



LAMENESS IN DAIRY AND BEEF HERDS

In both beef and dairy operations, lameness is an important economic and welfare concern. This document from the American Association of Bovine Practitioners is meant to provide guidance for veterinarians to their clients when addressing lameness at both the herd and individual animal level.

**THE KEYS TO CREATING AN EFFECTIVE LAMENESS PROGRAM ARE:
EARLY IDENTIFICATION AND TREATMENT OF LAME CATTLE; MAXIMIZING THE COW COMFORT OF HOUSING AND THE ENVIRONMENT; IMPLEMENTING SOUND PREVENTIVE HOOF CARE AND NUTRITIONAL PRACTICES; AND REGULAR REVIEW OF RECORDS IN ASSOCIATION WITH ALL STAKEHOLDERS TO REVIEW PROGRESS.**

■ EARLY IDENTIFICATION AND TREATMENT

Veterinarians must implement a lameness surveillance system that encompasses deliberate, active identification and treatment of lame cattle. A designated person or persons on the farm should be trained to identify lame cattle on a regular and frequent basis. Whether this is done daily, weekly, or bimonthly depends on herd size, but it is the responsibility of all farm workers to identify severely lame cattle every day. Surveillance should be done when cattle are walking normally (i.e. when they are moved to or from the pen or milking parlor, or are moving about their pen or lot). Regardless of the specific locomotion scoring method, the goal is to identify the animal with a noticeable limp and weight transfer off a painful lesion that is in need of treatment. Scoring systems with between 3 and 5 points have commonly been used for this purpose.

Once an animal has been identified as lame, a proper treatment protocol should be initiated within 24 hours. A proper treatment protocol includes segregation, restraint, diagnosis and an appropriate therapy. Appropriate facilities and tools should exist on every livestock operation that allow caregivers to safely restrain and treat a lame animal. If the facilities and tools do not exist, protocols should be in place to allow for a hoof trimmer or veterinarian to be called to provide the needed care. If it is decided that treatment is not feasible, a decision to cull or euthanize the animal should be made quickly (see AABP Euthanasia Guidelines at www.AABP.org).

Treatment of lameness should be carried out in a manner that minimizes pain to the animal. This

means minimizing trauma to the hoof corium and using appropriate anesthesia if needed. Individuals working on these cases should have appropriate pain mitigation tools available, and be trained in their use and application, including the correct application of bandages and hoof blocks. An appropriate follow up strategy should exist after treatment. This should include consideration of the benefits of analgesics or separate housing. Both the treatment and diagnosis of lame animals should be recorded in a permanent record that allows operations to ensure food safety and efficient monitoring of disease trends.

■ HOUSING AND ENVIRONMENT

Wet, dirty, and/or muddy conditions will contribute to the spread of infectious lameness, so maintaining a clean, dry hoof environment should be an important priority. Lots should be stocked appropriately and designed to promote drainage and the avoidance of mud puddles, and concrete flooring should be sloped and scraped frequently to ensure hygienic conditions.

Excessive time standing, particularly on concrete, will adversely impact hoof health. Therefore facilities should be designed and maintained to allow adequate time for rest. This means maintaining adequate square footage per animal in bedded areas, with adequate soft deep bedding; ensuring that freestall dimensions and design are adequate for the animals using them; ensuring lying surfaces provide comfort and traction for the animals when they lie down and get up; and in dairy herds, limiting overstocking to no more than 1.2 cows per stall; and limiting time out-



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side side of the pen during milking to no more than 3 hours per day.

Heat stress will increase rates of lameness by dramatically reducing lying time. Heat abatement measures including shade and adequate water access, fans to provide air speeds of 200–400 ft/min (1–2 m/s), and effective animal soaking and/or air cooling are essential to mitigate these effects, particularly when the Temperature Humidity Index (THI) exceeds 68°F or 20°C.

Flooring should be maintained to avoid slipping and trauma. Concrete flooring should be effectively grooved or textured, and rubber flooring used strategically in unloading areas, transfer lanes or where cattle are forced to stand for long periods (e.g. holding areas). Outside lots should be well drained and free of rocks and debris. Special consideration should be made in areas where a sudden change in direction may predispose to abrasive hoof action.

■ PREVENTIVE HOOFCARE

Preventive care aims to optimize hoof disinfection, hoof-trimming and feeding and nutrition practices in beef and dairy herds.

Footbaths serve to help control infectious hoof disease (e.g. digital dermatitis and foot rot). Footbaths should be 10–12 feet (3.0–3.7m) long, and filled to a depth of 4 inches (10 cm) to maximize hoof contact time, and used as frequently as necessary with an effective antibacterial agent refreshed as needed to maintain potency. As an alternative, hoof sprayer systems may be used where footbaths are impractical.


Regular hoof trimming of cattle at risk of hoof overgrowth to rebalance the inner and outer claws and restore a more upright claw angle should be performed, at minimum, every 6 months in dairy

cattle. The veterinarian should routinely monitor the frequency and adequacy of the trimming program and suggest improvements when necessary.

Feeding and Nutrition Cattle should be fed to minimize the risk for subacute ruminal acidosis by optimizing ration formulation and bunk management. Particular attention to particle size and avoidance of empty bunks at times when cattle are actively seeking feed should be a priority.

Nutrition management should aim to minimize body condition loss in early lactation in dairy cattle as this may impact the digital fat pad and increase the risk for claw horn growth disruption. Ration formulations should ensure adequate levels of trace minerals, including copper and zinc, with a proportion as chelates. Biotin, at 20 mg per head per day, has also been demonstrated to improve hoof health. There are several known toxins that produce severe lameness and foot problems by constricting the blood flow to extremities. These include ergot, endophyte-infected fescue, and some mycotoxins.

■ RECORDS REVIEW AND COMMUNICATION

Lameness is a complex multifactorial disease of great economic significance, with serious impact on the well-being of the individuals afflicted. The veterinarian should serve as the focal point on beef and dairy operations for lameness control. The prevalence of lameness should be assessed twice a year together with regular review and analysis of hoof lesion records to identify the dominant lesion types, the risk groups affected, and the timing of onset. Veterinarians should effectively communicate between the herd nutritionist, hoof-trimmers, farm caregivers and management to facilitate action to reduce lameness risk. 

For more information, reference materials and tools on lameness, visit <http://aabp.org/members/Lameness.asp>.