

school after acceptance, attesting to the high quality of education provided from the entire campus.

In 1976, the first class was admitted to a new two-year program in animal health technology. In 1978, before the first class was graduated, the program was accredited through the American Veterinary Medical Association. Twenty students per year now have the opportunity to receive an accredited program in our area and as they graduate they are providing a valuable pool of trained personnel to assist veterinarians in their prac-

tices and thereby provide a service to the veterinary profession and to the veterinarian's clients.

The last quarter of a century has been a time of progress in the veterinary science department. It has been a time of growth and development with an ever increasing service to the state's economy. Dean Arlon Hazen has been a continuing source of support and encouragement during that time and has been instrumental in strengthening the offerings of the department in research, diagnostics and teaching.

BRANCH STATION CHANGES AND DEVELOPMENT 1957 to 1978

Six branch stations and an agronomy seed farm strategically located around the state are an integral part of the Experiment Station. Each serves a specific need in its area.

As compared to some other states, the manner of funding and operating the branch station system in North Dakota is rather unique. There is autonomy in funding yet there is central administration. Operation is the responsibility of personnel at each branch station yet there are a large number of cooperative uniform crop production experiments conducted at all branch stations. In addition there are numerous other experiments involving the cooperative effort of project leaders on campus with individuals at branch stations as well as between branch stations participating in research of common need. This extensive cooperative effort is not mandated. Rather it results from research workers recognizing common problems that can best be solved by a combined effort using available facilities across the state. The usefulness of information obtained from a broad cross sectional base is obviously of greater value to the farmer than that obtained from only one site.

Branch stations are closely identified with the communities in which they are located. Without exception, communities exhibit a healthy kind of prideful possessiveness of their local experiment station. Without a doubt this stimulates and encourages branch station personnel to perform and manage in a manner that might endorse a view expressed in a quotation from Abraham Lincoln — "I like to see a man proud of the place he lives. I like to see a man live so that his place is proud of him."

The character, growth and effectiveness of branch stations during Arlon Hazen's 22 years as Director have been due in no small measure to his philosophy and the direction he has given. Namely, an effective agricultural research program is only as good as its many parts which include a competent staff, sufficient land, equipment and facilities adequately supported with operating funds and the interest of the people being served. To identify improvements and other changes at the branch stations during Dean Hazen's tenure a brief summary prepared by the superintendent at each location has been prepared.

WILLISTON EXPERIMENT STATION

The Experiment Station at Williston was established in 1907 on 160 acres of land about one mile northeast of the city limits. It was relocated to its present site, about five miles west of Williston, in 1954. The discovery of oil in the Williston Basin in 1951 caused rapid growth of the city and the expansion pushed the city beyond the station boundaries. A citizens group, working with the Board of Higher Education, requested legislation from the 1953 Legislative Assembly to permit the relocation and sale of the old station land. Eighty acres of land was sold at auction to the College Hill Development Association and this money was used to purchase the present 640 acres and to construct the dwellings and service buildings.

The relocation greatly improved the research potential and the services that could be rendered by the Station. The land was more typical of this area, making research findings more meaningful; the larger acreage made a seed increase program possible and service buildings provided room for a seed cleaning plant, machinery storage, offices, and laboratories.

The station continued to grow, not in land size or building numbers but in personnel, technology, research plot technique, and mechanization. In 1957, only three years after relocation, the station had three full time employees, all the buildings completed, shelterbelts planted and the research and seed increase programs well underway. The research program involved 22 trials of various types and one off-station trial at the Deep River Development Farm near Bowbells. In 1977 the station employed six people, two professional personnel and four technicians. The research program had grown to 85 trials covering a wide range of crops, crop management and tillage practices, herbicide use for weed control and five off-station sites.

The great increase in the number of research trials was made possible by improved field plot techniques, mechanization of seeding and harvesting operation, and the use of the computer for statistical analysis of the trials. Like the change to larger and more efficient equipment on the farms in northwestern North Dakota, the station mechanized more operations and it was possible to handle many more trials. Small plots reduced land requirements and made possible more precise trials. A custom built plot seeder replaced the conventional grain drills which were used for many years.

The time required to harvest the small plots was greatly reduced when a small self-propelled combine was purchased to replace the sickle mower and small plot threshing machine. The mower and plot thresher had been a big improvement and time saver over the 8-foot grain binder and a regular 22-inch threshing machine which had been used for many years to harvest the larger plots which were commonly used.

The small plot technique required the use of statistics to determine yield and the validity and precision of the trials. A considerable amount of time was required to calculate the yields and analyze the trials. These calculations were all done by hand with the aid of calculators. With the development of the computer and computer

programs it became only a matter of recording plot yields, putting the data into the computer, and receiving a print out with all the yields. This amounts to a considerable saving in time and elimination of a tedious, laborious job.

The amount of research work being conducted at the station has greatly increased in the past 25 years since it's relocation. New techniques, new equipment, and new methods have made possible this expansion. Although the staff doubled in size, from three to six, the number of research trials had increased by nearly four times. The information and data from the research work have been a part of the technology which has helped the farmers in North Dakota to be leaders in crop production and management.

