

Optimal management strategies for weaner cattle to minimise sickness

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Sending cattle to feedlots

Cattle consigned to feedlots are confronted with a variety of different challenges and experiences. They are transported, inducted, mixed with stock from different origins and exposed to stressors and infectious agents they have not previously encountered. The way in which they handle these challenges will have a big bearing on how they perform. There are a number of management techniques that will help animals in the feedlot adapt quickly to the environment once they enter the feedlot. An understanding of the major health issues encountered by cattle in feedlots will enable the development of management strategies for the preparation of weaner cattle.

Health Problems in Large Commercial Feedlots

The main health problems can be subdivided into three main groups:

1. Bovine Respiratory Disease (BRD)

This is the major cause of sickness in feedlots. Normally 5 to 10% of cattle entering feedlots are treated for BRD problems. BRD is caused by viral infections (IBR, P13 and BRSV) and bacterial infections like *P.haemolytica* and *H.somnus*. Often mixed bacterial and viral infections occur.

BRD can affect up to 30% of animals in individual lots and cause death loss of up to 10 times the normal rate.

2. Gastro-Intestinal Disease

This includes animals that don't eat, poor doers and nutritional problems like bloat, alkalosis and acidosis. The non-eaters and poor doers normally make up only 0.5 to 1.2% of cattle. Bloat and acidosis cases are mainly the result of feed management problems. The role between non-eating and alkalosis (high pH) is becoming more established. Alkalosis (dead belly) has now been shown to be a significant problem in slow starting and poor adapting cattle.

3. Lameness

These problems include infectious foot conditions like abscesses and footrot and non-infectious conditions often due to traumatic injuries. In some mobs, up to 20% of animals are treated for foot problems. Not many deaths are experienced, but some animals do not recover and are culled. The main losses from lameness are due to poor performance and out of specification animals at market. Injury type lameness can be contributed by loading and unloading, standing on concrete

saleyard pens for long periods and the general movement and knocking around that can happen at saleyards and in transit. Other more subtle problems (*Mycoplasma* and *Chlamydia*) can also cause lameness problems.

The severity of health problems varies greatly between feedlots and also at different times of the year. Production losses are due to death loss, treatment cost, labour costs, reduced performance and extended feeding times which may be due to withholding period compliance or in an attempt to ensure cattle fit into market specification.

Reasons for Health Problems

There are two main issues involved in why cattle have health problems. Firstly the immune status of the animals - this determines how well they cope with disease challenges during the feeding period. Secondly, the level of stress (physical, physiological and psychological), which the animals need to endure. High levels of stress can severely compromise the immune system of animals and is the single most important factor in determining whether animals get sick or not.

Factors Contributing to Health Problems

1. **Cattle age.** Younger cattle generally have more health problems than older cattle. Very young calves and unweaned calves suffer more stress and have more problems. Younger animals have a less well-developed immune system and therefore are at greater risk of having health problems.
2. **Source/origin.** Saleyards cattle have the most health problems. The nature of saleyards is that they attract cattle from many different sources with a wide variety of different pathogens and some cattle from herds which have had very little contact with infectious agents. Cattle from naïve herds can suffer severely due to a low level of immunity when they arrive at a feedlot. These cattle are exposed to a range of pathogens which they have never been exposed to before.
3. **Breed.** Some breeds have better resistance than others and seem to cope better with stressful situations.
4. **Management prior to arrival.** Quiet cattle are easy to handle and settle down quickly. Cattle that have been yard weaned have much lower sickness levels than paddock-weaned cattle (Please refer Lloyd Fells paper pages 62-63). Properly weaned cattle

adapt to the feedlot much better than unweaned calves.

Other management techniques such as correct and complete vaccination, castration, speying, dehorning and pregnancy testing should be done prior to arrival. Adequate recovery time must be given to the animals before entry into the feedlot.

5. **Shrinkage.** From a health perspective, stock that lose too much weight during transport perform badly when they arrive at feedlots. Dehydration of over 5% is serious and some animals can lose up to 22% of body weight. This, combined with time off feed, creates serious problems.
6. **Time off feed.** Animals that are kept off feed during sale and transit can be badly affected. Animals with an empty gut lose populations of rumen bacteria and protozoa which are essential for digestion. The rumen fermentation process can stop altogether with extended time off feed. Animals arriving with “dead bellies” take time to return to normal even after they commence eating. This process is aggravated by saleyard curfews. It takes up to 3 weeks for the rumen population to be fully re-established.
7. **Time in transit.** Long trips can knock cattle around. The longer the time from mustering to arrival at the feedlot, the longer the time off feed and the more severe the subsequent problems are likely to be. Just standing on truck floors for extended periods can cause lameness and injury. One of the most important factors to consider is the total time in transit when trying to perform a risk assessment on a group of cattle.

