

ABSTRACT

**The effects of grazing and supplemental protein concentrations during the grazing period on subsequent finishing performance and carcass quality in Japanese Black cattle steers**

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The effects of grazing and supplemental protein concentrations, provided during the grazing period, on subsequent finishing performance and carcass quality were investigated. This experiment was carried out using 15 Japanese Black cattle (Wagyu) steers. The steers were fed as follows: (i) grazing supplemented with moderate protein concentrate (GMP) (18% crude protein (CP); dry matter (DM) basis) before finishing, followed by feeding in a barn until slaughter; (ii) grazing supplemented with low protein concentrate (GLP) (14% CP; DM basis) before finishing, followed by feeding in the barn until slaughter; and (iii) no grazing before finishing (NG). From the end of the grazing season to the end of the growing period, the GMP and GLP steers were managed in the same way as the NG steers. All of the animals were fed the same diet in the finishing period (9 months to 28 months). None of the three treatments affected the average daily gains. For all treatments, chilled carcass weights were more than 450 kg and did not differ significantly among the groups. The longissimus muscle areas in the grazed steers were numerically larger than in those receiving the NG treatment. Fat thickness was significantly greater ( $P < 0.05$ ) in the NG steers than in the grazed steers. The intramuscular fat and marbling scores were not affected in the grazed steers. In conclusion, the carcass quality of grazed steers was similar to that of the NG steers at a similar final age, and the quantity of meat in the NG steers would be less than that of the GMP and GLP steers. Therefore, spring-born Wagyu steers should be grazed using the GLP supplement before fattening.