

ANIMAL WASTAGE IN FEEDLOTS

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SUMMARY

An investigation was undertaken to quantify the major causes of animal wastage associated with the lotfeeding of beef cattle. Animal wastage is defined as the proportion of cattle entering the feeding system that fail to meet target market specifications after an acceptable feeding period. Three commercial feedlots on the Darling Downs of Queensland were selected to provide a representative cross-section of the lotfeeding industry. Data were collected on 37 133 cattle to determine the cause and magnitude of feedlot wastage. The most important factors affecting animal wastage in feedlot cattle were unsuitable weights and ages at the point of leaving the feedlot. Disease and feedlot related abnormalities contributed little to feedlot wastage.

Keywords: beef cattle, feedlot, animal wastage, disease

INTRODUCTION

The lotfeeding of beef cattle in Australia is a major growth industry with an estimated 1994 throughput of 1.18 million head which represents 14% of all cattle slaughtered (Anon. 1995). Projections indicate that the feedlot industry will continue to grow in response to increased demand from both domestic and export markets. Beef intended for the high quality north Asian and premium domestic supermarket trades must meet stringent specifications and concern has been expressed about Australia's ability to meet such demands (Anon. 1995). Down gradings of between 35% and 55% of lotfed cattle intended for the medium and long fed Japan ox markets have occurred (Anon. 1995) which imply significant wastage and raise concern for the economic viability of the Australian feedlot industry.

There is a noticeable lack of information on the magnitude and cause of animal wastage in Australian feedlots. American research (Griffin 1984; Edwards 1989) has identified disease as a major animal wastage factor causing appreciable economic loss to their industry. Research into losses occurring in the Australian feedlot industry (Dunn 1994) has concentrated on the importance of diseases but has neglected the significance of failure of animals to meet market requirements. The objective of this study was to identify and quantify the major areas of animal wastage associated with the lotfeeding of beef cattle in Queensland.

MATERIALS AND METHODS

Three commercial feedlots on the Darling Downs of Queensland were used for this investigation. Each feedlot was characterised by different management strategies and was selected to provide a cross-section of the Australian feedlot industry. Where possible, individual lots of cattle were followed through each feeding system and animal wastage categorised.

Feedlot 1

This feedlot has a capacity of 5000 head and specialises in finishing purchased *Bos taurus* steers suitable for the long fed Japanese ox trade. Cattle were sourced from local saleyards and fed a high energy diet for approximately 250 days. A total of 1356 steers entered this feedlot over a 6 month period and the incidence and cause of diseases and other abnormalities were recorded. Detailed carcass evaluations were undertaken on 228 steers to ascertain market suitability.

Feedlot 2

This is a custom feedlot with a capacity of 15 000 head and specialises in supplying the local supermarket trade with steers and heifers grainfed for 70 days. Animals studied included 103 steers and 180 heifers where morbidity, mortality and market suitability data were compiled.

Feedlot 3

This 7 000 head feedlot forms a part of an integrated grazing finishing enterprise where Brahman x Shorthorn cattle, bred in northern Australia, are finished. Steers entering this feedlot are intended for the shortfed Japanese market while yearling heifers are prepared for the local supermarket trade. Data were

collected over a 2 year period on 35 494 cattle and morbidity and mortality determined. The 12 147 cattle introduced into the feedlot in the first 6 months of 1995 were classified as to their market suitability.

RESULTS

Morbidity and mortality of cattle in 3 feedlots on the Darling Downs is shown in Table 1. In feedlots 1 and 3 where large numbers of animals were studied, mortalities of 0.12% and 0.16% respectively indicates little wastage attributable to cattle deaths.

Table 1. Diseases, abnormalities and mortalities in feedlot cattle on the Darling Downs

Feedlot	Number of cattle assessed	Disease and abnormality (%)	Mortality (%)
1	1356	10.91	0.12
2	283	4.24	0
3	35494	0.265	0.16

The incidence of disease and feedlot related conditions varied greatly between the 3 feedlots. Where all steers were purchased from saleyards and entered the feedlot as a mixed group (feedlot1), the incidence of disease and other abnormalities was appreciably greater than in those feedlots where cattle originated from a single source and mixing in the feeding pens did not occur (feedlots 2 and 3). Details of the prevalence of diseases and feedlot related conditions are illustrated in Figure 1.

