

THE INFLUENCE OF CATTLE YARD DESIGN ON THE MOVEMENT OF ANIMALS

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The efficiency of cattle yard design has become more important with increasing labour costs, and greater awareness of losses from carcass damage and stress caused by poor handling. As there is little objective information on the handling efficiency of various yard designs, the handling efficiency of two basic types of yards was compared on eight properties in Victoria.

Four commercial cattle yards of traditional design with straight force yards and straight races were compared with four circular yards with curved races based on designs recommended by the Victorian Department of Agriculture (Vowles 1980) in terms of time to carry out standard simulated husbandry practices. On each property, approximately 50 head of cattle of similar type and age were moved through the forcing yard and race in two ways. Firstly the cattle were held in the race for 15 seconds per animal in that fill to simulate a race treatment situation. The second time through, the cattle were released immediately after the race was filled to simulate race drafting. On each property, the yards were worked by the owner in his normal fashion and the operations recorded on video tape from which data was taken for analysis.

The mean actual movement times (total - 15 sec./animal treatment time) for the traditional and circular designs were 9.4 ± 1.3 (\pm S.D.) and 6.0 ± 1.4 seconds per animal respectively. The corresponding times for the second run through the race in the drafting operation were 10.3 ± 3.0 and 5.6 ± 1.2 sec./head. The mean times for both operations through the yards were 9.8 ± 2.2 and 5.8 ± 1.2 for the traditional and circular yards respectively. In each case, the circular yards were significantly faster ($P > 0.05$).

Although the mean race length for the traditional and circular design were different (11.1 ± 4.3 metres C.V. 18.1 ± 1.5 metres respectively), the resulting number of race fills required to handle the cattle did not appear to be an important factor in cattle movement times. This was demonstrated in the traditional type yards where there was no apparent correlation between movement times and the variable race lengths in the yards tested. Factors such as stockmanship, breed of animal and the familiarity of the animals with the yards may well affect the efficiency of yard design, but we believe that in these cases, they did not contribute greatly to the significant differences observed in this experiment.

These comparisons demonstrate that cattle yard efficiency can be improved by improved yard design. It is believed that circular forcing areas and curved races use the behavioural characteristics of cattle to advantage (Vowles 1982), and can reduce the time spent in physically moving and handling of animals by up to 50 per cent.

VOWLES, W.J. (1980). A Circular Cattle Handling Facility for 50-300 head. Agnote. Department of Agriculture, Victoria.

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