Agricultural Experiment Station
Clayton Livestock Research Center
claytonsc.nmsu.edu | 575-374-2566

VISION

Inspiring the future of beef through livestock health and climate-smart production.

MISSION

The mission of the Clayton Livestock Research Center is to improve livestock health, well-being, nutrition, and performance through the development of innovative diet formulation, health protocols, and livestock management systems that support healthy communities, a sustainable environment, and a robust industry.

- Recent processing barn updates include new prep and storage area, restrooms and mud room.

- Feed mill upgrades optimize energy efficiency and include new lighting, all new electrical wiring, and a fully automated computerized controlled batching system.

- The Center now can study cattle greenhouse gas emissions by pen with the addition of two portable, trailer mounted GreenFeed systems.

Value Added to New Mexico

- Food animal research
- Climate- conscious beef cattle production
- Livestock health
- Sustainable managerial intervention

The Clayton Livestock Research Center (CLRC) was established on 320 acres of Kiowa National Grassland, Cibola National Forest, and is located 7 miles east of Clayton, NM on Highway 56/64/412. Plans for the CLRC began in 1972 with construction commencing in 1975. Research is focused on improving the health of newly received lightweight calves that may or may not originate in New Mexico but are utilized for stocker operations grazing New Mexico rangelands, as well as, the health of New Mexico range calves shipped outside the state for placement on grass or into feed yards.

ONGOING RESEARCH

Robust research is being conducted at the CLRC with respect to beef cattle production. Collaborative efforts with Utah State University have launched an investigation into metabolism and offspring performance in beef cattle. Nutritional studies are also being conducted by researchers at the center with newly received feedlot calves. Investigations are being conducted to determine performance and carcass characteristics of finished beef steers.

The College of Agricultural, Consumer, and Environmental Sciences is an engine for economic and community development in New Mexico, improving the lives of New Mexicans through academic, research and Extension programs.

ACES Pillars for Economic and Community Development

Food and Fiber Production and Marketing | Water Use and Conservation | Family Development and Health of New Mexicans | Environmental Stewardship

Foundational Education and Training

claytonsc.nmsu.edu
Research Director: Mozart Fonseca|mozart@nmsu.edu

RECENT IMPACTS

- With increasing scrutiny on freshwater availability, CLRC research has focused on understanding and optimizing water usage in cattle production. Current research is developing the Water Evaluation System (WES), a mechanistic model to accurately assess water requirements for livestock, factoring in environmental extremes and diet composition. These studies are critical for ensuring sustainable water use in regions reliant on the Ogallala Aquifer, such as Northeastern New Mexico. By monitoring water consumption and developing predictive tools, we aim to minimize water footprints while maintaining productivity.

- Recent wildfires in the Texas Panhandle have highlighted the need for understanding how environmental stressors like wildfire smoke affect cattle health and performance. Our work at CLRC is exploring the epigenetic mechanisms, specifically DNA methylation, which may link environmental stress to long-term production outcomes. These insights are essential for mitigating the economic impact of environmental variability, particularly in newly received calves. We are also investigating how these stress-induced changes affect feed efficiency and health outcomes.

- Advancements in microencapsulation technologies at CLRC are optimizing nutrient delivery, particularly for nonprotein nitrogen, fats, and amino acids. Our research shows that slow-release urea and protected fats enhance feed efficiency and improve health outcomes. Additionally, we are studying the impacts of nutrient protection on reducing inflammation and improving long-term animal performance, which holds significant promise for enhancing cattle resilience to fluctuating nutrient availability and environmental stresses.

COMMUNITY OUTREACH

The CLRC's community outreach focuses on sustainable cattle production, addressing challenges in water usage, environmental stress, and nutrient management. By sharing research findings on the Water Evaluation System (WES) for efficient water use, and the effects of environmental stress on livestock health, the center provides valuable insights to local producers. Outreach efforts also highlight the benefits of advanced nutrient delivery technologies, such as microencapsulation, to improve animal performance and health. Additionally, CLRC staff actively engage with the regional community through educational workshops, local organizations, and service projects, ensuring that research translates into practical benefits for New Mexico's agricultural industry.

Clayton Livestock Research Center
New Mexico State University
15 NMSU Lane, Clayton, NM 88415
Phone: 575-374-2566