

Effect of low-protein diets considering metabolizable protein supply on growth performance and carcass traits in late-fattening Hanwoo steers

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This study was conducted to evaluate the effects of low-protein diets formulated to provide equal metabolizable protein (MP) on growth performance and carcass characteristics in late-fattening Hanwoo steers. A total of 30 Hanwoo steers (24 months old; average body weight: 696.5 ± 55.3 kg) were assigned to two dietary treatments: a control diet containing 14.5% crude protein (CP) and a low-protein diet containing 12.5% CP. Both diets were formulated to have equal levels of total digestible nutrients and MP. The in situ degradability of dry matter and CP tended to be higher in the low-protein group during the early incubation period, but became similar between treatments in the later period. There were no significant differences in final body weight, average daily gain, or feed conversion ratio between the treatments. Additionally, carcass yield and quality traits were not negatively affected by the low-protein diet. Therefore, maintaining the level of MP in the diet during the late fattening period may allow for the use of low-CP diets without compromising performance. These results are expected to serve as a foundational reference for the development of nitrogen-reducing feed strategies.

Key words : Hanwoo steers, low-protein diet, metabolizable protein, growth performance, carcass traits, nitrogen reduction