Feedlot Session

Moderator: Paige Eichar

Feedlot Lameness

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Abstract

Lameness affects approximately one of every six cattle in feedlots and accounts for 70% of all sales of non-performing cattle. Salvaged lame feedlot cattle only recover half of their original purchase price, and on average have approximately three month production costs included in their expense before salvage. This paper outlines prevention, treatment and management considerations for the more common causes of feedlot lameness.

Résumé

La boiterie affecte approximativement un bovin sur six dans les parcs d'engraissement et explique près de 70% des ventes d'animaux moins performants. Les bovins boiteux soignés dans les parcs d'engraissement ne recouvrent que la moitié de leur prix d'achat original. De plus, des coûts équivalents à près de trois mois de production en moyenne doivent être inclus dans les dépenses avant l'abattage. Cet article expose les grandes lignes de la prévention, du traitement et de la régie des causes les plus fréquentes de boiterie dans les parcs d'engraissement.

Introduction

Lameness in feedlot cattle is a serious economic problem. There are many causes for lameness. It is important that the problem be diagnosed correctly and treated quickly to minimize economic losses.

A review of the records from five large western feedlots showed 13.1% of 1,843,652 animals were treated for health problems. Lameness accounted for 16% of these health problems and 5% of deaths of feedlot cattle. Lame cattle accounted for 70% of all sales of non-performing cattle.

The price received for these salvaged lame animals was only 53% of the original purchase price. While lame cattle in this study were sold, an average of 85 days after their arrival, they averaged only 10 pounds more than their in-weight. The total loss per lame animal was $121 per head ($101.76 loss in value to all lame animals from the sale of the salvaged animals, $4.96 for medication and $14.28 for feed cost for salvaged animals). The loss per head purchased was $2.54 resulting in an increase of $.50/cwt cost of gain.

When these values are projected to current prices for the approximately five million cattle fed in Nebraska, the total annual loss due to lameness is $18 million dollars or $3.36 per head (105,000 animals with a $156.82 salvage loss, $6.71 for medication and $18.00 for feed cost for salvaged animals). This equates to a $.70/cwt increase in the cost of gain for every animal placed on feed in Nebraska.

Causes of Feedlot Lameness

Diseases of the feet account for approximately 70% of all lameness in feedlot cattle. Other causes include injuries to the upper skeleton or major muscles (15%), septic joints (12%) and injection site lesions (3%).

The incidence of each cause will vary by season, source of cattle, environmental management, cattle handling and implant decisions. However, regardless of the circumstances, an accurate diagnosis is key to successful treatment and prevention of future cases and examination of the animal is the key to making an accurate diagnosis. Since most feedlot lameness involves the feet, you must pick up the foot to make a proper examination. Never medicate the animal before making a proper diagnosis.

Most foot diseases in feedlots are caused by sole penetration from excessive wear (toe abscesses), mechanical injuries from handling equipment, or footrot.

Toe Abscesses

Young cattle coming from lush pastures are prone to toe abscesses. These abscesses are caused by sole penetration that leads to infection under the hoof wall. The

hoof is soft and easily worn down into the sensitive tissues, especially in the toe area. The outside front toe is usually the most severely affected, and the outside rear toe is the next most common location for this problem.

Fall weaned calves, cattle coming from parts of the country with high annual rain fall and cattle coming from small grain pastures in the spring are most likely to have problems with toe abscesses. Wild cattle, abrasive surfaces and rough handling of the cattle often combine to create this problem.

If toe abscesses are a problem in feedlots, the receiving areas may be too clean. Dirt and dried manure provide a cushion to the hoof. Some feedlots only have a problem with toe abscesses after rains have washed the cushion away.

Early signs of toe abscesses are very subtle. Cattle will appear sore and short-strided. The foot is not swollen in the early stages. Nearly all animals treated properly at this stage will recover.

If the disease is allowed to progress, the animal will become noticeably lame. The animal may hold the most severely affected foot up, and if the disease progresses, slight swelling may be noticed at the top of the hoof.

When the animals are taken to the hospital area, the feet must be picked up and examined. When pressing your thumb on the side at the end of the toe, you should feel a soft area. You may also notice a crack between the hoof wall and the sole. There should be no swelling between the toes. Swelling between the toes is a cardinal sign of footrot, and is totally unrelated to toe abscesses. Feedlot operators often make the mistake of treating all lame cattle for footrot or upper leg injuries when toe abscesses may be part of the problem. If toe abscesses are not treated early, the toe will have to be amputated or the animal sold for salvage.

