and they provided buyers with choices from several different breeders.

Giving all due credit to sire exchanges and purebred sales as methods of improving farm herds it was still a slow process. Too many sires lacked the ability to transmit improvement to their offspring especially in the dairy herds. Sire testing and artificial insemination came along in the late 1940's but there were many skeptics and purebred breeders were afraid that their sire sales would be lost. Minnesota Valley Breeders Association was the first to offer service in North Dakota. Their manager was a former Minnesota county agent named Wally Miller and that background helped his credibility. The first artificial breeding associations in North Dakota were organized by county agents in 1949 and at least one of them, the Glen Ullin Association in Morton County, is still active at this writing. Early associations offered only dairy breed service but before long beef breeds were included.

Stutsman County Agent A.F. Borchert with 1917 Stock Judging team.

H.W. Herbison with 1927 champion team. Maurice Ellingson who later became County Agent in Adams and Stark Counties is holding the banner.

Early county agents used many methods to promote the use of better sires. During the 1920's organization of breeders' associations and bull rings greatly increased the supply of purebred bulls. During 1921-22 six bull rings, including 131 farm herds, bolstered county agents better sire campaigns carried out in 37 counties.

Grand Forks County Agent D.B. Morris' 1921-22 annual report relates a demonstration method used to promote better sires as follows:

"While no "hurrah" campaign has been put on in the way of a better sires campaign this year, a large amount of work has been done in the way of getting farmers to use better sires and continuing the better sire movement started last year. A survey of good purebred bulls for sale in this county shows that there are approximately forty. A few farmers have been induced to secure a good bull now when they can be bought very reasonable."
"One demonstration is being carried on to show the value of a purebred sire. A certain farmer through the efforts of the agent secured a scrub cow three years old and has agreed to breed her to a purebred sire for five years and to keep actual weights of all her calves during this time, to keep all steer calves until three years old and to breed her heifer calves to a purebred sire when they are of breeding age. If this demonstration pans out it will show in a comparative way the value of a good purebred sire in building up a herd."

"This county held fourth place in the “Better Sire -Better Stock” campaign, which is being conducted by the U.S. Department of Agriculture, as to progress for the quarter ending December 31, 1921. Forty-seven farmers were enrolled in the campaign from October 1, 1921 to January 1, 1922. They have agreed to use nothing but purebred sires on their farms hereafter."

A class of 4-H Holstein heifers to be proud of.

Dairy Specialist A.M. Challey with 1926 Champion Dairy Judging team — Erwin Klusmann, Clarence Klusmann and Jerome Stowell all from Morton County.
CO-OPERATIVE EXTENSION WORK IN  
AGRICULTURE AND HOME ECONOMICS

North Dakota Agricultural College  
& U. S. Department of Agriculture  
Cooperating  

State College Station, Fargo, N. Dak.  
September 24, 1940

To Purebred Sheep Breeders:

Two trucks have been lined up to haul the rams in the purebred ram truck sale  
program. The first one starts out October 7 and goes through the southern part  
of the State from east to west, and the second truck starts in Grand Forks County  
on October 9 and works westward. A complete schedule of sales is enclosed. You  
will note there are 32 sales included on this list. If you have rams for sale,  
the thing for you to do is to haul them in to the nearest sale point on this  
schedule. The rams will be picked up at this sale point and those not sold will  
be hauled to other points provided they are of serviceable age and of good quality.

Here are a few things to keep in mind:

1. All rams must be good purebreds. (Fitting and blocking makes a more  
   attractive ram.)

2. All rams one year old or over must be registered with their respective  
breed association and registration papers must be turned in to the man in charge of  
the sales at the time the rams are picked up by the truck.

3. The only charge made for selling rams will be the actual cost involved  
   —such as cost of trucks, feed, advertising, etc. (The more rams sold, the lower  
   will be the cost per head.)

4. When your rams are sold you will receive a check for 75% of the sale  
   price at once. The remaining 25% will be withheld until the sales schedule has  
   been completed and the deductions for selling expenses have been made.

5. Also, in case of ram lambs, this 25% will be withheld until proof is  
   received that these ram lambs have been properly registered under the names of new  
   owners.

The Extension Service is acting as a distributing agency. We are trying to help  
you sell your rams by moving them into areas where new blood is desired or where  
there is an actual shortage of purebred rams. We are trying to serve the commercial  
sheep breeder by making good purebred sires available to him. This is again  
the biggest sale program of its kind undertaken in this State. If it fails, we will  
probably consider a long time before continuing ram truck sales; if it is success-  
ful, it will no doubt continue to be an annual event. Let's all get behind this  
program and advertise, talk to neighbors and friends, and discourage use of scrub  
rams. The entire Extension force is pushing this program. A thousand big posters  
are going out; numerous newspaper articles have been written for release from  
time to time; individual letters will be written to all sheepmen; radio talks are  
being prepared to boost sales still further. Let's make this thing go over with  
a bang!

Very truly yours,

H. B. McLachlin

Extension Animal Husbandman
ALL OF MY CATTLE ARE NOW ON TEST. SOON I WILL KNOW WHICH ONES ARE BEST

From early 1900's to 1940 about one-third of all cattle in North Dakota were milk cows and 90% or more of their milk was marketed as sour cream. Every town boasted of one or more cream buying stations and there were many local creameries which made butter and ice cream and sold whole milk. Every railroad depot platform supported an array of both empty and full cream cans coming from and going to such places as R.E. Cobb, Fairmont, Knors, Mandan Creamery and Produce and North American Creameries. Most milk cows were dual purpose animals producing less than 150 pounds of butterfat and milking only 8 to 10 months a year. Milking was done mostly by hand and was generally a sideline to grain farming. Few farmers knew the productivity of individual cows. There was much opportunity for improvement of milk cows and even the earliest county agents report mention such efforts.

Better Farming Association records indicate that the Leal Cow Testing Association was organized on December 1, 1912 with A.M. Robbins as technician. That was the first cow testing association in North Dakota and 25 herds were included in its original organization. Edgar L. Olsen, who later became Grand Forks County Agent, replaced Robbins as technician on July 1, 1913.

Herd included in that first cow testing association were those of:

- Peter Abrahamson
- Ferdinand Altringer
- H. Carter
- Anton Christ
- August Davidson
- John Davidson
- Joe Pink
- William Fleckinger and
- Robert Clendening
- Robert Flewell
- George Hatch
- Andrew Jons
- Louis Kuhlman
- H.L. Meyers
- T.E. McMillan
- James Murdock
- George Ogleby
- Sam Ogleby
- Fritz Rathke
- Peter Rumer
- George Simpson
- Howard Wilson
- E.R. Fritch
- J.W. Hilborn
- John Kuhlman
- George Medley

The original Leal Cow Testing Association was disbanded as the number of dairy herds in that area decreased. It was replaced by the Barnes County Cow Testing Association and later by the combined Barnes-Strutsman Dairy Cow Testing Association which was still functioning in 1985.

Numerous dairy herd improvement associations have been organized throughout North Dakota but most have not lasted except among purebred breeders who want production records to help boost sale of their surplus animals. Alternatives to official DHIA testing have been offered in such programs as "weigh a day a month" and "owner sampling." Those programs have proven to be more popular and are adequate for farmers to evaluate their own herds. Approximately 12,000 dairy cows were on test in North Dakota in 1985.

