



CARRINGTON RESEARCH EXTENSION CENTER

2023 SBARE
Listening Session



Program Areas

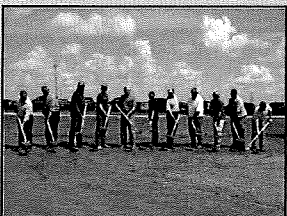
- Agronomic research and Extension
- Livestock research and Extension



- Precision agriculture research and Extension
- Plant pathology research



- Foundation seedstocks production
- Oakes Irrigation Research Site



- Soils research
- Northern Hardy Fruit and Berry evaluation



- Livestock Environmental Management education
- Forage and Organic Systems

NDSU Carrington Research Extension Center

Mike Ostlie, Director
663 Hwy. 281 NE
PO Box 219
Carrington, ND 58421
701-652-2951
fax 701-652-2055
www.ag.ndsu.edu/CarringtonREC

DESCRIPTION

The Carrington Research Extension Center conducts research and educational programs to enhance the productivity, competitiveness, and diversity of agriculture in central North Dakota. Research activities at the CREC include scientists and support staff trained in implementing programs in Agronomy, Plant Pathology, Soil Science, Precision Agriculture, Forage and Organic Systems, and Animal Science. A Northern Hardy Fruit program broadens the constituency being served and introduces much needed information related to horticultural development in the state. The foundation seed program of the Center represents an important part of the overall NDSU Foundation Seedstock program. The CREC is the base of operation for four Extension Specialists (Agronomy, Precision Agriculture, Livestock Environmental Management, and Beef Production). Currently, CREC has collaborative projects with over 42 researchers from other RECs, campus departments, USDA facilities, and other universities.

FACILITIES

The CREC operates on a land base of just over 2,000 acres of which the Agriculture Experiment Station owns 840 acres and cooperating area landowners are depended on for rental of the remaining acres. Four center pivots provide irrigation on 250 acres while infrastructure supplies water for more than 80 acres of misting systems on owned land. Researchers also conduct off-station crop production field trials near Dazey, Wishek, LaMoure, and Fingal, and operate an expanded research program on irrigated crop production at the Oakes Irrigation Research Site.

Center facilities include the headquarters building, an agronomy laboratory and greenhouse, shop, seed conditioning plant, and seed and equipment storage buildings. The livestock unit can accommodate about 500 head of cattle. It includes a feed mill, feedlot pens, feed and forage storage, animal shelters and an office. A lab/shop facility is slated for construction in 2024, along with pen expansion for additional research capacity.

PROGRAM IMPACTS



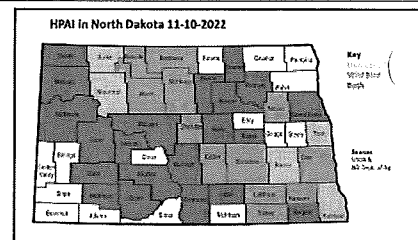
- The Northern Hardy Fruit project provided educational material to over 900 people via video conference programming, tours, and meetings. The program continues to work with area fruit industry in support of reducing the barriers to fruit production in North Dakota.
- The CREC held an on-farm collaborative Field Day in north central ND with WREC and LREC to connect intercropping farmers and those interested in intercropping. It was attended by over 50 farmers and grain buyers. This was a one-of-a-kind event for the region and helped demonstrate the concept of intercropping and implementation by farmers.

- Evaluated the partial or complete substitution of corn with hybrid rye in backgrounding and finishing rations for feedlot steers. Results from the study indicated that the inclusion of hybrid rye performed similarly to corn on animal performance during the trial, including many carcass characteristics.
- Evaluated the efficacy of nitrogen-fixing bacteria (biologicals) in corn. The results did not show any yield enhancements.



PROGRAM IMPACTS (CONT.)

- Helped coordinate NDSU's response to Highly Pathogenic Avian Influenza (HPAI) in 2022. Response by NDSU included visiting 24 farms containing 236,526 birds. Coordinated communications reached over 30,000 people through press releases, 87,000 people through podcasts, radio, and television, 3,951 engagements through social media, 2,874 webpage views, and 894 phone calls.
- Fungicide droplet size research was expanded for dry beans and soybeans to include additional crop and variety-specific canopy characteristics. Research has demonstrated that optimizing spray droplet size substantially improves fungicide performance on white mold at minimal cost to producers. Growers adopting these practices have also reported greatly improved disease control.



- Research demonstrated that Ascochyta blight control in chickpeas is sharply improved by tank-mixing standard fungicides with an older contact product (chlorothalonil) and developed recommendations on spray droplet size to optimize the efficacy of the products and minimize additional costs to producers.
- A summary of 10 years of dry bean research trials was compiled related to row spacing and plant population targets across market classes.

PROGRAMMATIC NEEDS

Increased Technical Support

Additional technical support is requested for the CREC Plant Pathology program. The program at CREC has led the nation in applied research in many broadleaf foliar diseases, but white mold in-particular. The research has benefited the region greatly by demonstrating more efficient application strategies rather than adding costs and inputs. However, additional support is needed for this project to further study fungicide efficiency. This program area is difficult to fund as there is no new product to market at the end, but it directly benefits producers by cutting costs or maximizing the cost/benefit ratio.

Horticulture Research Program

A fruit and berry research program is needed in the region to support the continued development of North Dakota's burgeoning fruit industry. Applied production research would be well suited at CREC due to its mature demonstration orchard, allowing for minimal lag time between program establishment and public impact. High value crops such as juneberry, haskap, aronia and others could be poised to help new or non-traditional farmers maintain rural communities and provide additional avenues for agri-tourism, on top of producing a high quality ag product.

Operational Funding Enhancement

Significant increases in operational costs have impacted the research programs across the Ag Experiment Station. The majority of the department's operational costs are supported by funds derived from grants secured by CREC researchers. Opportunities to pursue grants are not increasing and not all types of operating costs are allowed by grant agencies. An example of this need relates to the Fruit Project at CREC which aims to demonstrate and research community-oriented horticulture which can directly impact urban constituents.

CHALLENGES TO SUSTAINING PROGRAMS

Deferred Maintenance

Current support for maintenance of CREC facilities and infrastructure is inadequate to address current deferred maintenance costs. The programs of the CREC are supported by a diversity of facilities that include not only the primary buildings like headquarters and laboratory but also feedlot pens, feed and seed storage, irrigation systems, animal shelters, roadways, parking lots, water supply features, storage buildings, and waste containment.

Livestock Sourcing

The CREC is grateful for the increased research capacity coming online for our Livestock Unit. This opportunity comes with additional challenges such as sourcing additional cattle, whether part of a producer feed-out program or part of a permanent increase to the cattle herd.

Land Base

A secure land base is critical to sustain the current and future research mission of the Carrington Center. The diverse programs of the CREC operate on an owned land base that is relatively small. The majority of the land used among programs is generally secured by annual rental agreements from seven different landowners. The heavy reliance on rented land comes with risks in our ability to maintain programs and with significant annual costs to the department.

FUTURE CAPITAL PROJECTS

Equipment Storage

Additional equipment storage capacity is needed to protect high-value research and large-scale equipment from exposure to the elements. Equipment degradation due to precipitation events, freeze-thaw cycles and sunlight increases repair costs and results in equipment depreciated in value more quickly. Rodent infestations have also caused frequent employee safety concerns and contributed to further repair costs.