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Growth, carcass characteristics and meat quality of heifers and steers born to beef-cross-dairy COWS

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Abstract

In New Zealand, there is an increasing influence of dairy breeds in the production of beef. First-cross beef-cross-dairy cows have shown potential as beef breeding cows due to their greater milk yield than straight-bred beef cows. There have been few studies examining the finishing characteristics of the progeny of such cows. The objectives of this study were to investigate the effect of breed-cross on growth, carcass characteristics and meat quality attributes for progeny of beef and beef-cross-dairy cows grown in a New Zealand pastoral production system. This study also aimed to determine if there were differences in breed effects between heifers and steers.

Growth, carcass characteristics and the meat quality were assessed for steers and heifers from beef and beef-cross-dairy cows. Heifers (n=53) and steers (n=50) were born to Angus (AA), Angus-cross-Friesian (AF), Angus-cross-KiwiCross (AK) and Angus-cross-Jersey (AJ) cows and sired by Charolais (C) bulls. Heifers and steers were grazed on pasture until slaughter at 574 and 784 days of age respectively. Live animal measurements were considered separately for heifers and steers. Carcass characteristics and meat quality attributes were compared among breed-crosses and between heifers and steers.

The C-AA heifers (226.8 ± 4.7 kg) and steers (238.8 ± 4.6 kg) were lighter at weaning than the beef-cross-dairy breed heifers (C-AJ = 239.9 ± 4.6 kg, C-AK = 254.7 ± 6.3 kg, C-AF = 258.9 ± 5.7 kg) and steers (C-AJ = 256.1 ± 4.9 kg, C-AK = 257.0 ± 7.2 kg, C-AF = 267.0 ± 5.7 kg) ($P < 0.05$); however, there were no differences in the final live weight of breed-crosses ($P > 0.05$). The C-AA (53.1 ± 0.3 %) steers had a greater dressing-out percentage than C-AF (51.9 ± 0.4 %) and C-AJ (51.5 ± 0.3 %) steers ($P < 0.05$). There were no differences in carcass weight, length, eye muscle area and fat depth C among breed-crosses ($P > 0.05$). Steers were longer, heavier, had a greater fat depth C and greater proportion of intramuscular fat than heifers ($P < 0.05$). Generally there was no difference in the meat quality among breed-crosses ($P > 0.05$), except that C-AJ cattle had yellower fat than C-AA, and C-AA and C-AF cattle had redder fat than C-AK. There was no interaction of breed-cross with sex effects. Therefore, the C-AA cattle were more suited to a finishing system than C-AF, C-AK and C-AJ cattle.

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