

Comparison of meat quality characteristics among native black pigs in Taiwan, Iberian and commercial pig

Ti-Chun Chang, Yu-Dan Chen, Hui-Zhen Yan, Shi-Yong Lim, Jen-Shinn Lin, Fu-Yuan Cheng

National Pingtung University of Science and Technology, Taiwan

Objectives: Pork is currently the most consumed meat in Taiwan, and particularly native black pork with special meat characteristics attract preference from domestic consumers. This study aims to evaluate the meat characteristics (*M. longissimus dorsi*) of native black pigs in Taiwan (NB) and compared with those of Iberian (SI) and commercial pig (LYD).

Materials and Methods: The following measurements of meat quality were carried out among three breeds of pigs: pH value, color,

water holding capacity (WHC), cooking loss, collagen content, shear value, texture profile analysis and sensory evaluation.

Results and Discussion: From the results, it can be seen that SI had the highest pH value ($P < 0.05$) due to the long aging process or storage times. In terms of meat color, there was no significant difference in L^* value among all treatments. But the meat of NB and SI showed a significantly higher a^* and b^* values than LYD ($P < 0.05$), which indicated in redder meat color. SI group also showed the highest WHC (46.30%) and the lowest cooking loss (31.69%). The NB group had a similar value in WHC (44.95%), however the higher cooking loss (35.56%) was observed compared with the SI group. In collagen content, the content of NB (11.59 mg/g) and SI groups (11.02 mg/g) was significantly higher than that of the LYD group (7.80 mg/g) ($P < 0.05$), which was related to a longer feeding period in the NB group (10 months) and SI group (18 months). In meat texture analysis, the significant lower shear value, hardness and chewiness were in the NB and SI groups, while springiness and cohesiveness were not significantly different among all treatments. It was suggested that the NB group exhibited a tender meat texture as the IS group, which was contributed to the higher collagen content instead of resulting in collagen-related toughness. Furthermore, marbling was noticeable in both the NB and SI group, inferred as a factors that improve meat quality of NB and SI group. The present results suggest that native black pigs in Taiwan have similar meat characteristics and acceptability to Iberian pigs, which have a great potential to become a local pig breed with superior meat quality.

Key words: Black pigs, Collagen, Marbling, Meat quality