

## AS HIGH SUMMER APPROACHES, DAIRY AND CATTLE RANCHERS SHOULD FOCUS ON REDUCING ANIMAL HEAT STRESS



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One of the major consequences of climate change is becoming clear—record-breaking high summer heat. The recent "heat dome" blanketing states across the mid-West and Southeast United States has produced unprecedented, triple-digit temperatures.

Heat stress can cause significant financial loss to a cattle ranch due to the deleterious effects on animal welfare and performance. For example, it can take up to five weeks for a breeding bull to recover sperm quality after a mild to moderate heat stress bout. Exposure to heat stress also reduces oocyte quality and embryo viability, negatively impacting cow fertility.

In addition to its effects on fertility, prolonged exposure to heat stress during gestation can negatively impact calf performance.

Shade ( $77 \pm 6.3$  sq. ft. of shade per animal) and limit feeding (either a high-energy or a high-roughage diet) are two heat mitigation strategies commonly used to protect cattle from negative heat impacts during the finishing phase. However, neither of these measures alone may be sufficient for cattle during the growing phase. When combined as a deliberate strategy to reduce the consequences of summer heat stress, shade and limit feeding provide a yield benefit that can outweigh the implementation costs.

New data published by ag scientists at the Kansas State University Department of Animal Sciences found that limiting feeding and providing shade to calves improved calf growth, feed efficiency, decreased water

usage, and improved animal comfort.<sup>1</sup> The new data also suggest that providing shade during the summer can ultimately enhance the weight gain to feed ratio in pen-fed growing cattle.

## **THE BOTTOM LINE:**

Heat stress negatively impacts cattle and dairy animal performance. Exposure to heat stress reduces daily gains, milk production, and reproductive efficiency. While specific impacts on production vary depending on the magnitude and duration of heat exposure, summer heat stress is much more detrimental than short-term heat stress, and its negative effects remain long after temperatures return below the heat stress threshold.

In addition to shade and diet, dairy and beef ranch operators should try to reduce the extent and duration of heat stress exposure by making these core adjustments to their management and housing strategies:

- Ensure adequate ventilation. Poor ventilation is often an issue inside barns or other manufactured structures. Open these facilities as much as possible to promote natural airflow by opening side curtains, windows, etc. Install fans in key areas, such as the feed bunk, over the free stalls or bedded pack, and holding pen (dairy) to promote airflow.
- Ensure ample access to fresh, clean water. Water is required for all animals to maintain body temperature, and under normal conditions, a high-producing dairy cow will drink up to 50 gallons of water per day, while a beef cow will drink up to 15 gallons per day. Heat stress may cause cattle to increase their water intake by up to 50%. Waterers should be installed in areas easily accessible for cattle, and the flow rate should be sufficient to support increased water demand. For dairy cattle, place waterers near the exit of the milking parlor.
- Consider cooling with water only after there is shade and adequate ventilation. This heat abatement strategy must be paired with sufficient airflow or fans to promote evaporative cooling to prove effective. Simply soaking cattle without adequate airflow will only succeed in creating a more humid environment around the animals. Strategically place sprinklers/misters at the feed bunk and the holding pen (dairy) for optimal cooling.
- Avoid working animals during the day. Schedule transportation or other activities for early in the morning (preferred) or late in the evening. Any stressful events, such as vaccination, weaning, or dehorning, should be rescheduled if there is an impending heat wave.

Several more months of extreme temperatures lie ahead, especially for dairy and beef ranches in Florida and other Southern states suffering through this year's extraordinary summer heat. Implementing a program to manage heat stress provides collateral benefits beyond the obvious advantages of fertility, milk production, and growth.

One such collateral benefit to implementing practices that mitigate heat stress is the ability to recover more easily if a loss occurs despite implementing heat stress reduction measures. Many ranchers opt for livestock insurance provided by the U.S. Department of Agriculture (USDA) or private companies. Not all livestock insurance policies are created equally, and ranchers interested in livestock insurance should evaluate what practices they must implement to ensure claim coverage. In addition, not all policies cover animal death, and some may not cover loss of revenue due to heat-related revenue losses.

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<sup>1</sup> The study, "Effects of Limit Feeding and Shade Allocation on Growing Calf Performance, Water Usage, and Animal Comfort," was authored by Z.L. DeBord, Z. M. Duncan and M.G. Pflughoeft; the full text of the published study is accessible online at: <https://newprairiepress.org/cgi/viewcontent.cgi?article=8413&context=kaesrr>

If a ranch's insurance policy does not require specific husbandry practices to ensure claim coverage, having clear and accurate documentation of the heat-mitigating procedures the ranch has in place is critical in the event the ranch needs to argue why its claim qualifies for coverage.

Even if not insured, ranches may be able to recover from losses associated with extreme heat from the USDA's Livestock Indemnity Program. Ranches must apply within one calendar year from when the extreme heat event causing livestock loss occurred to recover under this program.

Although taking steps to prevent heat-related losses is critical, ranches have options for recovery if heat-related loss occurs. With global temperatures continuously rising, ranches constantly seek ways to best care for their animals while remaining profitable. Beating the heat to protect animal lives and production revenues is a crucial but sometimes tricky hurdle for the modern rancher.

To learn more about mitigating heat-related livestock losses, contact the GrayRobinson national [Food Law Team](#) at 866.382.5132 or [foodlaw@gray-robinson.com](mailto:foodlaw@gray-robinson.com).

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