

## PH2) Growth performance, meat, and carcass characteristics of growing and fattening Hanwoo (*Bos taurus coreanae*) steers as fed bentonite

김영직·최인학<sup>1)</sup>

대구대학교 동물자원학과, <sup>1)</sup>충부대학교 애완동물자원학과

### 1. Introduction

Several studies have demonstrated that bentonites have the ability to absorb toxic products during digestion and to decrease the accumulation of toxic substances in tissues, which results in the reduction of internal disorder occurrences (Fenn and Leng, 1989). For example, bentonites in animal diet effectively bind aflatoxins from the animals' digestive tract, which makes mycotoxins unavailable for absorption. This led to the reduction of their absorption into the organism due to its adsorbent capability (Phillips et al., 2002). Therefore, the addition of bentonite could be used as a dietary supplement in animal rations to improve their nutritive value. The objective of this investigation was to evaluate the effects of supplementation with bentonite on growth performance and the carcass and meat characteristics of growing and fattening Hanwoo steers (*Bos taurus coreanae*).

### 2. Materials and Methods

Thirty six castrated Hanwoo steers (initial live weight: 184±5.20 kg) at 7 months of age were allotted to three treatments for 23-months feeding experiment to evaluate the effects of supplementation with bentonite (0, 0.1 and 0.3%) on growth performance, carcass (backfat thickness, *longissimus* muscle area, yield index, yield grade, meat color, fat color, texture, maturity, marbling score and quality grade) and meat (pH, cooking loss, shear force, and water holding capacity) characteristics.

### 3. Results and Discussion

The inclusion of a bentonite-supplemented diet had an influence on final weight, total weight gain, and average daily gain. However, initial weight did not differ among treatments. Bentonite supplement had no significant effect on proximate composition (moisture, crude protein, ether extract and crude ash) or meat quality (pH, cooking loss, shear force, and water holding capacity). Cold carcass weight, marbling score, and quality grade were significantly different among treatments, but neither treatments had an effect on yield traits (backfat thickness, *longissimus* muscle area, yield index, and yield grade) or quality traits (meat color, fat color, texture, and maturity). It was concluded that supplementation with 0.3% bentonite improved growth performance, cold carcass weight, and quality traits (marbling score and quality grade), except for meat quality.

### 4. References

- Fenn, P. D., Leng, R. A., 1989, Wool growth and sulphur amino acid concentration in sheep fed roughage based diets supplemented with bentonite and sulphur amino acids, Australian Journal of Agricultural Research, 41, 889-896.
- Phillips, T. D., Lemke, S. L., Grant, P. G., 2002, Characterization of clay-based enterosorbents for prevention of aflatoxicosis, Advances in Experimental Medicine and Biology, 504, 157-171.