The Effect of Cattle Handling on Body Temperature

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Heat stress occurs when cattle are unable to effectively dissipate heat (of metabolic, locomotion and environmental origin). The Australian feedlot industry recommends cessation of all cattle handling, movement and shipment activities during such events. Mader *et al* (2005) reported movement and handling of feedlot cattle in the USA increased average tympanic temperatures by 0.3 to 0.8°C. The objective of this report was to quantify the influence of cattle handling (transfer from paddock to feedlot pens via the cattle yards) on body temperature and determine the recovery time required for cattle to return to pre-handling body temperature levels. The observation was conducted at Induction of a feedlot study designed to evaluate nutritional intervention to ameliorate the effects of heat stress in feedlot cattle.

The feedlot study consisting of 176 yearling Black Angus steers (395 ± 21.3 kg) commenced in November 2007. Sixty one of the steers were surgically implanted with digital temperature transmitters (Sirtrack Ltd., Havelock Nth. New Zealand) into a muscle pocket, approximately 50 to 80 mm below the skin at the right para lumbar fossa. At feedlot induction on November 12, 2007 the 176 steers were quietly walked from a 20 ha paddock to the cattle yards, a distance of approximately 500 m. From approximately 1300 hour, when in range of the telemetry receiver (TR-5, Telonics, Inc. Mesa AZ, USA), body temperatures of the 61 steers were acquired every 30 minutes and continued to be acquired as steers were handled and worked through the cattle yards for drafting, including through a race up to 3 times over a 4.5 hour period then quietly walked to their relevant treatment feedlot pen. The weather conditions on the day were overcast with a maximum temperature of 27.5°C.

Figure 1 shows the effect of handling on mean body temperature of the 61 steers over the observation period. Mean body temperatures increased up to 1.5°C during the handling period in this observation and required 2 to 3 hours recovery in feedlot pens before body temperatures returned to observed rest levels. The body temperature of the steers at rest (nil handling, access to feed and water in feedlot pens) during the subsequent 120 day feedlot study approximated 39° C.

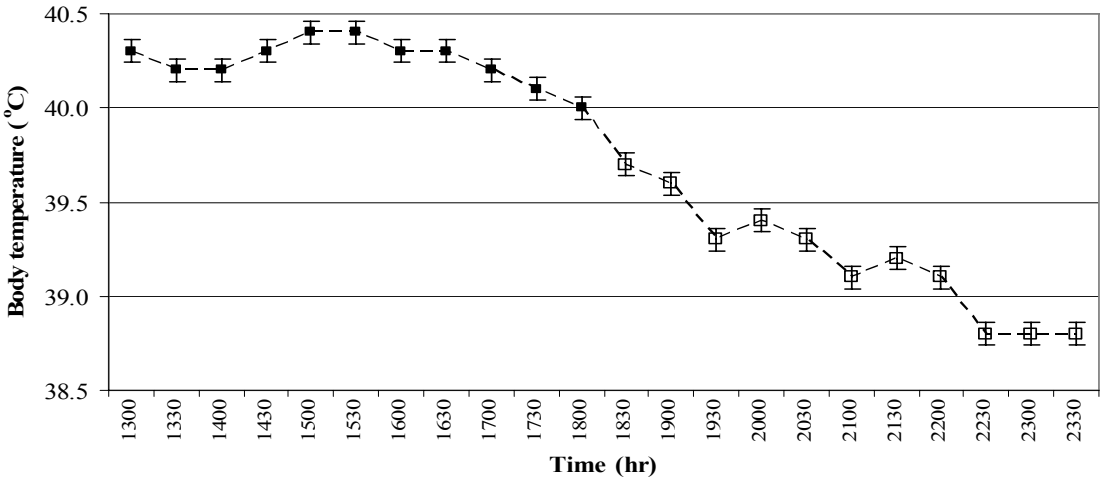

Figure 1. Mean cattle body temperatures during handling through the yards (⊣■⊢) and at rest in the pen (⊣●⊢).

These results quantify the effect of cattle handling and related increases in body temperature. Ceasing cattle handling provides a practical management tool to lower body temperature. This has implications for management of cattle during a heat stress event.

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Mader, T.L., Davis, M.S. and Kreikemeier, W.M. (2005). *Prof. Anim. Sci.* **21**, 339-343.
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