

Effects of substitution with graded levels of sweet potato (TNG NO. 57) in diets on carcass characteristics of Lanyu pigs

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This study was conducted to investigate the effect of substitution with sweet potato (TNG No. 57) in diets on the carcass characteristics of Lanyu pigs. A total of 24 Lanyu pigs with the age of 180 days, well-balanced sex ratio and at the average weight of 25 kg, were randomly divided into three groups including the control group with no sweet potato substitution (ME 3,104 kcal/kg), and the treatment groups with sweet potato replacing 25% (ME 3,058 kcal/kg) and 50% (ME 2,952 kcal/kg) of diets. Pigs were fed ad libitum and free to water until the age of 253 days. The results showed that there was no significant difference in carcass weight, dressing percentage, carcass length, backfat thickness, loin-eye area, lean percentage, fat percentage, proximate composition of the *Longissimus dorsi* muscle, pH, marbling score, CIEL*a*b* and sensory evaluation (flavor, juiciness, tenderness and total acceptability). In the analysis of fatty acid composition of the *Longissimus dorsi* muscle, there were no significant differences in saturated fatty acids among the groups. Monounsaturated fatty acids were greater in the 50% group than the control group significantly ($P < 0.05$) and polyunsaturated fatty acids were greater in the control group than the 25% and 50% groups significantly ($P < 0.05$). The amino acid composition of *Longissimus dorsi* muscle showed that there were significant differences in eight amino acids including aspartic acid, glycine, arginine, alanine, phenylalanine, isoleucine, leucine and proline, and all of them were highest in the 25% group ($P < 0.05$). In conclusion, dietary substitution with 25% of TNG No. 57 sweet potato did not produce any adverse effects and showed better performance in carcass characteristics.

Key words: Lanyu pig, sweet potato, carcass characteristics.