Clayton Livestock Research Center

Strategically located in the tri-state region of New Mexico, Texas, and Oklahoma, the CLRC is positioned in the largest cattle feeding area in the U.S. This unique setting allows researchers to address real-world challenges in beef production, including animal health, nutrition and environmental stress. Established in the mid-1970s on 320 acres of Kiowa National Grassland near Clayton, New Mexico, the center is designed to simulate commercial feedlot conditions while supporting innovative research that improves sustainability and resilience of the beef industry.

Scan the QR code to visit our website claytonsc.nmsu.edu

MISSION

The mission of the Clayton Livestock Research Center (CLRC) 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

VISION

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

VALUE ADDED TO NEW MEXICO

- Comprehensive research facility supporting small, medium and large-scale beef operations translating across New Mexico's diverse production systems — from grazing and backgrounding to finishing in feedlots — ensuring statewide relevance and application.

Research Focus

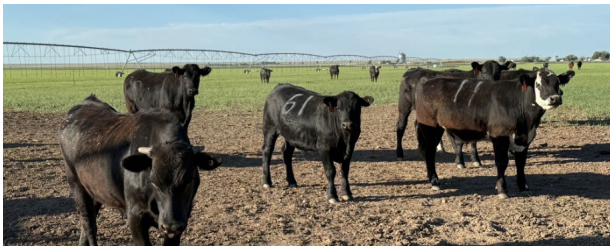
The Clayton Livestock Research Center is committed to advancing beef production through innovative studies that address animal performance, environmental sustainability and resilience under variable conditions. Ongoing projects investigate the interplay of environmental stress, nutrition and cattle health, with emphasis on water use efficiency, epigenetic regulation and precision technologies for real-time monitoring of performance, intake and greenhouse gas emissions.

Current and emerging research initiatives include:

- Evaluation of emerging technologies: to measure enteric methane production in finishing cattle, supporting more accurate assessments of greenhouse gas outputs and carbon footprint.
- Feed additives and greenhouse gas emissions: testing a proprietary blend of essential oils to determine impacts on cattle performance and enteric methane emissions during grazing on irrigated wheat pastures.
- Controlled-release coatings: developing innovative biopolymer-based coatings for reseeding native rangelands grazed by cattle, with the goal of improving plant establishment and ecosystem resilience.
- Fiber, starch, and gut health: evaluating dietary fiber and starch levels, with and without supplemental iso-acids, to determine effects on ruminal fermentation, digesta kinetics, nutrient digestibility, microbial protein synthesis and markers of gut inflammation and integrity in growing-finishing beef cattle.

VALUE ADDED TO NEW MEXICO CONT.

- Irrigated forage production strengthens research on grazing systems, water use efficiency and resilience of New Mexico's rangelands.
- Advanced feed and water intake, body weight and greenhouse gas emissions monitoring systems position New Mexico at the forefront of efficiency of beef production.
- Industry research contracts bring investment into rural New Mexico and accelerate the adoption of new technologies.
- Supports economic development through sustainable cattle production research, which strengthens the state's largest agricultural sector and provides workforce training opportunities for students and producers.



Recent Impacts

- **Emerging methane measurement technologies**
  Accurate enteric methane data is essential for reducing greenhouse gas emissions from cattle. CLRC validated emerging monitoring tools in feedlot settings, showing they can reliably capture real-time emissions without disrupting feeding behavior. These systems provide producers with practical ways to document climate-smart practices and meet sustainability targets.
- **Feed additives supplementation for grazing cattle wheat pasture**
  Methane emissions and feed efficiency are critical issues for grazing cattle. CLRC tested a proprietary blend of essential oils in irrigated wheat pasture systems, finding improved performance and reduced methane intensity per unit of gain. This natural additive supports profitability and environmental stewardship while aligning with consumer preferences.
- **Controlled-release seed coatings**
  Restoring degraded rangelands is limited by low seedling survival. CLRC developed controlled-release seed coatings that protect native seeds and improve establishment under grazing pressure. This technology lowers restoration costs, enhances rangeland resilience, and sustains forage resources for both cattle and wildlife.
- **Fiber, Starch, and Gut Health**
  Balancing fiber and starch while supplementing iso-acids influences digestion, fermentation and gut health. CLRC studies revealed improved microbial protein synthesis and reduced inflammation with certain diet combinations. These insights equip nutritionists with science-based feeding strategies to enhance cattle performance and efficiency.

COMMUNITY ENGAGEMENT

CLRC maintains a strong connection with regional producers and stakeholders through workshops, field days and local educational programs. Outreach emphasizes practical solutions to challenges in water management, nutrient efficiency and cattle health. For example, field day events highlight results from water evaluation system and nutrient delivery technologies, enabling producers to directly apply research innovations. CLRC scientists also collaborate with schools, local organizations and producer groups to promote workforce development and community resilience in northeastern New Mexico.