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**RAM TRUCK SCHEDULE FOR 1941**

**NORTH TRUCK**

| Oct. 7 | Laramie    | Oct. 8 | Moorton |
| Oct. 8 | Mayville  | Oct. 9 | Forman  |
| Oct. 9 | Cooperstown | Oct. 10 | Lisbon  |
| Oct. 10 | Carrington | Oct. 11 | Valley City |
| Oct. 11 | Menomin | Oct. 12 | Jamestown |
| Oct. 12 | Lakota   | Oct. 13 | Edgerton |
| Oct. 13 | Hamilton | Oct. 14 | Broadus |
| Oct. 14 | Langdon | Oct. 15 | Williston |
| Oct. 15 | Rock Lake| Oct. 16 | Washak |
| Oct. 16 | Collette | Oct. 17 | Linton |
| Oct. 17 | Boone    | Oct. 18 | Steele |
| Oct. 18 | Bagby    | Oct. 19 | Scobey |
| Oct. 19 | Minot    | Oct. 20 | Mandan |
| Oct. 20 | Midian  | Oct. 21 | Turtle Lake |
| Oct. 21 | Mandan  | Oct. 22 | Bismarck |
| Oct. 22 | Williston | Oct. 23 | Glen Ullin |
| Oct. 23 | Watford City | Oct. 24 | Hettinger |

**SOUTH TRUCK**

| Oct. 7 | Williston |
| Oct. 8 | Watford City |

If sales have not been scheduled for your county, please advertise the nearest sales in the adjoining counties. These ram sales are a big job and their success depends primarily on your efforts. There are over 500 rams consigned to the 32 sales and it is going to take a lot of push and advertising to put this thing over right. Details worked out in this office have been just a little lagging due to several hazards, but we have made every effort to give you the best sale points and ram consignments possible.
Most North Dakota towns of 500 or more population had a small local creamery at some time during the 1914-1940 years. Their chief product was butter made from sour cream received from local trade area farmers. Home refrigeration did not exist during much of that period and quality of that cream varied greatly. Buttermakers found it difficult to produce a uniform quality product and their reputations fluctuated accordingly.

County agents and the NDAC Dairy Department received many requests for assistance with dairy problems including quality of dairy products. That led to the employment of North Dakota’s first Extension Dairy Specialist, A.C. Dalberg, on August 1, 1918.

Not much detailed information is available concerning Dalberg’s work but it appears that most of it was with those small creameries. Expense accounts indicate he visited many small town creameries to help them improve their product. It appears that some buttermaking workshops were conducted and that sanitation was a major emphasis topic.

Ice cream was not forgotten but because it was made from sweet milk and cream it did not pose many problems. Dalberg stayed with Extension for just thirteen months and his position was left open for about eighteen months. Morton County Agent, Maxwell Morgan, started work as Extension Dairyman on March 1, 1924 and was the first person to carry that title. Except for the period of September 1, 1934 through September 30, 1938 the North Dakota Extension Dairyman’s position has been well filled. Their testing, culling, breeding, feeding and herd management programs have done much towards helping farmers to nearly triple per cow milk production.

North Dakota milk product’s market changed from mostly sour cream to whole market milk starting in the 1950’s when several cheese plants were opened. Most farmers had to make major changes in order to comply with sanitation and handling standards for manufacturing milk. Few had adequate milk houses or knew proper milk house management. Extension Dairymen and Agricultural Engineers conducted information meetings regarding production of manufacturing milk. They also provided on the farm assistance with plans and problems regarding barn remodeling, milking parlors, loose housing and sanitation.

Federal milk marketing orders starting in the late 1960’s continue to involve Extension Dairymen in statewide information programs. Dairymen in each milk marketing order area are eligible to vote regarding the orders. They need to know the pro’s and con’s of each order proposed. Election concerning an order is conducted by the federal marketing service after information meetings and a public hearing have been completed.

Drought years and government livestock buying programs of 1934-1936 reduced North Dakota cattle numbers by about 300,000 head. That was a rough blow for cattlemen but it had one good point. In the process of herd reduction all of the poorer quality and old cows were culled out and remaining animals were good foundation stock. Farmers and ranchers needed good herd sires but many could not finance the purchase of high quality animals. Extension livestock specialists discussed this with officers of the North Dakota’s Stockmen’s Association and in 1937 they organized the North Dakota Livestock Mutual Aid Corporation for the purpose of helping farmers and ranchers to purchase good quality purebred animals, especially sires. Money in the amount of $150,000 was borrowed through a government agency by the Stockman’s Association and the Extension livestock specialist was named to administer the program. Loans were limited to $200 per animal at 5½% interest. The borrower had to pay the first 25% of the purchase price and the Mutual Aid Corporation would lend money to pay the balance up to $200. Not nearly as many loans were made as had been expected but that program did help in the purchase of about 1,500 bulls, 600 rams, 24 heifers and 6 ewes during times of critical herd rebuilding.

**JOHN HAW’S IDEA BUILT INTO A FINANCE CORPORATION**

“In the fall of 1923, John W. Haw, then county agent leader, conceived the idea that farming in North Dakota would be greatly stabilized and made more secure if the federal government would grant loans on livestock for foundation herds, rather than the making of seed loans each year, which were piling up as an added debt without much chance of
liquidation. He had seen many farmers, who had been assisted by county agents to purchase a small band of ewes, diversify production to the point that they were able to carry on without the burden of repeated county and federal seed loans.

"John Haw, after assembling a large amount of evidence on the profitableness of sheep production as a farm practice, interested Ally Powers of Leonard, North Dakota, who had friends among the bankers and railway executives in Minneapolis and St. Paul. Mr. Powers encouraged John Haw in his idea, and arranged a meeting with Minneapolis and St. Paul business executives at which John presented his idea. The business executives were enthusiastic about the proposal and suggested that Mr. Haw put his proposal in the form of a bill to be presented to Congress. They raised a large sum of money and appointed a committee to present the proposal to leaders in Congress. The committee consisted of A.A.D. Rohn, President of Shovlin, Carpenter, Clark Lumber Company; George Ackerson, Washington Representative of the Minneapolis Tribune, and John W. Haw. John Haw interested Dr. John Lee Coulter, the President of the Agricultural College, who assisted in the preparation of the bill.

"Through one of the Morgan Firms of New York City, the committee got a hearing with Calvin Coolidge, then President of the United States. The President approved the idea and referred the committee to Herbert Hoover, then Secretary of Commerce. Mr. Hoover arranged for the introduction of the bill in the Senate. It was introduced by Senator Peter Norbeck of South Dakota and Senator O.O. Burtness of North Dakota, and was known as the Norbeck-Burtness bill. Hearings were held at which Dr. Coulter, members of the committee, and many others, urged its adoption as a measure to stabilize the agriculture of the northwest. The bill was sometimes referred to as the "Coulter Bill."

