

## **PENGARUH JENIS KELAMIN DAN JENIS KANDANG YANG BERBEDA TERHADAP MIKROSTRUKTUR DAN KUALITAS FISIK DAGING AYAM JOPER**

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### **INTISARI**

Penelitian ini bertujuan untuk mengetahui kualitas fisik dan mikrostruktur daging ayam Joper yang dipelihara di kandang lantai *litter* dan kotak. Penelitian dilaksanakan sejak 4 Agustus hingga 15 November 2022. Pemeliharaan dilakukan di Imogiri, Bantul mulai dari DOC hingga umur 11 minggu. Penelitian ini menggunakan 12 ekor ayam Joper yang terdiri dari 3 ekor ayam Joper jantan dan 3 ekor ayam Joper betina yang dipelihara di kandang kotak dan 3 ekor ayam Joper jantan dan 3 ekor ayam Joper betina yang dipelihara di kandang lantai *litter*. Proses penyembelihan ayam dilakukan dengan metode halal untuk memperoleh karkas kemudian dilakukan proses parting dan deboning. Variabel kualitas fisik yang diamati meliputi uji daya ikat air, pH, susut masak dan keempukan. Pengamatan mikrostruktur daging ayam Joper dilakukan dengan membuat preparat histologi dari daging dada kemudian dilakukan pengamatan dengan irisan melintang dan membujur serta pengukuran diameter serabut otot. Data sifat fisik dan diameter serabut otot kemudian dianalisis statistik menggunakan *Analysis of Variance* (ANOVA) dengan Rancangan Acak Lengkap (RAL) pola faktorial 2X2 (jenis kelamin dan kandang). Terdapat interaksi antara jenis kelamin dan jenis kandang terhadap panjang diameter otot. Hasil penelitian menunjukkan bahwa jenis kelamin berpengaruh nyata ( $P < 0,05$ ) terhadap diameter serabut otot dan keempukan daging. Hasil penelitian menunjukkan bahwa jenis kandang berpengaruh nyata ( $P < 0,05$ ) terhadap nilai diameter serabut otot, nilai pH, daya ikat air, susut masak dan keempukan. Panjang diameter serabut otot ayam jantan dan betina sebesar  $39,79 \pm 2,44 \mu\text{m}$  dan  $28,83 \pm 1,42 \mu\text{m}$ . Panjang diameter serabut otot ayam lantai *litter* dan kotak sebesar  $35,98 \pm 6,55 \mu\text{m}$  dan  $32,59 \pm 5,57 \mu\text{m}$ . Nilai pH ayam lantai *litter* dan kotak sebesar  $6,07 \pm 0,08$  dan  $5,87 \pm 0,09$ . Daya ikat air ayam lantai *litter* dan kotak sebesar  $43,25 \pm 1,71\%$  dan  $31,49 \pm 1,44\%$ . Susut masak ayam lantai *litter* dan kotak sebesar  $27,71 \pm 1,07\%$  dan  $29,83 \pm 0,86\%$ . Keempukan ayam lantai *litter* dan kotak sebesar  $2,52 \pm 0,17 \text{ kg/cm}^2$  dan  $2,18 \pm 0,11 \text{ kg/cm}^2$ . Keempukan ayam jantan dan betina sebesar  $2,47 \pm 0,23 \text{ kg/cm}^2$  dan  $2,23 \pm 0,16 \text{ kg/cm}^2$ .

**Kata kunci:** Ayam Joper, Jenis Kelamin, Jenis Kandang, Sifat Fisik, dan Mikrostruktur.

## **EFFECT OF SEX AND DIFFERENT HOUSING TYPES ON THE MICROSTRUCTURE AND PHYSICAL QUALITY OF JOPER CHICKEN MEAT**

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### **ABSTRACT**

This study aimed to determine the physical quality and microstructure of Joper chicken meat raised in litter floor and cage systems. The study was conducted from August 4th to November 15th, 2022, in Imogiri, Bantul. The chickens were raised from Day Old Chicks (DOC) to 11 weeks of age. The study involved 12 Joper chickens, comprising 3 male and 3 female Joper chickens raised in cages and 3 male and 3 female Joper chickens raised in litter floor systems. The chicken slaughtering process was conducted using halal methods to obtain carcasses, followed by parting and deboning. The physical quality variables observed included water holding capacity, pH, cooking loss, and tenderness. Microstructural observations of Joper chicken meat were made by creating histological preparations from the pectoralis major muscle, followed by cross-sectional and longitudinal observations as well as the measurement of muscle fiber diameters. The physical quality and muscle fiber diameter data obtained were then statistically analyzed using Analysis of Variance (ANOVA) with a Completely Randomized Design (CRD) in a 2×2 factorial pattern considering sex and housing type as factors. There was an interaction between sex and cage type affecting the length of muscle fiber diameter. The research results indicated that sex significantly influenced ( $P<0.05$ ) both muscle fiber diameter and meat tenderness. The type of cage also significantly influenced ( $P<0.05$ ) the muscle fiber diameter, pH value, water holding capacity, cooking loss, and tenderness. The length of muscle fiber diameter in male and female chickens were  $39.79\pm2.44\ \mu\text{m}$  and  $28.83\pm1.42\ \mu\text{m}$ . The length of muscle fiber diameter chickens raised on litter floors and in cages were  $35.98\pm6.55\ \mu\text{m}$  and  $32.59\pm5.57\ \mu\text{m}$ . The pH value for chickens raised on litter floors and in cages were  $6.07\pm0.08$  and  $5.87\pm0.09$ . Water holding capacity for chickens raised on litter floors and in cages were  $43.25\pm1.71\%$  and  $31.49\pm1.44\%$ , while cooking loss were  $27.71\pm1.07\%$  and  $29.83\pm0.86\%$ , and tenderness were  $2.52\pm0.17\ \text{kg/cm}^2$  and  $2.18\pm0.11\ \text{kg/cm}^2$ . Tenderness for male and female chickens were  $2.47\pm0.23\ \text{kg/cm}^2$  and  $2.23\pm0.16\ \text{kg/cm}^2$ , respectively.

**Kata kunci:** Joper Chickens, Sex, Housing Type, Physical Quality, and Microstructure