NORTH CENTRAL EXPERIMENT STATION

Year	Improvement of Change
1958	40'x80' Metal machine storage building 15 acres sold to State Highway Dept. to make Highway 83 a 4-lane road 1 - 1300 bushel steel grain bin 1 - 2200 bushel steel grain bin
1965	2 - 2200 bushel steel grain bins Asphalt on station driveway Remodeled seedhouse with office and laboratory
1969	Jensen evergreens planted (40)
1970	Station received deed on building used by USDA Sawfly Project
1971	New heating system installed in residence and office
1972	Natural gas brought onto station
1973-75	Cooperative Extension Area Resource Agent and secretary located on station
1974	North Prairie Rural Water line buried and reservoir installed on station. Station hooked up to rural water. Northwest District Extension Director and secretary added to Cooperative Extension staff on station
1975	Addition of Agricultural Research Technician III to station staff
1978	Area agronomist joins Cooperative Extension staff on station Agnet terminal installed and used to analyze all research results.

HETTINGER EXPERIMENT STATION

Hettinger Branch Station, primarily involved in sheep research and seed increase of late, has grown in

facilities and program over the past 15 years. First development came with initiation of design for low farm flock size sheep barns that were built, used, remodeled and later blue-printed for on-farm use. In 1970 lambing facilities were enlarged by 50 %.

Next came feed grain storage facilities which replaced some fully depreciated structures. In the early 1970's a multi-purpose building was constructed to be used for the office, garage, seed storage and machinery storage, and also provide restroom facilities. During 1974 the residence was completely remodeled and insulated for fuel savings purposes. This project resulted in two farm research articles concerned with renovation of existing structures. In 1977 additional grain storage was added to facilitate the seed increase program of the Hettinger Station. Also added in 1977 was a hay storage facility.

DICKINSON EXPERIMENT STATION

Physical plant and facility improvement at the Dickinson Station has been slow but steady over the past 20 years.

Feedlot facilities have been increased from the original set of four lots to the present total of 28 lots.

A hospital barn was added as part of the feedlot complex.

A small office was also built at the livestock farm. A grain elevator with storage for both feed and seed was built in 1960.

A machinery storage shed was completed also in 1960.

In 1963 a small frame building was completed for use of the Botany Dept. personnel doing work on range management in Western North Dakota.

Several land transactions since 1956 have involved sales of land to refinery interests, the Dickinson Public School District, Dickinson State College, and the North Dakota State Highway Department. All land sales or transfers have carried the stipulation that all monies accruing were to be used for purchase of replacement land. The several land transactions since 1956 have resulted in a net increase of approximately 800 acres for livestock, grassland and crop production research at Dickinson. The increased acreage was acquired without general fund appropriation.

LANGDON BRANCH STATION

Since the late 1950's, the scope of agricultural research at the Langdon Branch Station has greatly intensified. This increased output can be directly related to expansion of physical facilities and land, addition of personnel, modernization of research equipment, and more intensive use of research land available.

Some major developments at the Langdon Station during the past twenty years are listed below:

1953 Addition of 160 acres of land doubling the size of the Langdon Station.

1961-62 Construction of a modern seedhouse for processing, storage, and distribution of breeder and foundation seed.

1973 Added Research Technician III to station staff.
Completed laboratory addition to seedhouse to house research equipment.

1975-78 Began testing of new "specialty" crops to evaluate potential for more intensive crop rotations in this area.

Research at Langdon relates to crop research and can be grouped into the areas of new variety development and testing; cultural practice production; and production of breeder and foundation seed.

Since 1969 the tillable acres at Langdon have been expanded nearly 20 percent to 255 acres. This was accomplished by removing land from pasture use, and removing and relocating tree plantings. This has allowed for additional field experiments and more seed production. In 1978 more than 50 individual experiments are being conducted.

The addition of modern equipment such as plot combines beginning in 1971 has greatly increased the capabilities of existing personnel. Basic variety trials of ten specialty crops were added since 1975 to meet the response of local and area farmers demanding such information.

CARRINGTON IRRIGATION STATION

Carrington is the newest of the branch stations, having been authorized by the State Legislature in 1957. It came into being to discover the potential of irrigated agriculture in the area planned for development of the Garrison Diversion Project.

There are 588 acres on the station. Of this, 300 acres are irrigated by center-pivot sprinkler systems and 120 acres by surface irrigation. The remaining acreage is farmed as dryland. Water supply is from three 90-foot irrigation wells having a combined capacity of 3600 gallons per minute. Approximately 15,000 linear feet of buried pipe is used to distribute irrigation water to points of use.

Facilities include a headquarters unit and a livestock unit. Buildings at the headquarters were constructed from 1960 to 1977 as funds were made available. They include office and laboratory space, seed storage and processing facilities, shop and equipment storage space plus a residence for the superintendent. The livestock unit, established with a grant of \$109,000 from the Garrison Diversion Conservancy District in 1972, includes facilities for feed and equipment storage, livestock feeding, handling and housing plus a residence for the animal husbandman. The total original investment in land, irrigation wells and equipment, buildings, field and plot equipment is about \$600,000. However, current value is much in excess of this amount.

In the first year of operation at Carrington (1960) there was one professional staff member and two part-time technicians. Since then the staff has grown to include four professional workers, three technicians and one secretary.