"However, the bill failed passage in the Senate because of its sectional nature. Mr. Hoover was not content to let the proposals contained in the Norbeck-Burtness bill drop, because of its failure to pass the Senate. He started with John Haw's original idea of a federal appropriation to make loans for livestock purchases. It had been broadened in the northwest. The depression of 1921 and 1922, and crop failures in the northern half of the plains area had jeopardized the stability of many small banks. Mr. Hoover and the President saw the need for a stable credit situation in the area, which had been hit hard with repeated crop failures, if any great progress was to be made in broadening the agricultural production to include greater livestock production.

"Mr. Hoover then called a number of eastern financiers together with those from Minneapolis, St. Paul and Chicago and proposed that a $10,000,000 corporation be formed and capitalized by subscription, for the purpose of stabilizing the banking situation of the northwest and making loans to farmers at cost to purchase foundation livestock. The corporation was formed adequately capitalized, and $1,000,000 was allocated for livestock loans. The corporation became the Agricultural Credit Corporation, with offices in Minneapolis headed by Charles Wilkins.

"Incident to John Haw's idea of federal loans to purchase livestock, which was built into a ten million dollar corporation, was his employment as Director of Agricultural Development for the Northern Pacific Railroad. Charles Donnelly, President of the Northern Pacific, one of the Minneapolis executives, who was interested in Mr. Haw's proposal, admired Mr. Haw's aggressiveness and his keen knowledge of agricultural conditions in the northwest. Soon after the formation of the Agricultural Credit Corporation, Mr. Donnelly offered John Haw the position of Agricultural Development Agent which he accepted. Later he became Director of the department, July 1924.

*As told by N.D. Gorman

"The Agricultural Credit Corporation solved the long standing problem which stood in the way of Extension's program of importation of livestock - that of financing the purchase of livestock from time of purchase to the time when they were placed on the farm."

During the years from 1924 to 1928, the Extension Service placed from 30,000 to 75,000 western ewes per year with farmers of the state. Those were usually placed in flocks of from fifty to one hundred per farm. This proved to be a popular project and many farmers of the state profited from an enterprise that brought in cash twice a year, a lamb crop and a wool crop.

**PROMISES! PROMISES! SHE'S A GOOD LOOKING COW BUT TIME TO DELIVER HAS COME RIGHT NOW

Farmers and ranchers are paid on the basis of what they have to sell and both quantity and quality affect that income. Beef feeder calves from the same herd and of about the same age have often varied by as much as 100 pounds in weaning weight and that difference represents income to the producer. Some cows would have a heavy calf one year and a much lighter calf another year. Several factors could make that difference but at least part of it could be from inheritance from both the dam and sire.

Dairy herds and dairy sires had long been tested for ability to produce and to transmit productivity to their offspring. Then why couldn't beef herds and
sires be tested for their ability to transmit rate of growth and meat production to their offspring? That thinking resulted in the formation of the North Dakota Beef Cattle Improvement Association. Performance testing of beef herds was started in North Dakota in 1955 by Extension livestock specialist Melvin A. Kirkeide with just a few herds. Two major problems encountered were identification of each cow and her calf and availability of a scale. Mr. Kirkeide hauled a portable scale many thousands of miles until individuals bought their own scales. Identification of cows and calves caused some problems until suitable and lasting ear tags were found.

Herds on test increased steadily each year and by 1985 there were approximately 1,000 herds representing approximately 90,000 cows on performance testing. During the ten year period 1967-1976 the average weaning weight of calves in the test program increased by 21 pounds and further increases have occurred since. It was estimated in 1977 that that gain plus the increase in quality that also occurred contributed an additional 1.2 million dollars of value to the North Dakota beef industry each year.

Mr. Kirkeide was a strong leader in the performance testing program and North Dakota has been a leading state in conducting work. He was given a National Pioneers Award in 1985 by the International Registry Association for his early and continuing work.

WHERE, OH WHERE, DID OUR SHEEP FLOCKS GO? SYNTHETICS AND IMPORTS STOLE THEIR SHOW

Early county agents saw a need for more livestock on most North Dakota farms. Cattle were the popular choice but they were high priced and slow in giving returns. An alternative was sheep and county agents started to promote sheep as early as 1914-15. Annual reports for that year indicate that 15,590 sheep and 3,628 cattle were placed on farms that year.

Sheep promotion continued on through the 1920's and every year 1924-1928 from 30,000 to 70,000 western ewes were placed on North Dakota farms. County agents took orders for the ewes and the Agricultural Credit Corporation helped to finance them. Railroads' agricultural agents helped to locate and transport the ewes to local distribution yards.

Results of county agent promotion of sheep is well illustrated by Nelson County reports of 1923-26. Nelson County sheep numbers totaled 5,690 head in 1923 and 120 farmers had sheep. Those figures increased greatly in 1924 with 230 farmers reporting a total of 13,483 head. Nelson County sheep numbers zoomed to 21,355 in 1925 and 287 farmers then had sheep and in 1926 those numbers increased to 29,105 sheep and 343 sheepmen.

Livestock promotion was not limited to sheep. Both cattle and hogs were also promoted and numbers of both increased greatly during those years. County Agent Leader Gorman's annual report for 1927 comments on the livestock promotion work as follows: "During the years 1924, 1925, and 1926 the Agricultural Credit Corporation working in cooperation with the three railroads and the Extension Service loaned $811,320.08 to 1,444 farmers for sheep purchases. 84,700 sheep were placed with farmers in 354 communities throughout the state. A total of $365,203.78 was loaned to 1,023 farmers to purchase 4,833 cattle in 264 North Dakota communities. This makes a total of about a million and a quarter dollars loaned to North Dakota farmers for the purchase of livestock."

All livestock was placed with the farmer at cost under a 3 year 6% payment contract. Loan applications were screened by local committees set up by county agents and consisted of local farmers and businessmen.
Most North Dakota lambs were in small flocks and carried sufficient flesh for slaughter. Feeder lambs were range lambs mostly from Montana. Farmer feeders fattened out the lambs on a contract at a set price per pound of gain. Farmers had a relatively small investment in their feeding yards and contract lamb feeding became a big late fall enterprise for many RRV farmers.

Breeding ewes were heavily promoted again in 1931 and that year county agents worked with railroad development agents and the Agricultural Credit Corporation in placing 82,165 western ewes with 2,179 North Dakota farmers.

Sheep and wool go together and a brief statement has already been made concerning Extension’s efforts in organizing local pools and the State Wool Growers Association pool. Many county agents were elected as secretary for pools they organized and contributed largely to the operation and success of their respective pools. Many million pounds of wool were marketed through those pools at a substantial gain for most producers.

WOOLEN BLANKETS, SWEATERS AND SOX HAVE THEIR ROOTS IN THOSE SHEEP FLOCKS

Early sheep numbers were mostly in larger flocks and totaled between 250,000 and 300,000 head until about 1920. Extension specialists then strongly promoted small farm sheep flocks and by 1933 sheep numbers had increased to 1,100,000 head. Drought periods 1934-36 did not affect sheep numbers nearly as much as it did cattle numbers but they did greatly increase sheep parasite problems. Sheep “ticks” were a heavy drain on lambs and a practical method for their control was necessary. Portable sheep dipping equipment was designed, built and tested by the Extension agricultural engineer, Leo Holman. Its use was demonstrated around the state in 1937 and subsequently about 80 such units were constructed and used by county livestock improvement associations. They dipped approximately 250,000 sheep each year 1940 through 1946 using Cooper’s powder as the insecticide. It was hard work but it got the job done.