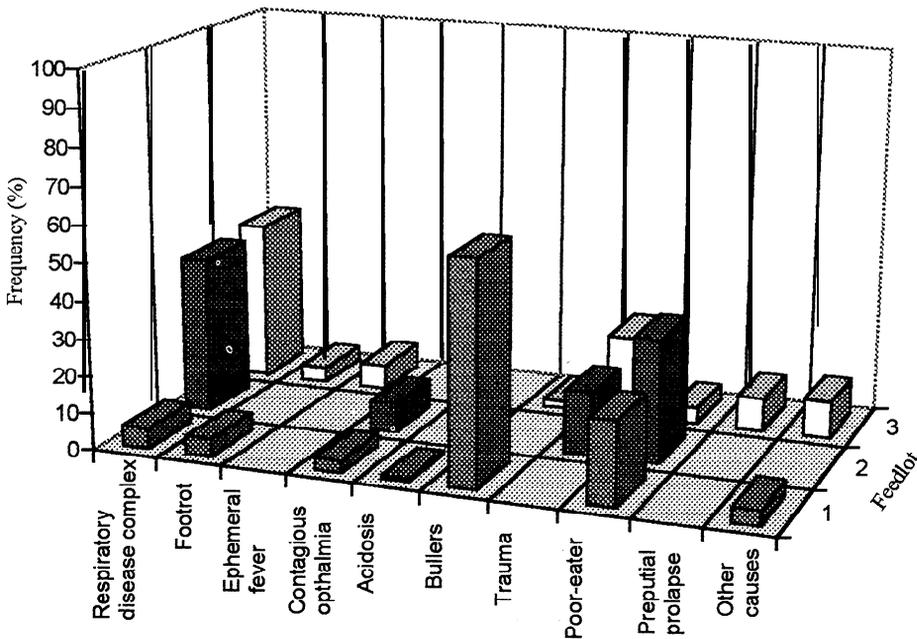


Figure 1. Distribution of diseases and abnormalities in affected feedlot cattle

In feedlot 1 the major problem encountered was bulling (steers repeatedly mounted by others) which accounted for 59.5% of all animals requiring hospitalisation. In feedlot 2 where custom feeding was practised, 42% of all cases requiring treatment was due to respiratory disease complex, while in feedlot 3, 43.5% was due to the same condition. The incidence of poor eaters or animals which consumed little feed was the second most common cause of treatment in feedlots 1 and 2.

The proportion of animals that failed to meet market specifications was 7.5%, 23.3% and 13.7% of animals that entered feedlots 1, 2 and 3 respectively. Causes of market failure and the relative significance of each are displayed in Figure 2.

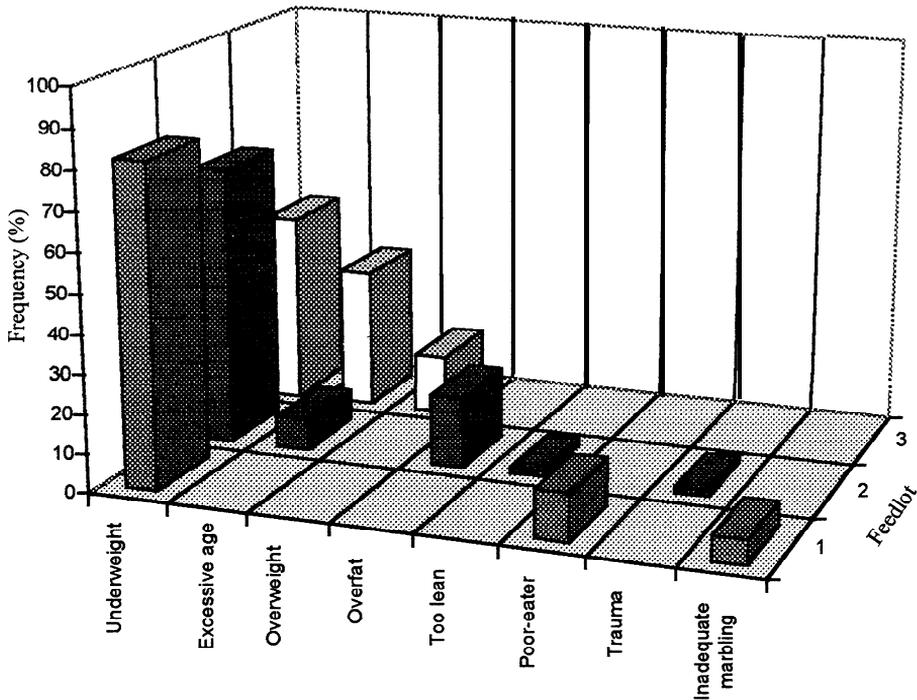


Figure 2. Causes of failure of cattle to meet market specifications

DISCUSSION

The incidence of disease and feedlot related conditions encountered in this study are in agreement with the findings of surveys undertaken by Dunn (1994). The high incidence of buller steers encountered in 1 feedlot where stock were purchased from saleyards and mixed in the feeding pen was not a problem in those feedlots where mixing did not take place. Such a behavioural abnormality has also been observed by Irwin *et al.* (1979) where the mixing of foreign cattle was found to be a contributing factor. The use in this feedlot of chopped green forage during the conditioning phase possibly increased serum oestrogen levels which may act in synergy with hormone growth promotants in predisposing steers to bulling (Pierson *et al.* 1976).

It was found that disease and mortalities contribute little to overall animal wastage that normally occurs in feedlots despite the major impact of occasional severe disease outbreaks. This study suggests that the major factors contributing to animal wastage are those that can be attributed to the animal prior to entry into the feedlot. The most important cause of wastage across all feedlots was failure of cattle to meet minimum market weights and this was associated with underweight cattle at the time of entry to the feedlot. Overweight cattle were encountered in local supermarket trades only. Animals too old to meet market specifications were the second most important source of wastage in 1 feedlot and were of some importance in another. Where the high quality local supermarket trade was targeted, overfatness was of major concern and was second only in importance to underweight. Because marbling was not a market requirement in local

trade cattle and of minor importance in shortfed Japan ox, it was not a significant defect other than in steers destined for the long fed Japan ox category and even here only 6% of steers failed to meet market specifications because of inadequate marbling.

This investigation has highlighted significant animal wastage in the lotfeeding of beef cattle for both the domestic and Asian export markets. The selection of cattle prior to entry into the feedlot for weights and carcase characteristics suitable for market requirements will reduce animal wastage presently occurring in Australian feedlot cattle.

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