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Background

Reducing slaughter age, while maintaining carcass output, will improve the sustainability of beef production systems, and will result in lower lifetime emissions from cattle, while also reducing the carbon equivalent per kilogram of beef carcass. The objective of this study was to investigate the strategic use of concentrate feed within pasture-based dairy-beef steer production systems, to establish its effectiveness in reducing slaughter age in differing animal genotypes.

Methods

Three contrasting supplementation strategies were implemented : 1) grass only (GO), pasture only diet in the first and second grazing season; 2) intermediate (INTER), concentrate supplementation throughout the first grazing season, pasture only thereafter, and 3) high concentrate supplementation (HIGH), concentrate supplementation throughout the first grazing season, and from July until slaughter/housing of the second grazing season. Two genotypes were assigned to each supplementation treatment, Holstein Friesian (HF; n= 80 animals) and Angus X Holstein Friesian (AAX; n= 160 animals).

Results

The slaughter age of AAX steers was 80 days earlier than HF across concentrate treatments. HIGH treatment AAX steers were slaughtered 43 days earlier, and with a carcass weight proportionately 0.96 that of GO and INTER AAX steers. Irrespective of concentrate treatment, slaughter age did not differ for HF steers. HIGH HF steers produced a heavier carcass than GO and INTER HF steers, however they consumed significantly more concentrate.

Conclusion

Slaughter age of AAX steers, can be reduced by strategic concentrate use during the second grazing season, producing a carcass meeting market specifications. However, the slaughter age of HF steers remained unchanged, emphasising the importance of substituting low carcass merit HF male calves for high carcass merit, beef x dairy animals.