North Dakota received 63 army surplus high pressure decontamination units in 1947 for use in insect and weed control demonstrations. Ten units were mounted on 2½ ton GMC trucks and the others were skid mounted and had to be hauled in local trucks or trailers. Nineteen surplus bomb service trailers were also received for mounting the skid models but they did not work out well.

Units were allocated to counties with the counties paying freight and handling charges. They were used
Portable Sheep Dipping Vat Popular

About 52,000 Sheep Dipped in N. D. Last Year With Portable Equipment

Estimates of the additional income farmers received as a result of these demonstrations have been placed at from two to three million dollars.

Units were used for several years to demonstrate insect and weed control until custom sprayers and individually owned sprayers became common.

Economically, sheep worms were a more serious problem than "ticks" and their control was more difficult. NDAC veterinary department staff members assisted in conducting drenching demonstrations using copper sulfate - nicotine sulfate as one drench and phenothiazine as another drench. 31,000 copies of a bulletin on sheep parasite control were distributed. In 1941, shepherds reported drenching of 66,250 sheep and the combined economic benefit effect of "tick" and worm control was estimated by the testing department to be in excess of $700,000 that year.

OH! OH! MY ACHING BACK TO SHEEP SHEEP THERE IS A KNACK

When total sheep numbers and flock sizes were fairly large itinerant shearers traveled throughout North Dakota and it was relatively easy to hire a flock sheared. Flock sizes and total sheep numbers started to decrease in the late 1930's and itinerant shearers became few and flock owners had to depend on local help to shear their flocks. Many asked county agents to get shearers for them and it soon was evident that few well trained shearers were available. Extension livestock specialists decided to offer sheep shearing schools in an effort to correct that situation. E.S. Bartlett, Chicago Flexible Shaft Company Livestock Specialists, was contacted to assist and in 1941-42 shearing schools were conducted at 20 places with participation by 1,620 4-H members and farm flock owners. A sheep shearing contest was scheduled at the North Dakota Winter Show in March 1942 and 18 of those treeam participated. Shearing schools have been conducted each year but
on a much smaller scale than in 1941-42. Ed Warner, Sunbeam Corporation Livestock Specialist, replaced Mr. Bartlett as instructor and in 1960 North Dakota Extension Animal Husbandman, M.A. Kirkeide, assumed full charge of all shearing schools. Many of the trainees became quite proficient and have earned good seasonal wages besides providing a much needed service to North Dakota sheep raisers.

HETTINGER AND AMIDON BOYS WIN SHEARING CONTEST
(1964 Annual Report - M.A. Kirkeide)

"Four sheep shearing schools were held May 25-28 and the State Sheep Shearing Contest was held at Mandan on May 29.

Approximately 120 shearsers and observers attended the schools and state contest. The schools were held in Kidder, Bottineau, McLean and Morton Counties. The state contest was won by Earl Ehlers, Hettinger and Don Lambourn, Amidon was second. Other participants were Marvin Meser, Mott; George and Even Garnet, Bantry.

Sunbeam Corporation, Chicago, provided the shearing equipment and two men (Ed Warner and Hal Bowman) to assist with the conducting of the schools and the contest. County agents and the associate Extension animal husbandman arranged for the holding of the schools and assisted in instructing those in attendance.

"The first and second place winners from the past two years contest, were present for the school in Morton County. It was very encouraging to note that these four boys are all shearing and are able to shear 100 or more head per day. Some had sheared 4,000 to 5,000 head to date. At least one of the boys is earning money to put himself through college and the others are using the earnings to help establish themselves in farming. In addition, several of the previous years winners are in the shearing business and are making use of the training received at the schools."

EGGS IN FOOD FOR THE TABLE AND TO BUY MUCH MORE GASOLINE FOR THE CAR AND MANY THINGS AT THE STORE

Until about the mid 1940's most North Dakota farm chicken flocks were dual purpose breeds that had the run of the farmstead. Some hens were successful in hiding nests and hatching broods and many broody hens were given a dozen or more eggs to hatch. Kerosene egg incubators and chick brooders were quite commonly used to produce chicks from the farm flock. Day old chicks were widely advertised by commercial hatcheries and many farmers ordered them to be shipped by parcel post from hatcheries several hundred miles away.

In general, chicken and egg production was not very efficient and egg marketing was mostly through the local grocery store.

Throughout that period county agents and Extension poultry specialists strove to improve chicken and egg production through flock culling, sanitation, parasite control, flock confinement, balanced rations and better housing. Flock confinement and better housing were major obstacles. Much work was done by NDAC agricultural engineers in designing practical poultry housing for North Dakota's climate. Insulation and ventilation were major problems. Poultry flock size had to be kept close to the capacity for which the building was designed in order to prevent winter freezing or wetness. Few farms had adequate winter poultry housing and egg production was greatly reduced during winter months. Then local egg prices would often triple or more what they were during summer months. Extension poultrymen, especially J. Earl Cook, were continuously active in promoting better poultry housing. Rural electrification did much in helping with that job.

Care of the farm chicken flock was often delegated to "Mrs. Farmer" or to a family member enrolled in a 4-H poultry project. Much of the Extension poultry work was done through Homemaker's clubs and 4-H clubs.

Prior to 1950 North Dakota had few poultry and egg marketing standards or restrictions.

Standards established at that time made candling and grading of eggs mandatory and thereby increased the cost and time for processing them. Because of that, most grocery stores were forced out of egg buying. In effect it increased the price of eggs to consumers and made marketing of eggs from small poultry flocks more difficult. It increased opportunities for large specialized egg and poultry production and subsequently small farm flock egg production has greatly reduced.

Integration of poultry production with commercial marketing interests greatly reduced the Extension poultryman's workload and on July 1, 1971 that position was combined with the Extension Wildlife Specialist's position. Extension Poultryman, L.J. Mork, held that position until his death in June 1977 and it was not reestablished until July 1, 1983. At that time Eric Bakke was employed as a Wildlife Conservationist without domestic poultry responsibility. North Dakota has not had an Extension poultry specialist since 1977 and poultry questions are referred to the NDSU poultry department.
FROM RULES OF THUMB AND BARNYARD FACTS
HENS THAT LAY EGGS WON'T GET THE AX

From homestead days through the 1940's small poultry flocks were the foundation of farm families' food supplies. Besides furnishing meat and eggs they generally laid enough extra eggs to trade at the local store for other groceries.

Most farmers didn't know how to cull their chicken flocks for laying and a large percentage of their hens were not laying enough eggs to pay for their feed. That situation provided an excellent means for county agents to meet farmers and their culling demonstrations often led to requests for other assistance. Some county agents referred to their culling demonstrations as their "door opener."

Culling showed immediate results and there was no question as to its value in terms of feed saving. That one item by itself saved the flock owners more money than they were paying in local taxes to support county agent work.

