

# Livestock Issues Research Unit

Lubbock, Texas



## WHO WE ARE

The Livestock Issues Research Unit (LIRU) has impacted the beef and swine industry for 23 years by improving cattle and swine health, immunity, and well-being through high-quality and intensive scientific research that generates positive, practical applications beneficial for farmers, producers, industry, and the research community. Expanding research presents resource and planning challenges.

## OUR IMPACT

LIRU works closely with ranchers, universities, and industry to research and identify animal characteristics that support immune responses and improves health, well-being, and productivity. Their efforts reduce stress in beef and dairy cattle and swine through new management practices and nutritional intervention strategies, reducing management time and costs.

## Products developed:

- An indwelling internal temperature monitoring device that enhances animal health research capabilities and reduces animal stress due to less handling. Used by researchers across the U.S. and Canada.
- A reliable and repeatable bovine respiratory disease model to test potential prevention and treatment strategies against the disease.
- A model in swine and dairy calves that allows monitoring of animal health by tracking of *Salmonella* throughout the body.

## Highlights:

- Identified that stressful events livestock experience leads to the spread of *Salmonella* from the gastrointestinal tract to peripheral lymph nodes, thus increasing the risk of foodborne pathogen contamination.
- Identified specific supplements can improve livestock health and well-being; and reduce the negative impacts of heat stress and immune challenges.

## HOW WE HELP

Stress can negatively affect livestock growth, reproduction, well-being, and immune function, making them more susceptible to diseases. Scientists' commitment is focused on four primary areas of concern for the livestock industry:

- Measure stress and the immune response in relationship to pre-harvest food safety and quality.
- Identify host and pathogen interactions to improve animal health.
- Find non-antibiotic additives that strengthen immunity and improve animal health.
- Develop new livestock management strategies.



ARS Immunologist Dr. Nicole Sanchez checks body weight and removes one of the ARS-developed rectal probes used to continuously monitor body temperature.

## Contact Us

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