Herd Health in Beef Cattle

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Overview

Traditional herd health programs have primarily focused on vaccinations for common diseases and parasite control. However, not all cattle health issues are caused by infectious or parasitic diseases. Modern herd health programs must take a more comprehensive **preventive** approach — considering all potential health problems and the management factors that influence cattle well-being.

Categories of Cattle Health Problems

- **Infectious:** Caused by bacteria, viruses, fungi or parasites.
- **Nutritional/Metabolic:** Result from imbalances or deficiencies in the diet.
  - Examples:
    - Copper deficiency
    - Grass tetany
    - Rumenal acidosis
- **Toxicities:** Due to ingestion of toxic plants, chemicals or contaminated feed/water.
- **Genetic/Hereditary:** Inherited conditions affecting function or development.
- **Environmental:** Result from poor housing, handling or environmental exposure.
  - Examples:
    - Heat stress
    - Frostbite
- **Reproductive:** May be caused by infectious agents, nutrition or genetics.
- **Traumatic:** Physical damage from handling or environment.

Personalizing a herd health program for each ranch is most cost effective. Herd health programs must fit the business model of the ranch and therefore are impacted by many specific ranch characteristics such as geographic location, grazing and nutrition, available resources, facilities and personnel, marketing channels, etc. Cattlemen should avoid generic programs and instead rely on their veterinarian to develop a customized herd health program taking all of the ranch specific variables into consideration.

Accurate record keeping is essential for both cattle producers and veterinarians when developing and monitoring herd health programs. Many of the most damaging diseases first affect production and reproduction — often before any obvious signs of illness appear. Tracking herd performance and management changes and incorporating new information allows for earlier intervention and continual improvement of the herd health plan each year.

When developing herd health programs, the primary goal is to support the immune system so that cattle are more resilient and better able to resist disease and environmental challenges. This is largely achieved by minimizing or eliminating stress.

Stress suppresses the immune system, reduces appetite and water intake, and increases nutrient demands — all of which negatively impact growth, reproduction and carcass quality. Stressed cattle also respond poorly to vaccines, creating a cycle of declining health and performance.

Stress can be **acute** (e.g., weaning, castration, dehorning, transportation, rough handling, diet changes) or **chronic** (e.g., heat stress, poor nutrition). While each stressor alone can weaken immunity, the effects are compounded when multiple stressors occur together.

We can manage stress in three key ways:

1. Eliminate it when possible.
2. Reduce the severity.
3. Avoid adding multiple stressors together.

The following are common stressors in cow-calf operations that should be proactively managed to support cattle health and performance.

Nutritional Stress

Proper nutrition is the foundation of healthy and productive animals. If we eliminate all other stressors but don't feed animals properly, we will have poor production and an immune system that can't respond to vaccines or disease challenges.

In cow-calf operations, brood cow nutrition is a key driver of calf health, performance and ranch profitability. Even a single year of poor nutrition can have lasting effects. Cows in poor body condition are more prone to calving difficulties due to weak labor efforts, increasing the risk of stillbirths and weak calves. These calves are more susceptible to cold stress, poor colostrum intake, disease and death.

Undernourished cows also produce low-quality colostrum, compounding the risk of failure of passive transfer (FPT). Calves with FPT, even if they remain healthy, show reduced growth and performance. Those that get sick never reach their full genetic potential.

Cows that calve thin often conceive late or fail to rebreed, and their heifer calves — despite later good nutrition — exhibit poorer reproductive performance than those born to well-conditioned cows.

In short, poor nutrition in one year results in fewer pounds weaned per cow for several years and reduced productivity in both feeder calves and replacement heifers.

Infectious Diseases

Infectious diseases come in two groups-those that are already present (endemic) on the ranch (e.g., viruses that cause calf diarrhea) that we need to control; and those that are not present that we want to prevent from gaining entry onto the ranch (e.g., Johne's disease). The two main ways we control disease entry and spread are through a biosecurity/biocontainmen plan and vaccinations.

Parasites

Control of internal and external parasites is essential for good health and productivity, especially in young animals. Controlling parasites increases weaning weights, milk production, conception rates and response to vaccines. A good control program that considers rising parasite resistance to anthelmintics and pesticides is a must.

Weaning

Weaning is an unavoidable stress, but its impacts can be reduced. Fenceline weaning and the use of nose flaps are proven to ease the transition. Creep feeding — used more to reduce diet change stress than weight gain — can also help. Castrating, dehorning, vaccinating and deworming well before weaning prevents the compounding effects of multiple stressors. Holding calves for at least 45 days post-weaning and minimizing commingling before shipping are also effective strategies.

Castration and Dehorning

Performing these procedures at a very early age is best. Use of pain management through pharmaceuticals should also be considered. Producers can talk to their veterinarians about learning these techniques. Polled genetics to reduce the need for dehorning can also be considered.

Cattle Handling

Low stress cattle handling helps prevent bruising, appetite suppression, poor vaccine response and poor reproductive performance from artificial techniques that can be associated with cattle working. Feeder calves that are handled with as little stress as possible have less sickness, increased weight gain without additional inputs and higher quality grades.

Weather

Heat is unavoidable in the Southeast, but its impact can be minimized. If Brahman-influenced genetics aren't suitable for your program, select non-Brahman cattle from herds already adapted to the region. Provide ample shade and clean water, ensuring they are located close together. Cattle may avoid water if it requires leaving the shade, which can have fatal consequences.

Cold stress, though less common, can also be severe — particularly during wet, windy conditions and in heat-tolerant breeds. Operations should have a contingency plan for extreme cold, including temporary shelter or windbreaks and increased nutritional support. A single cold year can negatively affect productivity for years.

Rain also creates mud, which significantly increases energy demands as cattle expend effort simply moving. The problem worsens when cattle lack dry bedding areas. While mud cannot be eliminated in the Southeast, efforts should be made to manage and reduce its impact.

Genetics

Selection for animals that are resilient to health problems is an appealing strategy. Understanding the interface of heritable traits and environmental influences (fetal programming and epigenetics) can help refine management practices to better match cows to their optimal environments and improve health and performance in feeder and breeding cattle.

Summary

Modern herd health programs go beyond vaccines and parasite control, adopting a comprehensive, preventive approach tailored to each ranch. Customized health plans, developed in partnership with a veterinarian, should reflect the ranch's unique conditions.

Minimizing stress is critical, as it impairs immunity and reduces productivity. Nutritional management is foundational for health and production of beef cattle herds.

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