Annual reports for 1923 give typical examples of the poultry culling project. That year Burke County Agent, Carl Swanson, conducted 41 culling demonstrations and kept result records for 15 flocks with a total of 1,305 hens. Carl culled out 332 hens and they were penned separately for a week. During that week they laid a total of 183 eggs or about ½ of an egg average per hen. During that same week the 773 retained hens laid 2,012 eggs or about 2½ eggs per hen average. Carl was a "Hero."

Carl later reported that he was somewhat surprised a year later when nearly every one of those flock owners asked him for a repeat performance. Carl said, "I had taught them nothing. Just done a job for them. It taught me a lesson though and now whenever I do any job I do just part of it and make the person learn by finishing it." That is Extension's basic philosophy and purpose - to teach people to do the job themselves.

KEEP ALL ANIMALS IN GOOD HEALTH IF YOU WOULD INCREASE YOUR WEALTH

Livestock health is reflected into a farmers pocketbook. A healthy animal not only produces more but also is not apt to die and be a total loss. During early Extension history it was estimated that annual preventable livestock losses averaged about $3,000 per township or $5,000,000 statewide.

County agents received much pressure to help reduce those losses but had little training in that field. That led to adding an animal health specialist to the Extension staff and veterinary medicine Dr. Don McMahen filled that position 1918 through 1931.

Dr. McMahen estimated that at least 65% of all animal losses to diseases and parasites were preventable through proper sanitation, vaccination, self imposed quarantine and proper disposal of dead animals. He traveled statewide demonstrating those techniques and prepared lessons and demonstrations for Homemaker's clubs and 4-H clubs to use in their communities. He also prepared a number of circulars on prevention and control of livestock diseases and parasites.

Sanitation received major emphasis by McMahen and he developed several demonstrations on different kinds of sanitation. He attended numerous 4-H club meetings and achievement days, county fairs and
North Dakota State Fairs where either he or 4-H members conducted those demonstrations.

Disease and parasite prevention through vaccination, drenching and dipping were demonstrated and taught to 4-H members and at public meetings. Tuberculosis was widespread in cattle and he promoted statewide testing, and culling to knock it out. Worms in sheep and hogs were major health problems and he demonstrated drenching, sanitation and pasture rotation for their control. Poultry disease losses were much higher than for other livestock and Dr. McMahan demonstrated and prepared circulars for sanitation and culling to keep the flocks healthy. His first annual report indicates the great need for control of blackleg, tuberculosis and brucellosis in cattle and cholera in hogs. That year he and county agents conducted 842 demonstrations on livestock vaccination and disease control.

Dr. McMahan’s services were in great demand and monetary benefits from his services were undoubtedly large but after his resignation in 1931 lean Extension budgets left that position unfilled until 1978 when Dr. Kurt Wohlgemuth was employed as Extension Veterinarian.

Extension was not unmindful of livestock health during the 1931-1978 years. Excellent cooperation has existed between Extension, the NDSU Veterinary Department, the North Dakota State Veterinarian and the Bureau of Animal Industry. Animal health demonstrations and testing programs were continued cooperatively and such diseases as tuberculosis, brucellosis, hog cholera and anthrax have been well controlled.

Few practicing veterinarians were available in much of North Dakota prior to WWII and several county agents became quite skilled at teaching, demonstrating and actual emergency treatment of such disorders as milk fever and unnatural births. Kidder County Agent Milton Leetun became especially proficient and was nicknamed “Doc” Leetun by people in that county.

Animal health facilities and staffs changed greatly following WWII when a number of veterinary displaced persons came to North Dakota. They were well trained and some set up animal clinics or animal hospitals where animals could be carefully cared for. Some of those veterinarians were women and some were man and wife teams. North Dakota farmers were not used to women veterinarians and at first were somewhat embarrassed by them. Some amusing incidents occurred and this writer well remembers one which illustrates them.

A farmer came to the office and said he had purchased two Angus bulls but that they weren’t any good and his cows weren’t getting bred. He had tried unsuccessfully to return the bulls which were shortlegged long yearlings to the seller. He wanted to know what he could do. Fertility tests were suggested for the bulls and a man and wife veterinary team contacted and the man veterinarian was scheduled to make the tests. When the time came, the man was very busy and the woman veterinarian went to the farm. The farmer was much embarrassed and refused to let her do it. She went back to their clinic and later she and her husband both came to make the tests. She did all of the work and her husband just presented the bill and took the payment. Both bulls proved to be highly fertile but were just too small to do their job and the farmer’s embarrassment was increased when he had to purchase larger bulls.

Winter sheltered wildlife feeder.

Experiment Station Veterinarian L.A. Schipper and Extension Animal Husbandman George Strum presented livestock health programs both at meetings and for T.V.
DISEASE CONTROL PROJECT

In cooperation with the State Livestock Sanitary Board the county agents have conducted a campaign against Bovine Tuberculosis. The limiting factor in this work has been the lack of funds at the disposal of the Sanitary Board with which to supply veterinarians to fill the demand of the agents. In spite of this lack of funds, 33,552 animals were tested and work is under way to be continued as rapidly as funds will permit.

There were two methods generally used by the agents in conducting this work. Some counties carried on the work in cooperation with the State Livestock Sanitary Board and others in cooperation with the local Veterinarians. In both cases the agent prepared and circulated the publicity, secured the signatures on the agreements and arranged for local committees to transport the veterinarian from farm to farm. The agents kept records of the number of cattle tested and listed the reactors and other information which would assist them in a better analysis of the livestock situation of their counties.

In the western range country blackleg is still a problem and in these counties the agents distributed 14,375 doses of government vaccine. Hog cholera is confined largely to the southeastern counties where general outbreaks were controlled by the agents in which about 5,042 hogs were vaccinated. While contagious abortion is not a serious problem of our breeders, 63 farmers were assisted in the control of this disease.

 Counties Cooperating in Animal Disease Control Work

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Story of a county Testing Project

Foster County

"The foundation for the Tubercular Testing Campaign was laid by newspaper publicity and circular letters. After sufficient interest has been aroused in the various communities local leaders took charge of the work and completed the campaign. In several instances the local leaders made arrangements with the Township Boards to pay the driver to take the veterinarian around in their communities.

10,600 cattle were tested for tuberculosis. Out of this number 342 cattle reacted to the test. It is a very hard matter to determine the value of this work so far as the health standpoint of livestock and human beings is concerned. We presume if there was any accurate way of determining this, the figures would be almost unbelievable. In two instances, tuberculosis had run in the herds so long that the entire herd was infected."

* Extension Livestock Specialist Annual Report 1931-32
Farming, Ranching, and Wildlife in North Dakota

Also assisting in preparing this circular was the late Irving J. Mork, former Extension Wildlife Specialist.

ROBERT H. HEINTZ
Extension Forester

ROBERT L. MORGAN
Chief, Lands and Development Division
North Dakota Game and Fish Department

ERLING PODOLL
Biologist
Soil Conservation Service

The material in this circular was adapted from FS 636, Farming and Pheasants in South Dakota, published by the South Dakota State University Cooperative Extension Service.