Toe abscesses are treated by trimming the end of the hoof just enough to relieve the pressure inside the hoof caused by the infection. If the animal bleeds when you trim the end of the hoof, you have trimmed too much. In addition to trimming, animals should be treated with a long-acting tetracycline. Antibiotics alone will not benefit the animal — the hoof must be trimmed.

Mechanical Injury to the Hoof

Hoof injuries are another cause of lameness. They are most often caused by poorly designed or poorly maintained facilities. An animal's toe can be caught in the space between the ground and the wall in crowding facilities. If the animal steps forward with a toe caught, the hoof can be injured. You can minimize damage by using pipe instead of square corner metal at the bottom of a side wall. This round finish will minimize damage to the hoof. The ideal condition would be to have no space between the side wall and the ground in the crowding facility. However, the minimum standard is no more than 1/4 inch per 100 lb of the typical animal handled.

Equipment should be inspected every day before it is used. Loose metal can cause mechanical injuries to dozens of animals before it is detected. Mechanical injuries should not be left to heal on their own. A minor injury can become a severe local infection which can cause loss of animal performance. Mechanical injuries vary widely, as does appropriate management.

Footrot

While footrot is the most commonly diagnosed cause of lameness in feedlots, it actually accounts for less than 10% of confirmed cases of lameness. Patterns of occurrence for footrot and toe abscesses are similar. Footrot is most often apparent one to two weeks after the soft tissue between the toes has sustained mechanical damage. The mechanical damage may come from dried pasture stubble or frozen mud spikes. You should be especially careful during the first two weeks after fall weaning when calves are coming from dried pastures, and during the first two weeks after the temperature drops below freezing following a wet period.

To properly diagnose footrot, pick up the foot and examine the soft tissue between the toes. In footrot cases, the soft tissue between the toes will be swollen and smell very bad.

Footrot is treated with long-acting sulfa boluses, long-acting tetracycline, or two daily treatments with tylosin. Topical medications are of very little value. Footrot seldom affects only a few animals in a pen. You must be on guard for other cases to develop in the same set of cattle. If it appears a substantial number of animals in a pen might become affected, mass medication of the remaining animals in the pen with sulfa and tetracycline in the feed for five days is worth consideration. Medicating all the animals through the feed will often stop an outbreak of footrot within 24 hours.

It is difficult to prevent footrot. Many producers have used iodine in the feed with questionable results. The level of iodine approved for use in the feed (10 mg/head/day) is not considered therapeutic. Research suggests that high levels (50-250 mg/hd/day) of iodine fed for 15-17 weeks can interfere with some immune function tests. However, there is some evidence that zinc methionine in the ration may have some value in preventing footrot. Zinc methionine can be used with other feed additives, including antibiotics and ionophores.

Swollen Joints

Swollen joints are linked to 12% of all cases of lameness in feedlots. These usually fall into three categories: an infection that settles in the joint after an animal

has a generalized infection; an injury to a joint; or an infection that develops in the joint after an infection in the foot was unsuccessfully treated. The most common joints involved are the front fetlock, the hock and the elbow. Stifle, hip and shoulder lameness is very rare in feedlot cattle.

Regardless of the cause of the swollen joint, the three most common isolated bacteria are *Histophilus somni*, *Pasteurella multocida* and *E. coli*. While the bacteria are often sensitive to tetracyclines and penicillin, treatment with antibiotics is not very rewarding.

Sale for salvage is often the best option for animals with swollen joints. If the swollen joint appears before the animal has cleared its drug withdrawal time from the medications and vaccines used at processing, treatment with antibiotics should be considered. An antibiotic with a short withdrawal time is recommended so that the animal can be marketed as soon as possible. Swollen joints are very painful to an animal, and the animal may not eat enough for minimum body maintenance. If the animal is under a long withdrawal time for a medication when the swollen joint is diagnosed, humane euthanasia should be considered.

Animals with swollen front fetlocks or knees may be saved. In some instances the leg can be amputated and the animal can be allowed to meet proper medication and vaccine withdrawal times.

Broken Bones

If the animal is not under medication withdrawal time restrictions, it is best to salvage the animal as soon as possible. If time restrictions exist and the fracture does not break the skin, the animal may get along quite well if kept in a small pen. The fracture will not heal, but it will allow the animal to clear the medication before marketing.

Muscle Damage

Severe muscle damage is common in newly arrived cattle and bullers. Newly arrived cattle should be allowed to rest before processing to replenish the energy in their muscles. The animals should rest for as few as six hours but for no more than 72 hours.

Muscle damage can often be traced to handling techniques. It is very important to handle only small numbers of cattle at a time and handle them gently.

