

Effect of slaughter age on growth performances, muscle compositions and quality of heavy type caponized native chickens ⁽¹⁾

Cheng-Yung Lin ⁽²⁾⁽⁴⁾ and Jenn-Chung Hsu ⁽³⁾

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Abstract

An experiment was carried out to determine the effects of slaughter age on muscle compositions, physical properties and eating quality of heavy type caponized native chickens. A total of five hundred and ninety-four cockerels were surgically caponized at 13 weeks of age. Capons reared in floors were fed diets containing 18% crude protein and 3,200 kcal/kg metabolizable energy during from 91 to 126 days old and fed diets containing 15% crude protein and 2,800 kcal/kg metabolizable energy during from 127 to 217 days old. Feed and water were provided *ad libitum*. Incandescent light was provided 23 hours per day during experimental period. Birds were slaughtered from 25 weeks of age through 31 weeks of age with 1 week interval, which were slaughtered thirty-six birds in each week. The growth performances, muscle compositions, physical properties and taste panel scores were used as criteria for the determination of the optimum slaughter age of heavy type caponized native chickens. The results indicated that the accumulation body weight gain reached peak at 29 weeks of age and declined at 30 weeks of age. Besides, the feed conversion of capons, dropped significantly ($P < 0.05$) with the advance of age. Furthermore, the moisture content of breast muscle of birds before 28 weeks of age were higher ($P < 0.05$) than those of birds after 29 weeks of age. In addition, the fat content, cooking loss, elasticity and chewiness of breast muscle increased and the protein content of breast muscle decreased with the increase of slaughter age. Therefore, the breast muscle cohesiveness of birds was lower ($P < 0.05$) at 30 weeks of age than birds at 26, 28, 29 and 31 weeks of age. Accordingly, the sensory panel scores for breast muscle flavor of birds were higher ($P < 0.05$) at 28 weeks of age than those of birds at 25 and 31 weeks of age. Also, the sensory panel scores for breast muscle tenderness were lower ($P < 0.05$) after 29 weeks of age birds than those before 27 weeks of age birds. However, after 28 weeks of age birds had lower ($P < 0.05$) sensory panel scores for breast muscle juiciness than birds at 27 weeks of age birds. In addition, the sensory panel scores for breast muscle overall-acceptance of birds were higher ($P < 0.05$) at 25 and 27 weeks of age than those of birds at 28 and 29 weeks of age birds. Moreover, our findings also indicate that slaughtering at 27 weeks old of could reach excellent meat quality and the optimal age to market was no more than 29 weeks of age for heavy type caponized native chickens.

Key words: Heavy type capons, Slaughter age, Growth performance, Meat quality.

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(2) Kaohsiung Animal Propagation Station, COA- LRI, Pintung 91247, Taiwan, R.O.C.

(3) Department of Animal Science, National Chung-Hsing University, Taichung 402, Taiwan, R.O.C.

(4) Corresponding author, E-mail: jengyong@mail.tlri.gov.tw.