Wildlife responds to the way land is used and treated. If a large part of the landscape is managed in a way to benefit wildlife, the response can be dramatic. And many land management practices that affect wildlife may in turn affect agricultural production and economic return.

Agricultural practices can be divided into three categories: Good agricultural practices that benefit both wildlife and the producer; good wildlife practices that benefit wildlife but either incur additional costs or limit returns for the producer; and negative agricultural practices that benefit neither the producer nor wildlife.

There will be specific instances where the groupings of practices listed here will not hold true. However, they are relevant for most situations in North Dakota.
MANY CREATURES MUST USE THE LAND BUT SOMETIMES SOME GET OUT OF HAND

Coyotes and prairies dogs were continual problems for livestockmen and especially sheepmen. Prairie dogs had been entirely uncontrolled and in some areas their towns covered 600 to 1300 acres. Coyotes had been hunted some for their pelts but were virtually uncontrolled. Wildlife specialists say that coyotes invited prairie dogs to dinner but although coyote numbers were great they evidently didn’t have enough prairie dog guests. Coyotes seemed not to like the everyday same old diet of prairie dogs and started looking over the prairie meat counter for some variety. Leg of lamb looked like something they could handle and soon they were steady customers at the lamb counter and occasionally they would visit the beef counter and try out a fresh veal.

Extension agents were asked for help in controlling both of those pests. Early prairie dog control was by use of poison baits. Oats were treated with the poison agent and furnished to the farmer/raisher at cost. Demonstrations on proper use and results of using baits were held with good results. Land purchased by the Federal Land Management Department was especially heavily infested and a five man crew was employed to cover those areas. Subsequently, the Fish and Wildlife Service made supplies of poison bait available for both prairie dogs and gophers.

Undoubtedly coyotes had some of the poisoned prairie dogs for dinner but not enough to greatly reduce coyote numbers. Local mutual aid coyote control associations were formed in some areas and hunters/trappers were employed. Coyote pelts were worth only $1 to $2 so no one was after them for their pelts and their numbers steadily increased.

Federal Fish and Wildlife Service offered their services for coyote control and predator control agents trained by them were employed in several areas. Coyote depredations were transmitted through local county agents offices and their efforts were very effective. No attempt was made to completely exterminate either of those livestock hazards but instead efforts were made to keep them within economic limits.

U.S. Ebner was employed July 1, 1917 through November 30, 1923 as North Dakota Extension’s first and only exclusive Rodent Control Specialist. Other specialists have done rodent control on a part-time basis with their other work but Ebner’s work was confined to rodents, crows and magpie. Field mice, rats flickertail and striped gophers, pocket gophers, prairie dogs, crow and magpie abounded everywhere. No narrative report of his work is available but he did not work full time and there was plenty to do. Even today uncontrolled rodents soon overpopulate and cause substantial damage.

Most counties, until the late 1930’s, paid bounty of 2¢ to 4¢ for striped or flickertail to 10¢ to 20¢ for pocket gopher’s tails. At first most striped and flickertail gopher’s tails were 9 to 7 inches long but after bounty had been paid for awhile, many tails seemed to shrink to just about half that length. Well, in those days a penny bought a lot of candy.

Ebner also served as Ramsey County Agent December 1, 1923 through January 31, 1928.

HAY DAY OR HEYDAY — WHICH ONE, MR. TELLER? ARE YOU A BUYER OR ARE YOU A SELLER?

Many North Dakota county agents might well have been called “hay brokers” during the 1930’s except that they didn’t receive any brokerage fees. Three drought periods and major livestock feed procurement emergencies - 1931, 1934 and 1936 - sidetracked much of their planned programs and kept them in the livestock feeds business.

Although the 1931 drought was not nearly as widespread as those of 1934 and 1936 it was very severe in six counties and necessitated feed imports into 15 other counties. Because of the large area involved, feed procurement and financing were coordinated on a state-wide basis with county agent leader N.D. Gorman in charge. His annual reports for 1931 and 1932 give detailed information of that program and for procurement of seed stocks for 1932 plantings. Excerpts from Gorman’s reports for those years are given here:

“It became known about June 20, 1931 that unless an unusual amount of rain came within a very short time, the northwestern one-fifth of the state would be afflicted with the worst crop failure in the history of the state. Not only was there little hope of a cash crop but the pastures were burned to the extent that there was no feed for the livestock.

“Governor George F. Shafer was apprised of the situation and he immediately started negotiations with Arthur M. Hyde, Secretary of the United States Department of Agriculture, to secure livestock feed loans from the Rehabilitation fund made available by Congress for the disaster area in the south in 1930. Upon the Governor’s request, Secretary Hyde sent his personal representative, Mr. H.H. Brown, to the northwestern area to make an investigation of the drought area. Mrs. Ethel Cooley, Mr. L.L. Twitchell and N.D. Gorman of the Extension Service, accompanied Mr. Brown on his tour of inspection through several of the counties which were in the worst condition. The situation was that twelve counties appeared to be in the drought area. Those counties were: Divide, Burke, Renville, Bottineau, Williams, Ward, McKenzie, Mountrail, McLean,
McHenry, Rolette and Dunn. The western part of Rolette and McHenry and the northern parts of McLean and Dunn were in the severe drought area, while the balance of those counties produced some crops. In those counties designated as in the severe drought area, the investigation showed that there would be absolutely no cash crops grown in most of that area and practically no feed crops.

"A meeting was called jointly by Director Monroe and James Millay of the Greater North Dakota Association, to determine what action to take to meet the emergency. Among those attending the meeting were Governor Shafer, representatives of the Greater North Dakota Association, representatives of the three railroads, several bankers, Fargo Chamber of Commerce, representatives of the various counties in northwestern part of the state, including the Association of Commerce of Minot and representatives of the State College of Agriculture.

"It was decided at this meeting that the problem in the drought area had two distinct phases. One was the care of the families whose reserves were exhausted and who had no crop. The other was that of feeding the livestock that it was necessary to maintain, particularly the milk cows and foundation stock. The meeting was divided into two sections. The section having to do with the feed and pasture for livestock recommended that a committee consisting of Governor Shafer, Senator Nye and Director C.F. Monroe meet Secretary Hyde and request that loans for feed for livestock be made available at once. They further recommended that the Extension Service, through its county Extension agents, find pasture in the eastern area of the state which would be available for the shipment of livestock to pasture, asking that Governor Shafer make application for reduced rates on the shipment of livestock to the eastern section of the state, to be returned after the pasture season or carried through the winter in areas where there was more abundant feed.

"At the request of the Livestock Committee, the Extension division outlined the following plan proposing the appointment of relief directors in each county, a revolving fund to be set up by each of the counties and a central purchasing agency through which to purchase feed for livestock.

"The Boards of County Commissioners in each county were in general charge of the livestock relief work and they appointed county agents as relief directors.

"The following relief directors were appointed: Ben Daggett, County Extension Agent, Ward County; C.F. Bissomter, County Commissioner, Divide County; E.M. Gregory, Extension Agent, Burke County; A.M. Swanson, Renville County; C.A. Fiske, Extension Agent, Mountrail County; Karl Swanson, Extension Agent, Williams County; E.A. Hendrickson, Extension Agent, McKenzie County; A.L. Norling, Extension Agent, McLean County; R.R. Smith, Bottineau County and Merle Kidder, McHenry County.