Muscle damage in bullers can be severe. It is important to remove bullers from riding cattle as soon as they are noticed. When bullers are removed from a pen it is common for the animals to be re-tagged, have their implants removed and placed in a "buller pen." There is no information to support the removal of the implants, but the implants should be checked and replaced if the implant is crushed or abscessed. Finishing bullers in a buller pen does seem to be an effective management tool. Antibiotic therapy is usually not required in the treatment of bullers.

Non-ambulatory Animals

Many non-ambulatory animals have sustained an injury to the central nervous system. Response to treatment for this injury is generally poor. There are many causes for these injuries. Current US regulations do not permit salvage slaughter of non-ambulatory cattle. Euthanizing these animals is almost always the most humane and economical decision.

Injection Site Damage

Injections can cause severe muscle damage. The swelling that results can be painful and can decrease an animal's feed consumption and daily gains. Most injection site problems can be avoided if the manufacturer's recommendations are followed. Subcutaneous administration of medications, if offered as an acceptable route of administration by the manufacturer, will minimize damage to muscle tissue. Never mix drugs in the same syringe before administration. Never mix medications or accept medications that have been mixed in the same bottle.

Summary

1. Make sure you diagnose the problem before you treat the animal.
2. Most cases of lameness are in the feet and the only way to diagnose the cause is to pick up the foot for examination.
3. Check the toes for abscesses. If abscesses are present trim only enough hoof to relieve the pressure. Trimming too much can make the problem worse.
4. Inspect handling facilities daily for loose metal.
5. Footrot is a disease of the soft tissue between the toes and responds well to medication. If you do not get a good response, recheck your diagnosis.
6. Consider salvage of animals with swollen joints or broken bones before you treat them.
7. Bullers can have very severe muscle damage and should be treated with great care.
8. US regulations do not permit salvage slaughter of non-ambulatory cattle.
9. Injection site damage can be avoided by using small doses, and giving medication subcutaneously if allowed by the manufacturer.
10. Follow all medication and vaccine withdrawal times.

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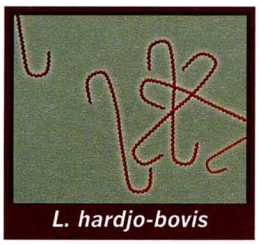
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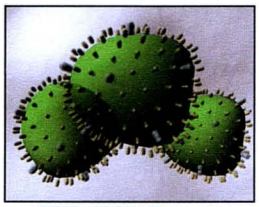
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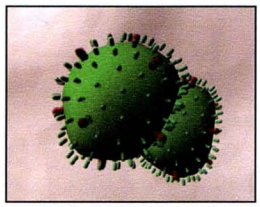
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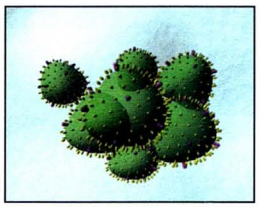
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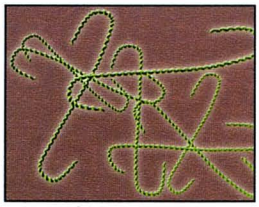
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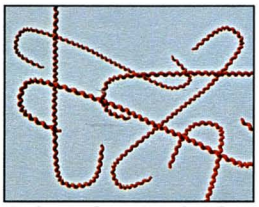
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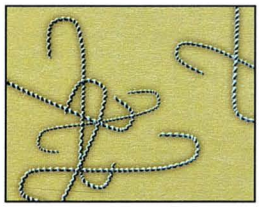
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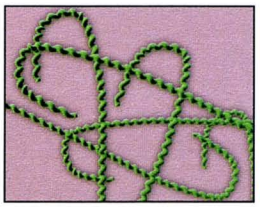
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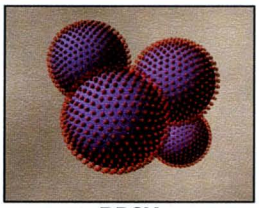
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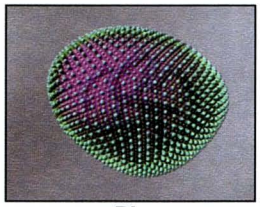
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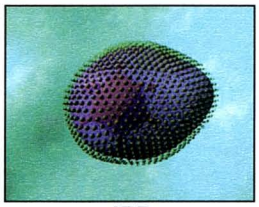
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1. Chase C. Protection with an inactivated vaccine against IBR, BRSV and BVDV. Paper presented at: Annual Meeting of the AABP. 1995; San Antonio, Texas. Vira Shield has no approved claim for duration of immunity to Type 2 BVD.

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