Strategies to Reduce Health Risk

1. **Know the specifications** required for the animals to be consigned and make sure the consignment meets those specifications. These include age, individual animal weight, frame score, hip height and condition score. Sending cattle that meet the specifications ensures they have every opportunity to compete with their pen mates. It also maximizes the opportunity for a high level of compliance to the intended market once the animals have completed their feeding period.

The objective of feeder cattle is to have cattle without an excess of body fat, have a good frame score and good weight for age. These are the cattle which are most profitable to feed on.

2. **Yard wean calves.** Keep them locked in secure, safe yards for 5 to 10 days. Give them access to clean water troughs with a yard-stocking rate of no less than 4m²/head. Teach them to eat hay or silage in troughs or bunks and daily feeding of some total mixed ration is useful. They should all be eating freely before they are let out. Daily human contact is important. Walk through the yards, talk to them, walk them through the race and crush is also useful in helping to quieten them down.

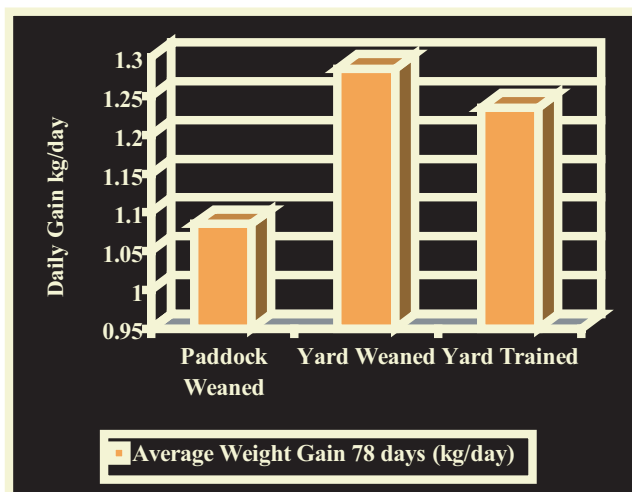


Figure 1. Feedlot Daily Gain

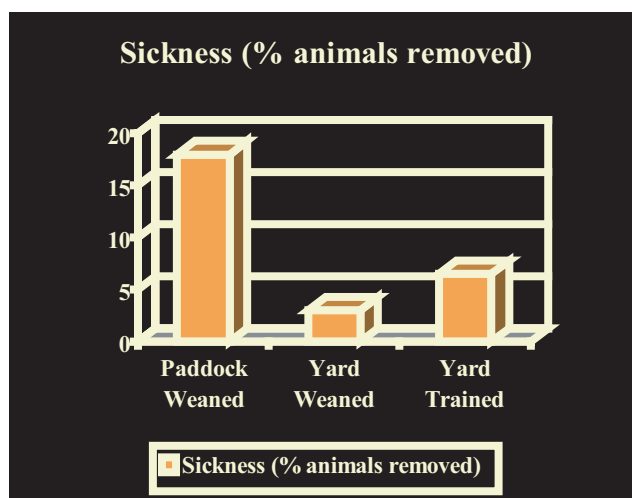


Figure 2. Feedlot Daily Gain

Figures 1 & 2 are the results of work by L Fell, NSW Agriculture, Armidale. They report the effects of weaning management on feedlot gain and of sickness level (mainly BRD) in calves run in commercial feedlots over three years. Yard weaning at high density resulted in significant increases in performance compared to traditionally weaned calves. Best results were achieved by combining yard weaning and pre-feedlot vaccination for BRD. Vaccinated, yard weaned calves settled onto feed faster, grew faster and in one year, grew 60% faster in the first month on feed. Yard weaning and correct vaccination will maximise the chance of calves performing well when fed.

3. **Management practices.** Ensure all steers are fully castrated before consignment. Dehorn horned calves early and well before sale. Ensure dehorning and tipping wounds have completely healed before shipping. Pregnancy test heifers before consignment and remove pregnant females. Vaccinate all calves with 5 in 1 or 7 in 1 vaccine ensuring the animals receive two doses of vaccine 4 to 6 weeks apart.

