

OPTIMISING FEED SUPPLY, REPRODUCTIVE EFFICIENCY AND PROGENY GROWTH TO MEET MARKET SPECIFICATIONS. 4. EFFECT OF FINISHING GROWTH PATHS ON CARCASS QUALITY

B.L. MCINTYRE, T.J. DELLA BOSCA, D. READ, W.G. SMART and G.D. TUDOR

Department of Agriculture WA, Locked Bag 4, Bentley, WA 6983

Due to the strong seasonality of the Mediterranean climate in the south west of Western Australia, beef production systems are based on finishing of 9 month autumn-born calves that are weaned in summer and subsequently turned off feedlots in autumn or off pasture the following spring and summer. This results in peaks and troughs in the turnoff that are not conducive to the development of export markets that require a consistent supply of carcasses that meet specifications. A strategy that may extend the turnoff period is to produce calves in winter so that they are younger and lighter at weaning for the available finishing systems. This project evaluated the meat quality of carcasses derived from autumn- and winter-born calves subjected to 3 different finishing regimes.

A total of 89 steers and 78 heifers from the autumn calves (AC), and 83 steers and 79 heifers from the winter calves (WC), were transported 1-2 days after weaning to Vasse Research Station. They were fed dry pasture and hay, silage and grain supplements, and were systematically allocated to their treatment groups on the basis of sex, sire and weaning liveweight (Tudor *et al.* 2004). The fast growth treatment (ACF and WCF) groups were fed a feedlot diet of barley, lupins and hay. The slow growth treatment (ACS and WCS) groups initially grazed the available dry pasture, and were fed supplementary hay and silage *ad libitum* up to early June, when sufficient green pasture was available. The weight loss and compensatory growth treatment (ACC and WCC) groups also grazed dry pasture, but received limited amounts of supplementary hay to control the extent of weight loss to 10 % of weaning weight. From the end of May, these animals grazed paddocks with adequate green pasture. All animals in the various treatment groups were slaughtered when the average weight of the steers reached approximately 500 kg. Following slaughter, standard Ausmeat carcass measurements were recorded, and all carcasses were graded by an MSA grader.

Table 1. Carcass characteristics of cattle from autumn and winter born calves finished on 3 finishing regimes (see the text for details).

Finishing regime	ACF	WCF	ACS	WCS	ACC	WCC
N	54	52	55	54	57	54
Hot standard carcass weight (kg)	263.2	264.1	256.7	242.3	249.8	240.3
P8 fat thickness (mm)	13.0	12.9	9.61	10.11	10.61	11.66
Eye muscle area (sq cm)	65.6	67.9	61.6	65.4	59.1	64.7
Ossification score	133	136	147	136	140	137
Ausmeat marbling score	0.83	1.67	0.53	0.81	0.50	0.78
US marbling score	331	365	250	285	245	281
Rib fat	9.1	10.4	6.4	9.4	6.6	10.1
Ultimate pH	5.48	5.49	5.58	5.59	5.56	5.58
No. failing to grade MSA	1	0	13	18	11	15

The major difference in carcass characteristics between the groups was the high proportion that failed to meet MSA requirements in the pasture fed groups compared with the 2 grain fed groups (Table 1). High meat pH associated with unacceptable meat colour accounted for 23 of these carcasses, while a further 9 had pH below 5.7 and unacceptable meat colour. In the ACS and ACC groups, the high pH may be due to falling muscle glycogen levels as a result of slaughter in November when the pasture quality was beginning to deteriorate. Following this outcome, the WCS and WCC groups were supplemented with 2 kg per head per day lupins for the last 2 weeks before slaughter in December. Despite this supplementation, high muscle pH was still a problem. The other major reasons for failure to grade were inadequate fat distribution (20) and hide puller damage (14). All other carcass characteristics were within acceptable market specifications for the various groups.

TUDOR, G.D., DELLA BOSCA, T.J., MCINTYRE, B.L., READ, D., SMART, B., TAYLOR, E.G. and HISCOCK, T. (2004) *Anim. Prod. Aust.* 25, (This proceedings).

Email: bmcintyre@agric.wa.gov.au