"The proposal for relief of the livestock situation was as follows:

1. Locating, financing and distributing baled hay for immediate shipment to maintain milk cows in the most critical areas.
2. Locating pastures for rental to ship cattle and sheep on a grazing-in-transit rate and securing funds for freight and pasture rental.
3. Locating hay stumpsage which can be put up for winter to maintain the milk cows in the drought area and securing funds for purchase of stumpsage, cost of putting up hay and freight.

The county agent leader's report continues: "A meeting was held at Minot on July 3 at which time the plan of organization was presented to the Boards of County Commissioners. This meeting was attended by Governor Shafer, Attorney General Morris, Tax Commissioner Acker, Mrs. Cooley, Mr. Twitchell, members of the Boards of County Commissioners, representatives of the Greater North Dakota Association and county agents from the drought section. C.F. Monroe and N.D. Gorman represented the Extension Service. Railroads were also represented by their agricultural development agents.

"The Commissioners approved in general the proposed plan for livestock relief work in the drought area submitted by N.D. Gorman. Governor Shafer stated that the Bank of North Dakota would accept certificates of indebtedness from the counties wishing to create revolving funds for the purchase of feeds.

"Another meeting was held with relief directors a few days later at which time a resolution was adopted asking that N.D. Gorman, representing the Extension Service and Paul Wagner, representing the Greater Northern Railroad, visit each of the Boards of County Commissioners and assist them in the details of setting up a revolving fund.

"As a result of this trip a meeting was called in Minot on the 25th of July at which time the Boards of County Commissioners met and recommended that the Extension Service of the Agricultural College act as a central purchasing agency for those counties which wished to set up a revolving fund.

"Six counties set up revolving funds ranging from $50,000 to $75,000 each. In each county the relief director drew on the funds to purchase feed through the central purchasing agency and sold the feed to the farmer. The relief director also assisted the farmer to get a federal feed loan to pay for the feed.

"Director Monroe of Extension designated the county agent leader's office in general charge of livestock relief work and to act as purchasing agent
for livestock feed and seed for the counties which set up revolving funds. E.W. Norcross of the State Seed Commissioner's office and E.G. Booth, Extension Agronomist, were assigned to the county agent leader's office to assist in the purchase of feed and seed. The Greater North Dakota Association also assisted in the purchase of hay.

"Federal government feed loans were made available from rehabilitation funds to farmers in twenty-one counties. Hay, cotton seed cake and dried pulp was purchased by the Extension Service and shipped on order from the relief directors to the counties where the farmers bought the feed with money borrowed from the government through the feed loan agency.

"From the time the Extension Service was designated as a purchasing agent for the drought counties to when it closed the purchase office in May of 1932, livestock feed was purchased in the amount of 2,028 carloads of hay, 2,941 tons of cotton seed cake and 2,120 tons of dried beet pulp.

"From July in 1931 to April in 1932, 80,951 loans were made to farmers in 21 counties who borrowed $3,025,633.25 to carry their livestock over the winter. It is questionable if most farmers would not have been farther ahead financially had they sold all their livestock as soon as their feed supplies gave out."

Two stories from Gorman's reports signify the magnitude of that hay procurement program and they are included here:

"It was necessary during that fall for the agents to lay in quite a large supply of hay to meet the expected feed needs for the farmers of the county. The writer recalls one occasion where E.M. Gregory, Extension Agent in Burke County, sent an emergency call to my office for help in convincing his commissioners that he did not have too much hay on hand. I was then in charge of the purchases for the drought counties and he stated that the county commissioners had just convened in a regular meeting and when they saw the pile of baled hay he had in the back yard of the courthouse they told him he had more hay than he could ever get rid of. Mr. Gregory said the pile of hay, about the size of the courthouse, frightened the commissioners and they were afraid they would be buried under hay the rest of their lives. I suggested to Paul Wagner that he go to Burke County and help Gregory in a series of meetings to urge farmers to lay in a month's supply of hay thinking we would get Mr. Gregory out of difficulty with his commissioners.

"Less than a week later I was called out of bed to the telephone about one o'clock in the morning. It was Paul Wagner calling from Burke County. He wanted to place an order for four cars of cotton seed cake and two cars of dried beet pulp to be shipped immediately to Burke County. I shouted over the telephone that he had gone to Burke County to move that pile of hay and wanted to know why he was selling cotton seed cake until the hay pile was taken down to a size that would give some peace of mind to the commissioners. Paul Wagner said 'Forget about the hay, it's all out. The farmers want cotton seed cake and beet pulp and a lot more hay too.'

"On another occasion, on visiting McKenzie County, Earl Hendrickson, County Agent, said, as soon as I got into his office - 'have you seen that pile of baled hay that Karl Swanson has piled up on two vacant lots in the center of Williston?' I said I hadn't. He said 'Karl Swanson won't sell that pile of hay if he stays in Williams County all his life. Why Karl has piled up on those two lots higher than the tallest building in Williston. You can see it from five miles out, driving into Williston.' I said since I was going to ask him to drive me to Williston in the afternoon, I would be interested in seeing the pile of hay.

"As we approached Williston that afternoon, Earl Hendrickson assured me we would soon see the monstrous pile of hay stretching up above the buildings of town. We kept a sharp lookout but couldn't see the hay. We drove into Williston and Earl guided me to where two weeks before he had seen the pile of hay. There were two broken bales of hay and some hay scattered over the vacant lots as evidence of the pile Hendrickson thought Karl could never get rid of."

In his report of the relief work during 1931 and to the spring of 1932, the county agent leader said in regard to county agents and relief directors - "The major burden of relief work fell upon the county Extension agent and relief directors in the counties affected. Those men representing the Boards of County Commissioners worked tirelessly to supervise the applications for seed and feed loans. They made estimates of feed and seed needs, they estimated the amount of funds needed for seed and feed loans. They purchased, stored and distributed feed so that the farmer might receive the benefit of the lowest possible cost in securing the necessary feeds. They cooperated with the Red Cross in supplying the needs of families and at the same time they carried quite a lot of educational work. Since July 1st of last year those men have worked early and late to rise to an emergency which seemed almost insurmountable. They deserve the appreciation and recognition of every individual in their respective counties."
ROUNDUP

Russell Ranch

WHEN - Friday, Nov. 19, at 11:30 p.m., 1955
WHERE - Russell Ranch, Owego Twp.
WY - Market Grading Demonstration

J. E. WALLACE - Senior Marketing Specialist of the United States Department of Agriculture will be present and will give a demonstration on sorting cattle into different market grades.

FERRY HEMPHILL - Extension Agent in Marketing, N.D.A.C. will discuss outlook situation on the livestock industry in this state.

R. L. OLSON - Extension Animal Husbandman, N.D.A.C. will give a talk on breeding work and purebred sire work in this state.

HANS EJUGSTAD - Prominent Beef Farmer of Owego Twp. will furnish the "White Faces" to work on.

This is a meeting that every producer of livestock will enjoy. These men know what they are talking about - maybe you can pick up a pointer or two.

