Cairo University
Faculty of Veterinary Medicine
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Tenderization of spent hen meat using natural fruits

Thesis Presented By
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Abstract

(Key words: Spent hen meat, kiwi, pineapple, sensory attributes, physico-chemical characteristics, shear force, electrophoresis, light microscope).

The main objective of the current study was to improve the physico-chemical and sensory quality of raw spent hen meat using natural extracts of kiwi, pineapple and their combination. A marinade containing common salt, polyphosphate and white pepper was prepared and used as control. Moreover, marinades contained kiwi (5 and 10 %), pineapple (5 and 10 %) and combination of kiwi (5 %) and pineapple (5 %) in the control marinade were prepared. Spent hen breast fillets were prepared from carcasses chilled for 24 h at 4 ºC after slaughter and dressing. Prepared fillets were treated with the control marinade and marinades containing kiwi and pineapple with a group dipped in water and kept for 24 h at 4 ºC. After 24 h marination, all treated fillet were investigated for proximate chemical composition, shear force, color parameters, deterioration criteria and sensory attributes. The results revealed significant (P<0.05) reduction of the shear force of samples treated with fruit extracts with consequent improvement of the tender, juiciness and overall acceptability scores. A reduction in the thiobarbituric acid reactive substances was observed after marination in marinade containing fruit extracts after treatment and during storage. The light micrographs of muscles treated with marinades containing kiwi and pineapple extracts revealed multiple longitudinal and cross breaks across the muscle fibers, degradation of the cell membrane and appearance of gabs within muscle fibers. The electrophoretic pattern of spent hen breast muscles treated with kiwi and pineapple revealed reduction in the number of protein bands and reduction in band intensity indicating proteolysis of muscle proteins. It can be concluded from this study that the fruit extracts can be used for improving the tenderness, physico-chemical and sensory characteristics of spent hen meat with consequent encouragement of meat processors to use spent hen meat as a good source for raw materials in poultry industry.

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