

SUSTAINABILITY IN DAIRY PRODUCTION

AgNext
COLORADO STATE UNIVERSITY
SUSTAINABLE SOLUTIONS
FOR ANIMAL AGRICULTURE

A Focus on Animal Health and Food Security

The Three Pillars of Sustainability:



Human Nutrition & Economy



■ Dairy products are key to a healthy diet and contribute to ensuring bone health and adequate nutrition for young children, pregnant women and the elderly.

— [Journal of Agricultural & Food Chemistry](#)

— [National Library of Medicine](#)

■ The dairy industry is a vital element for global food security and the economy.

- The U.S. dairy industry contributes 3.5% of the U.S. gross domestic product and provides approximately 3.3 million jobs.

3.5%
of the
GDP

- In Colorado, dairy production plays an essential role in generating \$3 billion in economic activity, producing 558 million gallons of milk per year and creating about 53,000 direct and indirect jobs.

53,000
jobs in
Colorado

— [Colorado Agriculture, 2024](#)

Milk Safety & Quality

Tested



- Every truckload of milk gets tested for antimicrobial presence in the milk processing facilities

Regulated



- The FDA regulates milk safety including inspections of milk processing facilities, milk testing, milk labeling and advertising

Isolated



- When cows need to be treated with antibiotics, their milk is removed from the milk supply

Animal Health, Comfort and Welfare

Disease Prevention



Producers and researchers strive to develop herd health programs to prevent disease.

Housing



Modern dairy farms invest in housing design, ventilation, cleaning and dry bedding to optimize cow comfort.

Monitoring



RFID tags and other sensory technologies allow farmers to continuously monitor cow health.

Voluntary Milking



Automated robotic systems allow cows to be voluntarily milked.

Trends Over Time

Dairy farmers continue to improve efficiency, and cattle are six times more productive than they were in 1924.



— USDA National Agriculture Statistics Service

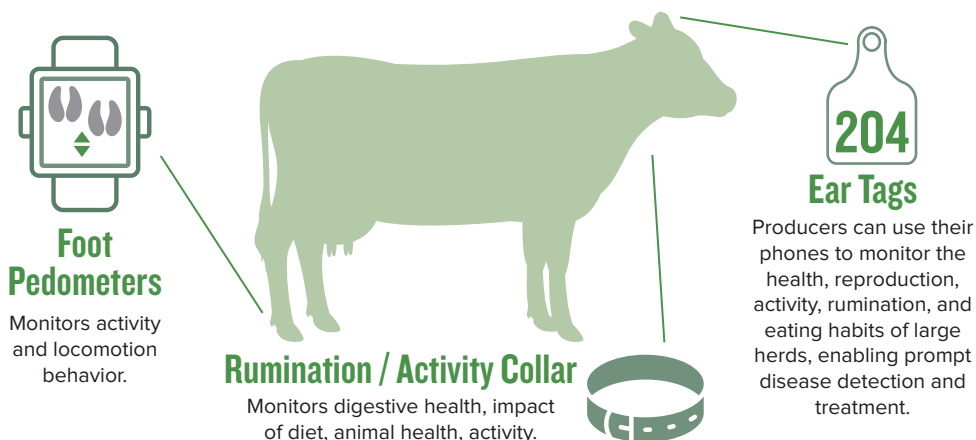
Today's dairy farms are more productive than those of the past and utilize fewer natural resources to produce more milk because of improvements to herd management, genetics and preventative medicine.

By the numbers:



Precision Technologies for Animal Health & Reproductive Monitoring

Modern dairy farms invest in herd health programs and advanced technology to monitor individual animal health and reproduction. These tools can improve both animal well-being and reproductive efficiency. Producers select the technologies that best fit their operations, such as foot pedometers, ear tags, and rumination or activity collars. ^{1,2,3,4}



¹ Dairy production sustainability through a one-health lens in: *Journal of the American Veterinary Medical Association* Volume 261 Issue 1 (2023) ([avma.org](https://www.avma.org))

² Associations of pre- and postpartum lying time with metabolic, inflammation, and health status of lactating dairy cows - *ScienceDirect*

³ Precision technologies to improve dairy grazing systems - *PubMed (nih.gov)*

⁴ Symposium review: Precision technologies for dairy calves and management applications - *ScienceDirect*

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agnext.colostate.edu



agnext@colostate.edu