A commercial IBR intranasal vaccine (Rhinogard) is now available. (Contact your veterinarian with respect to the use of this product). Vaccines for *Pasteurella haemolytica* and BVD (pestivirus) will also be available in time. Vaccination for these major respiratory diseases 3 to 4 weeks prior to entry to the feedlot will drastically reduce losses experienced from BRD. Respiratory losses and health costs will be substantially reduced and improved weight gains and improved feed efficiency will also occur. This for a modest outlay.

Ensure a parasite management programme is in place for internal and external parasites. Remember cattle cannot become infested with internal parasites in a feedlot, due to the fact that life cycles cannot be completed. However, pre-existing parasite burdens can severely affect performance, especially in domestic feeding programmes.

4. **HGPs.** Most feedlots use Hormonal Growth Promotants (HGPs) in their management programme. Many are happy to buy cattle that have been implanted previously and where this is the case you get the benefit of the HGP while meeting feeder weights. Using HGPs on feeder cattle can limit your market options. Some feedlots do not use HGPs and will not buy cattle that have been treated. Check the approach taken by your likely buyers before using any HGPs. The EU market is closed to all HGP treated animals.
5. **Cattle Selection.** A feedlot consignment should not be seen as an opportunity to get rid of a heap of culls by mixing them in the mob. Only send those that meet the specifications for weight, age, frame score, hip height and body condition score. Don't send bad temperament cattle and keep out the ones with structural problems. In cattle fed for more than 120 days, animals with poor structural soundness will struggle to perform. Your cattle will be used to assess your worth for future consignments. Sending unsuitable cattle can affect cattle performance and your reputation as a supplier.

Growing or Backgrounding Cattle

Growers and backgrounders have special challenges with cattle that are purchased from different sources and put together into a consignment. Different lots need to be sorted into suitable lines based on specifications. They should receive a standard health programme that includes drenching, fluke treatment where necessary and vaccination for both 5 in 1 and BRD. IBR vaccine is available now and P.haemolytica and BVD vaccine will shortly be available.

All cattle should be trained to eat and drink from troughs. Different consignments should be mixed to allow cattle to sort out their social order and to ensure exposure to the pathogens they carry. Mobs should not be remixed within 4 to 6 weeks of dispatch.

Nutrition during the growing phase is critical to subsequent feedlot performance. Cattle that are to be long fed for high quality marbled markets are best kept growing at a minimum of 0.6 to 0.7kg/day. Cattle to be short fed can afford a period of growth check, as they will compensate when nutrition improves or when placed on feed. Marbling performance is reduced for long fed cattle if any growth check is severe or prolonged. To keep cattle growth constant, avoid sudden changes in feed quality and diet when moving paddocks. Don't graze pastures too low as this reduces intake for the period before changing paddocks. Rotations are good for growing steers if they are not forced to graze too low and the new paddocks are similar in feed quality to the one they are leaving.

Transport to Feedlot

Cattle off feed and water for longer than 12 hours or more have an increased risk of rumen shut down. The curfew involved at saleyards is one reason why most feedlots prefer to buy direct from farm. Since payment is often based on live weight measured at the feedlot on delivery, minimizing shrink is important. Work out transport plans with the trucking company and the driver. Minimize the time cattle are held in stockyards and avoid travel delays enroute as much as possible.

Before transport, cattle should be yarded and provided with water and good quality hay. Filling up on dry feed will mean less moist dung in the truck and feed that lasts longer in their system. Loading and unloading as little as possible reduces leg and foot injuries. Short haul cattle are less prone to problems but the feeding and pre-transport care is still very important.

Summary and Conclusion

The main health problems confronting feedlot cattle are BRD, gastro-intestinal problems and lameness. The main reasons for health problems are poor immune status and the level of physical, physiological and psychological stress endured.

The factors that contribute to poor feedlot health were discussed. These include age, source, breed, pre-arrival management, shrink, time off feed and transit time.

Once the factors contributing to poor health have been identified, strategies to overcome these challenges can be introduced. These include knowing the market and the benefit of yard weaning. Yard weaned calves consistently start better and perform better in the first two months in the feedlot.

The importance of performing basic management procedures to reduce feedlot stress was discussed. This ensures that the cattle have the best chance of starting well with minimal problems. Select cattle that are suitable and can handle the hostile feedlot environment and are less likely to break down and perform poorly.

The benefit of backgrounding was discussed. If done properly, cattle, which have experienced a backgrounding program, can perform exceptionally well.

The effects of transportation cannot be under-estimated. The problems of long transit times leading to "dead belly" and ruminal alkalosis was highlighted as an important but under-estimated problem.



Notes