Very truly yours,

J. Earl Cook,
County Extension Agent
TO MARKET, TO MARKET, MY CROP TO SELL 'TWAS OF BEST QUALITY, I DID VERY WELL

F.H. Turner, Extension Economist, Market Information, appears to have been the first full time farm marketing specialist on the N.D. Extension staff. O.M. Fuller had been doing some marketing work but his assignment was farm management. Fuller was named acting head of the Extension Agricultural Economics section on October 1, 1930 to replace Rex Willard who had joined USDA in Washington. At that time the federal marketing service was being negotiated. Some special funds were made available and Turner was named as full time marketing specialist. One of Turner's first actions was to meet with the manager of radio station WDAY, Fargo, and work out arrangements for a daily, five days a week, farm market report over that station. Those broadcasts started on October 20, 1930 and covered both livestock and farm crops.

Connections with the Federal Marketing Service leased wire were completed on November 2, 1930 and that greatly expanded Extension's potential to provide market information. Radio stations KFYR-Bismarck, KLPM-Minot, KGCU-Mandan, KPJ-M-Grand Forks, and KDUR-Devils Lake were added to the program and broadcast weekly market summaries.

Mineographed weekly summaries were mailed to more than 2,000 farmers requesting them in 1931 and by November 30 that year 5,950 names were on that mailing list. Many farmers also requested special reports for specific commodities and 6,364 additional weekly reports for hogs, beef cattle, sheep and wool, dairy products, potatoes and poultry and eggs were sent out. During the year December 1, 1930 through November 30, 1931 a total of approximately 280,000 weekly market summaries were sent to farmers and others requesting them.

Success in marketing includes knowing what one has to sell, its class, grade and quality. Many farmers were taking large discounts on wheat because of admixture which could be avoided by using pure quality seed. Extension conducted grain grading schools throughout the state to acquaint farmers with that problem. Those schools included grading of samples for seed as well as for market and farmers were asked to bring in samples of wheat they intended to use for seed. During the 1930's when crops were poor and seed stocks were low, a total of 426 meetings attended by a total of 35,368 farmers were conducted and from farmers' samples of seed stocks 1,110 durum wheat samples were graded. Out of those stocks 594 were recommended as good for seed, 185 were judged suitable for seed only if no better seed could be obtained and 331 were rejected as unfit for seed. Admixture with hard spring wheat was the main reason for rejection. Market price differentials between grades were discussed and farmers were urged to continually check seed stocks. Subsequent to those schools when grain was harvested checks were made at the Minneapolis Federal Grain Grading Laboratory and indications were that substantially less mixed grade wheat was being received from N.D than was received before the schools.

Similar grain grading schools were conducted by H.W. Herbisson when he worked with marketing. Four-H crops judging has also been conducted since early 4-H work as a means of training potential future farmers of the economic importance of using good seed.

Livestock class and grade are equally as important as grain class and grade at marketing time. Starting in July 1962 Extension has conducted livestock marketing meetings to help farmers know what they had to market and to demonstrate how to prepare them for market. Most of those meetings were jointly sponsored by Extension and local livestock buyers and conducted at livestock markets or sales rings. Coffee and donuts were often furnished by the commercial people. Preconditioning of calves for the feedlot and performance testing were usually included in the discussions.

Four-H livestock judging has also been connected with marketing and knowing what one has to sell.

Extension's market information service has fluctuated with the agricultural economy. When markets have been active commercial sources have supplied much information but when markets have been flat or inactive Extension has had more responsibility for that service.

WHEN WE GET TOGETHER AND COOPERATE EXCESSIVE CHARGES GET THE GATE

Prior to daily radio livestock marketing reports farmers had to rely on newspapers for livestock prices and market information. Such information was generally outdated and local livestock buyers took advantage of that situation and purchased livestock at their own price and to the farmers disadvantage.

County agents were aware of that situation and as early as 1915 devoted much time towards organization of Cooperative Livestock Shipping Associations and Farmer's Elevator Associations. Reports for 1917 show that seven livestock shipping associations were organized that year and a Stutsman County Association shipped 150 carloads of livestock during its first year of organization. Success of that Association is indicated by an increase to 281 carloads shipped just two years after it was organized.
County agents and Extension specialists provided know how and guidance but each association elected its own officers, conducted its own business and financed itself.

Success of those associations has varied with the quality of leadership and management provided by their officers. However, regardless of their individual success or failure their collective action continues as a warning to middlemen to keep charges for their services at a reasonable rate.

MARKETING AND NATIONAL FARM POLICY, CAN WE DISCUSS THEM SENSIBLY? NOW WAIT A SECOND, GOLLY GEE, DON'T LAY ALL THE BLAME ON ME

Yes, marketing and national farm policy are very sensitive subjects. Few people are enough unbiased or have background information necessary to discuss these subjects without becoming emotionally upset. Political propagandists, news writers and commentators, farm organization leaders and others criticize these subjects endlessly and the poor little county agent is given the job of presenting them to the local taxpayers. Fortunately county agents have not been left to their own efforts and a cool headed Extension specialist well trained in these subjects has come to their rescue and then left town without overly “tainting” the county agent. If that sounds brash maybe you have never attended a farm marketing or national farm policy discussion meeting when farmers are economically depressed.

National farm policy and marketing of farm products are closely related and greatly affect farmers' bank accounts. Yet, many farmers have failed to become informed of those subjects. Almost from the beginning of Extension strong efforts have been made to keep farm people informed of marketing trends and changes of national farm policy. Farm economic trends and outlook circulars, open discussion meetings and individual farm management help have all been available continuously. Farm account and household account books have been available at nominal fees since the 1920's. Following WWII and the starting of Veterans Farm Training programs, the account books were revised to meet current needs.

Numerous books were reviewed to find one which was thought adaptable to North Dakota. The Kansas book looked good and it was adapted by a committee set up by the Extension Director to consider this problem May 13, 1947. The committee met May 23rd when Mr. Luke Schruben of the Federal Extension Service was present and decided upon the book to adopt.
Each year since the early 1920’s Extension has
offered public policy discussion meetings throughout
the state with fair participation by farmers and
businessmen.

Discussion topics have included:

- The present business and agriculture situation
- The outlook for the present year and several
  years ahead
- Farm production and price support programs
- Social Security and other retirement programs
- Problems of inflation and deflation
- Acquisition of farm land for highways and other
  public use
- Integration or contract farming
- Incorporation of the family farm
- Interest rates and the use of credit
- Principle sources and terms of credit to farmers
- Wartime manpower needs
- Veteran’s training programs

A random review of Extension Economist Harry
Anderson’s annual reports shows that in addition to
conducting public meetings for discussion of outlook
and public policy, much use was made of newspapers,
radio and TV for that purpose. Using 1961-62 as a
fair example, Mr. Anderson prepared outlook and
public policy articles which were used by a total of
122 weekly, semi weekly and daily newspapers, 26
radio stations and 12 TV stations. Three farm
organizations also published Mr. Anderson’s articles
in their official papers and approximately 6,000 copies
of outlook and public policy circulars were distributed
through meetings and direct mail requests. Sets of 15
slides showing situations and trends were prepared for
county agents use.