
PSVI-7 Increased consumption of Methionine as DL-Methionine or OH-Methionine improved pigs growing performance and carcass traits under hot conditions. Caio A. da Silva, Marco A. Callegari², José Henrique Barbi³, Naiara Fagundes³, Cleandro P. Dias², Kelly L. Souza⁴, Dolores I. Batonon-Alavo⁵, ¹*University of Londrina, Animal Science Department, ²AKEI, ³Adisseo Brasil Nutrição Animal, ⁴Akei, ⁵Adisseo USA Inc.*

This study aimed to determine the effects of increasing Methionine (Met) supply on growth performance and carcass traits of growing-finishing pigs under summer conditions in Brazil. A total of 200 barrows and females, 63 d-old (20.43 ± 2.0 kg), were allocated in a 2 x 2 factorial design (two Met sources [DL-Met and OH-Met] and two Met doses [100 and 120% Brazilian Nutritional recommendation] with 10 replicates of 5 animals each. Corn-DDGS-wheat-soya based diets were formulated. Treatments were offered during four phases: growing I (63-93 d old), growing II (94-114 d old), finishing I (115-142 d old) and finishing II (143-160 d old). The recommended digestible Met levels were: 0.32, 0.30, 0.29 and 0.24% respectively for the four phases. Average temperature was $27.12 \pm 4.51^\circ\text{C}$ and relative humidity was $61.72 \pm 5.65\%$. Growth performance was measured for each rearing phase. Carcass yield, back fat height, loin depth, and lean meat yield were measured at the end of the experiment. Data were submitted to a 2-way ANOVA and Tukey test. There was no significant interaction between the Met source and the dose for all performance and carcass traits. Feed intake and feed conversion ratio were similar between treatments ($P > 0.05$). The individual daily weight gain and live weight were better for the highest doses of methionine ($P < 0.05$) in all phases and on the whole period, except for the finishing II where the weight gain was similar for all treatments. Likewise, carcass yield, lean meat was increased with the highest dose of methionine in comparison to the adequate dose. No significant difference was found between DL-Met and OH-Met on growth performance parameters. OH-Met resulted in a higher loin depth (58.37 mm) in comparison to DL-Met (55.21 mm). Overall, these results demonstrated the interest of increasing Met supply under hot conditions to improving performance and carcass quality traits.

Keywords: Methionine, Hydroxy-methionine, Hot conditions

PSVIII-8 Effects of dietary L-arginine on growth performance, nutrient digestibility, and meat quality in finishing pigs. Woo Jung Seok¹, Je min Ahn¹, Yong Min Kim¹, Sumya Kibria¹, Huan Shi¹, In Ho Kim¹, ¹*Dankook University*

Arginine plays an important role in regulating arginine-nitric oxide synthase pathway, regulating lipid metabolism, and upregulating the mRNA levels of genes involved in fat synthesis in muscle in animals, and can therefore improve feed utilization for protein accretion. The objective of this study was to investigate the effects of supplementation of different concentrations of L-arginine on growth performance, nutrient digestibility, and meat quality in finishing pigs. A total of 120 crossbred [(Landrace x Yorkshire) x Duroc] pigs with an average initial body weight (BW) of 53.80 ± 1.86 kg were used in this 10-week feeding trial. The pigs were randomly allotted to 1 of 3 dietary treatments (5 pigs/pen and 8 replicates/treatment) in a randomized complete block design according to their sex (2 gilts and 3 barrows) and BW. Dietary treatments included: 1) CON, corn-soybean meal based basal diet (containing 13.81 MJ/kg metabolic energy and 0.95% lysine for entire experimental period); 2) LA0.5, CON + 0.5 g/kg L-arginine; 3) LA1.0, CON + 1.0 g/kg L-arginine. Individual body weight was measured initially and at the end of 5th and 10th week, feed consumption was recorded on pen basis during the experiment to determine growth performance. Meat samples were randomly taken from each pen (2 pigs per pen, 1 gilt and 1 barrow; 16 pigs per treatment) for determination of meat quality. All data were analysed using linear and quadratic contrast (SAS Institute Inc., Cary, NC, USA). The result showed that L-arginine did not affect pig growth performance and nutrient digestibility. However, dietary L-arginine supplementation linearly increased ($P < 0.05$) muscle marbling score, while linearly decreasing ($P < 0.05$) cooking loss and drip loss of pork muscle (Table 1). Results of present study demonstrated that 1.0 g/kg L-arginine would be beneficial in improving the meat quality in finishing pigs.