DEPARTMENT OF
PRIMARY INDUSTRIES

Note Number: AG1193

Published:December 2005

Updated: December 2008

Lameness in Store Weaner Cattle

This Agriculture note describes some of the risk factors predisposing to lameness in weaner cattle, the nature of their lameness lesions and some measures that can be taken to control the problem

Introduction

When recently purchased weaner cattle become lame there is a tendency to blame the hard floor surfaces of the saleyards through which they transited. However, lameness, like all diseases, is caused by multiple factors combining at the same time. This is known as the multifactorial nature of disease where animal, management and environmental factors interact to cause disease. Hard floor surfaces may or may not be the key predisposing factors causing lameness in weaner cattle after transiting saleyards.

Risk factors

The most common lesions causing lameness in weaner cattle are traumatic in origin, where there is bruising, penetration and/or excessive wear of the sole. These are described in more detail in the next section. The risk factors we must consider are those that predispose to the development of these lameness lesions.

Figure 1 provides lists of risk factors and shows how different risk factors interact to cause lameness. Animal factors that predispose to lameness include poor temperament, soft feet and heavy body weight. Predisposing environmental factors include wet weather and rough, abrasive or sharp floor surfaces. Predisposing management factors include mixing of unfamiliar cattle, recent weaning, transportation and poor handling equipment.

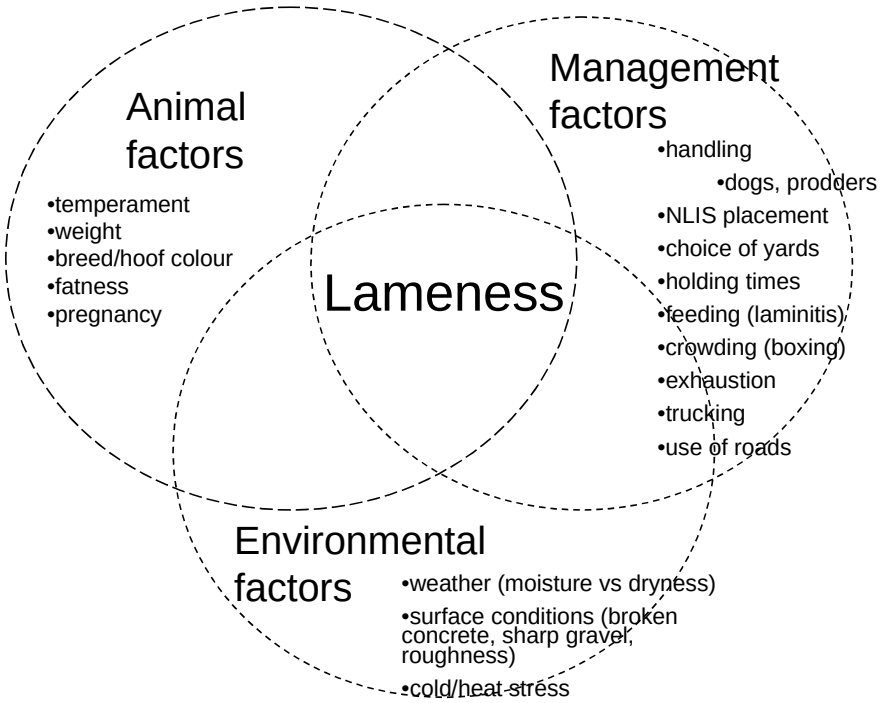

Figure 1: The multifactorial nature of lameness – a number of animal, management and environmental factors must combine to cause lameness

Specifically, poor temperament will cause animals to move, twist and turn excessively, and they may exhaust themselves, all of which leads to them taking less care in where and how they place their feet. Excessive handling, crowding, mixing cattle of different origins, using dogs and prodders will do the same thing. The consequences are excessive wear of the soles of feet, and high risk of traumatic injury. Heavier animals will suffer higher wear and concussive forces on soles. Feet softened by rain or irrigation will wear more easily. Cattle driven on bitumen roads for long distances or locked on concrete floors for extended periods can wear the soles of their hooves very thin which will predispose to bruising or penetration from rough or stony surfaces when they next encounter them.

The risk factors may combine to cause lameness at a number of points - on the farm of origin, during transport, in saleyards or at their final destination, the purchaser's farm. Many of the risk factors begin on farm and more accumulate as the animals move from one point to the next, the saleyards being a likely point where many of these factors have time to interact and take effect.

