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Effect of soaking with lactic acid solution on the meat quality of Mule duck breast meat in Taiwan [1]

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Abstract

This experiment aimed to investigate the effect of the preserving quality from soaking the breast meat of domestic mule duck in lactic acid solution. Two hundreds of local mule duck were selected for commercial slaughtering at 78 ~ 80 days old in this experiment. Four groups of deboned duck breast meats were immersed lactic acid solution for 2 minutes with 0 (control), 0.5, 1.5 or 3.0%, respectively. Then, the meats were vacuum packaged when the surface of duck breast meat was dry, and stored at 4ºC during 7 days for further analysis. The results showed that total plate count of the meats soaking lactic acid solution with 1.5 and 3.0% at the 7th days during storage were decreased 0.5 and 0.9 log cfu/g compared to the control, respectively. Also, coli form numbers of these two treatments were lower than the numbers of the control as 0.6 and 1.1 log cfu/g ($P < 0.05$). It showed that these two treatments have good effect on the inhibition of microorganism. The Hunter L value of meats color in 0.5% treatment was 41.2 ± 3.5, which was lower compared with the other treatments and the control (43.7 ± 1.9 ~ 47.8 ± 2.6). There was no significant difference between the groups during the other testing time. The pH value of meats during storage was between 6.00 ~ 6.17. There were no different whether soaking lactic acid solution or not ($P > 0.05$). During the storage of 7 days, the TBARS and VBN contents of all treatments were lower than 0.4% and 12.5%, respectively. In summary, the meat quality of all the treatment was corresponding to the limit of the regulation. However, the meat color, cooking loss and the sensory evaluation of the 3.0% treatment showed the bad influence on the quality of duck meat. According to the results of this study, soaking the breast meat of the duck in lactic acid solution with 1.5% for 2 minutes will inhibit bacterial breeding and benefit the maintenance of fresh meat quality.

Key words: Mule duck, Lactic acid, Breast meat, Meat quality.

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