

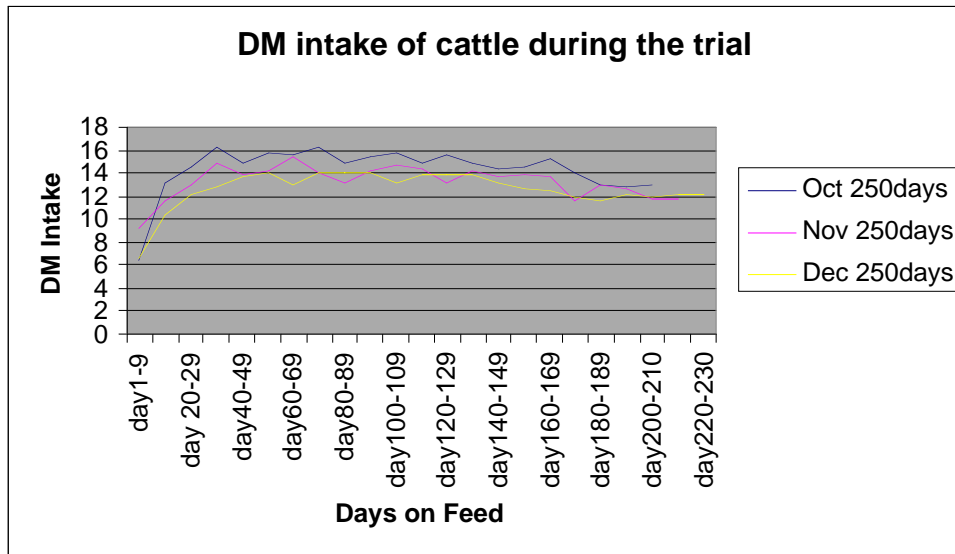
The effect of heat stress on carcass characteristics of beef cattle

Y.Sakaguchi and J.B. Gaughan

It is generally accepted that *Bos taurus* cattle will have better feedlot performance than *Bos indicus* cattle when they are exposed to temperate environmental condition, however, *Bos taurus* cattle are often unable to show the same levels of performance during the summer or under hot conditions. Numerous attempts have been made to show the relationship between feed intake and performance with climatic condition, however, little is known about the effect of heat stress on carcass characteristics of beef cattle finished in feedlots.

Three hundred twenty five Angus steers were used to investigate affects of heat stress on feedlot performance and carcass characteristics. The steers were inducted to the feedlot between October and December 2001 and were fed a grain ration for 179-223 days. The steers were individually identified and weighed at entry. Data used in this study included entry and exit liveweights and total feed intake, from which average feed conversion efficiency and average daily gain were calculated. Approximately twenty four hours prior to slaughter, the steers were transported to an abattoir located 70km east of the feedlot. When the steers were slaughtered, carcasses were ribbed (between 12th and 13th ribs) and carcass weight were recorded within 1h post mortem and chilled. After overnight chilling, P8 fat depth, eye-muscle area, marbling score, meat colour, and fat colour were recorded and Aus-Meat quality were determined.

October induction cattle (OIC) were well adapted to high heat load among the cattle group, however, from the economic point of view, December is an ideal month for cattle induction in summer. Although OIC had greater feed intake than November induction cattle (NIC) or December induction cattle (DIC) at high ambient temperature(Figure 1), DIC showed a higher feed conversion efficiency (FCE) than OIC or NIC during the trial period. DIC had greater eye-muscle area and marbling score than NIC and lower subcutaneous fat thickness than OIC. NIC had the lowest marbling score and subcutaneous fat thickness and meat colour from NIC were darker than other cattle group (Table 1).



Traits	Induction Month		
	October	November	December
Liveweight	689.93	646.84	652.29
Carcass weight	430.44	391.99	398.12
P8 fat thickness	25.37	18.45	22.95
Eye-muscle area	74.84	83.84	84.02
Marbling score	2.12	1.9	2.18
Meat colour	1	1	1