The most common lesions causing lameness in weaner cattle are traumatic in origin where there is bruising, penetration and/or excessive wear of the sole (Figure 2). One or more of these lesions may be present. The lateral (outside) claws of the hind feet are the most commonly injured, probably because these claws are subject to the most twisting and turning forces and the hind feet are subject to the highest driving forces and are more likely to be indiscriminately placed.

When bruising or penetration occur, infection can establish in the damaged tissues. The associated inflammatory reaction causes swelling and pressure on nerves which is extremely painful. This is because of the high pressure that builds up in the soft tissues between the toe bone and the rigid hoof wall. The pressure, unless relieved by surgical drainage, can force the infection up and around the hoof wall causing it to separate from the pedal bone, usually discharging pus at the coronary band (Figure 3), and sometimes causing it to extend up the leg into the tendons, ligaments, joints and large upper leg muscles, irreversibly disabling the animal (Figure 4). These injuries can lead to the death or destruction of the animal.

The nature of lameness lesions

Understanding the nature of the lameness lesions helps understand the role of different risk factors.

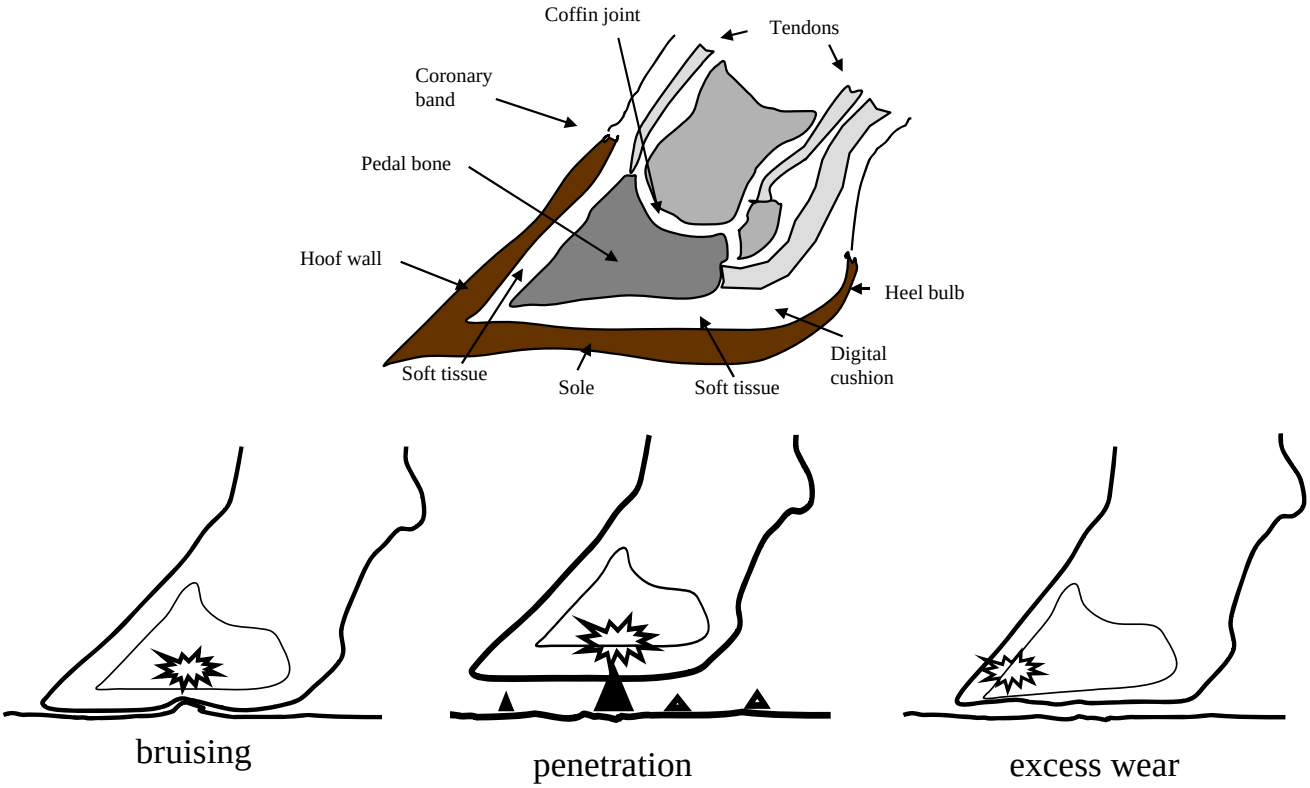

Figure 2: Schematic cross-section diagrams showing anatomy of the bovine foot and the common lameness injuries of bruising, penetration and excess wear of the sole

Figure 3: The upper claw is infected. The tip of the claw has been cut showing underrunning of the sole. Separation of the hoof wall can be seen at the coronary band on the edge of the interdigital space.

