The Hettinger Research Extension Center (HREC) was established from a gift of 160 acres by the residents of Adams County and the city of Hettinger in 1909. Original work at the HREC involved converting native prairie to farmland for the purpose of agronomic research. In 1912, through cooperation with the United States Department of Agriculture, a dry land farming trial began. In 1913 a herd of Guernsey and Jersey cows and bulls was purchased to aid local producers in the production of replacement dairy cattle. Following a brief closure during the Depression, the HREC continued to grow the research programs, focusing on agronomy and sheep breeding. In 1947, an option was secured for the purchase of an extra quarter of land to continue and expand sheep and agronomy research. In the 1980's the research programs were solidified with the addition of land bringing the total owned land to 1130 acres, and the hiring of an agronomist.

The HREC is a semi-arid site located in southwest North Dakota, providing the most southerly NDSU location in the non-glaciated portion of North Dakota as a site for its agronomy research program. The HREC also is located at the center of the North Dakota sheep industry, the focus of one of its animal research programs. Furthermore, the HREC is located in an area of rapidly growing livestock feeding ventures, another focus of animal research at the HREC. Additionally, the HREC is located in a region where much of the land base is in the Conservation Reserve Program and Forest Service lands, which has resulted in additional research evaluating potential changes in the CRP program and how these changes may affect upland native and game bird populations. A new research program evaluating low-cost rangeland monitoring strategies on U.S. Forest Service lands has resulted in a significant increase in the quantity of rangeland, livestock, and wildlife interaction research conducted at the HREC throughout the western Dakotas. Research at HREC involves the disciplines of animal science, range and wildlife science agronomy, and weed science. Collaboration is with Main Station scientists, Branch Station scientists, U.S. Forest Service, grazing associations, university scientists from WY, SD, and MT, and USDA research entities in these research disciplines to improve the productivity of livestock and cropping systems and economic development of the region. Through these efforts, the center's research program has gained a national reputation for its involvement with sheep production systems as well as a strong regional and state reputation for its research in agronomy, multiple-land use, and calf backgrounding.

**AGRONOMY**

- Conducted crop variety and hybrid yield trials for 21 different crops at Hettinger along with off-station small grains trials at 4 locations.
- 12 preliminary yield trials/nurseries for wheat, pulse and canola breeding programs.
- Evaluation of canolana, an oilseed mustard like canolana, for adaptation to western ND for use biofuel production. This crop looks promising with yields of canolana being competitive with hybrid canola and having fewer problems with seed shatter.
- 10 agronomic studies, including seed treatments, soybean & durum planting dates, spring wheat nitrogen timing, and spring wheat seeding rate.

**WEED SCIENCE**

- Evaluation of pre-emergence and post-emergence herbicides for weed control and crop tolerance for SW ND.
- Evaluation of fall-applied herbicides for weed control and crop tolerance.
- Options for post-harvest weed control.
- Management of noxious and troublesome weeds in pasture and rangelands.
- Cover crop tolerance to carryover of herbicides applied to spring wheat.
- Contributed to NDSU Weed Control Guide.
- Publish Crops Day report.
HREC Crops, Weeds, Livestock, and Range

RANGE and LIVESTOCK SCIENCE

- Using annual forages to provide forage for grazers and resources for pollinators and a state-wide assessment of pollinator populations.
- Evaluate the ecological effects of integrating livestock herbivory and annual forages into a winter wheat cropping system.
- Patch-burn and sheep/cattle grazing on post Conservation Reserve Program land.
- Evaluated supplementation strategies during pregnancy and their effect on embryonic death loss, fetal development, and potential feedlot and reproductive performance of offspring.
- Continued research in "Value Added Animal Production"; evaluated mineral injection during receiving of freshly weaned calves.
- Evaluation of feeding and supplementation strategies that impact ram fertility.
- Conduct the Dakota Fall Performance Ram Test; a 140 day Rambouillet Certificate of Merit program, one of three Rambouillet Ram Tests in the nation.

OUTREACH and EXTENSION

- Analyze wool samples for fiber diameter using an OFDA Fiber Analyzer
- Bi-weekly radio updates during the growing season.
- Implemented Nitrate QuikTest certification program in 41 ND County Extension Offices.
- Delivered over 30 presentation to 800 livestock producers since January 1.

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