Figure 4: The dirty green tissues are where infection has tracked up the leg from an infected foot, into the rump muscles permanently disabling the animal.

It is advisable to have lame cattle examined by a veterinarian. Early treatment to drain infection from beneath the sole, remove weight bearing pressure from damaged claws using wooden blocks, and to administer antibiotics and pain killers, may prevent the cattle becoming permanently lame or "downers" and prevent the purchaser incurring a significant economic loss.

Other causes of lameness outbreaks

There are other physical lesions and disease agents capable of causing "outbreaks" of lameness in weaner cattle and they should not be overlooked as possible causes. They will only be determined by a thorough veterinary investigation and losses will only be minimised by early veterinary intervention. For example, lameness can be caused by muscle damage resulting from overexertion (such as when weaners are frightened and gallop long distances), or by mass injections (such as where vitamins/minerals may have been injected into the muscle or a dirty vaccination needle was used and infection-causing bacteria were injected into the muscle of the rump or shoulder).

Lameness can be caused by weak bones resulting from dietary deficiencies of calcium and phosphorus ("rickets"), and also by fluorine toxicity when fertilisers are mistakenly fed to cattle as phosphorus supplements. Lameness can be due to infected joints caused by infectious bacterial diseases (such as Chlamydiosis and Haemophilus somnus) which have a predilection for attacking groups of young, stressed cattle. Lameness due to inflammation of the soft tissues inside the hoof (known as laminitis) can occur when excessive grain is fed to cattle. Foot and mouth disease virus causes outbreaks of lameness and, although foreign to Australia, is an economically devastating disease for which everyone must be highly vigilant. It causes blisters of the skin between, and immediately above, the claws and in the mouth.

Preventing lameness

What can cattle producers do?

- Produce quiet, yard-trained cattle that have been weaned at least a few weeks before sale,
- Transport them to saleyards so as to avoid foot injuries.

What can livestock agents do?

- Promote good stockmanship, particularly quiet handling of livestock. Use dogs sparingly, avoid excessive use of electric prodders and maintain a calm environment in the saleyards.
- Avoid mixing different groups of cattle,
- Identify and pay particular attention to high-risk cattle such as those that are heavy, stirry, fat and heavily pregnant. Take into consideration trucking distances if purchasing high risk cattle.

What can transporters do?

- Ensure anti-slip grid mesh on floors of stock transport vehicles is non-traumatic,
- Handle cattle quietly and carefully and comply with published Codes of Practice for transport of livestock.

What can purchasers do?

- Have "outbreaks" of lameness promptly investigated to determine and treat the cause so as to prevent losses,
- Become aware and avoid purchasing high-risk cattle.

What can saleyard operators do?

- Develop saleyard policies and procedures including risk management plans to identify and eliminate hazards in saleyards particularly broken concrete, sharp edges and slippery surfaces. Consider soft flooring options for selling pens and holding yards,

- When designing or renovating yards, ensure there are adequate numbers of yards and space to prevent having to mix and redraft cattle,
- Get professional advice on concrete yard floor design, particularly groove pattern design to minimise slip, trauma and improve drainage,
- Avoid using gravel in areas where it may be carried onto concrete floors,
- Minimise the number of corners in saleyards to minimise cattle twisting and turning,
- Place saleyard equipment, including NLIS readers, in strategic locations to minimise handling and movement of cattle,
- Identify high-risk areas in yards (ie slippery, rough surfaces, sharp edges) and minimise exposure of high- risk cattle to them (ie reduce holding times).

Acknowledgements

This Agnote was developed byTristan Jubb, December 2005.

It was reviewed:

Maria Crawford, December 2007.

Maria Crawford, Farm Services Victoria – Animal Health Field Services. December 2008.

ISSN 1329-8062

Published and Authorised by: Department of Primary Industries
1 Spring Street
Melbourne, Victoria

which may arise from you relying on any information in this publication