

PERFORMA PRODUKSI, KUALITAS LITTER DAN KONSENTRASI HORMON KORTIKOSTERON PADA AYAM KAMPUNG DENGAN KEPADATAN KANDANG DAN BAHAN LITTER BERBEDA

INTISARI

Dwi Rohmadi
17/418919/PPT/00976

Penelitian ini bertujuan untuk mempelajari pengaruh berbagai kepadatan kandang dan bahan material *litter* berbeda pada kandang ayam Kampung terhadap performa produksi, kualitas *litter*, konsentrasi hormon *kortikosteron* dan kesehatan saluran pencernaan. Penelitian dilaksanakan di UPT BP4 Wilayah V Pakem selama 12 minggu. Sebanyak 324 ekor *day old chick* (DOC) ayam Kampung ditimbang berat awalnya dipasangkan nomor pada wingweb kemudian ditempatkan secara acak pada 27 unit kandang yaitu 9 kelompok perlakuan 3 kepadatan kandang (8, 12 dan 16 ekor/m²) dan 3 bahan litter (sekam padi, serutan kayu dan tongkol jagung), dan masing-masing diulang sebanyak 3 kali. Penelitian ini menggunakan Rancangan Acak Lengkap Pola Faktorial dilanjutkan dengan uji Duncan. Parameter yang diamati meliputi konsumsi pakan (g/ekor/12minggu), penambahan bobot badan (g/ekor), konversi pakan, mortalitas (%); suhu litter (°C), pH, daya serap (%), kadar air (%), amonia litter (ppm); kadar hormon kortikosteron (ng/ml), histomorfologi usus halus dan jumlah sel goblet(n/mm²). Hasil penelitian menunjukkan konsumsi pakan dipengaruhi kepadatan kandang (p<0,05), konsumsi pakan tertinggi didapatkan pada kepadatan 16 ekor/m². Pertambahan berat badan, konversi pakan dan mortalitas tidak dipengaruhi oleh kepadatan kandang dan jenis bahan litter. Hasil pengukuran suhu litter, pH, kadar air litter dan ammonia litter meningkat seiring peningkatan kepadatan kandang (p<0,05), tetapi tidak untuk daya serap litter. Jenis bahan litter mempengaruhi nilai pH, kadar air, daya serap dan kadar ammonia litter (p<0,05), tetapi tidak berpengaruh pada suhu litter. Kepadatan kandang dan bahan litter tidak berpengaruh terhadap konsentrasi hormon kortikosteron. Kadar hormon kortikosteron pada kepadatan kandang 8, 12 dan 16 ekor/m² sebesar 41,01; 35,16; 37,79 ng/ml untuk minggu ke-8 dan meningkat menjadi 43,46; 48,37; 57,65 ng/ml pada minggu ke-12. Pengukuran parameter histomorfologi usus pada segmen duodenum, jejunum dan ileum didapatkan bahwa kepadatan kandang dan jenis bahan litter hanya berpengaruh pada segmen jejunum yaitu pada kedalaman kriptas dan ratio tinggi vili/kedalam kriptas. Kedalam kriptas secara nyata menurun (p<0,05) seiring peningkatan kepadatan kandang 8, 12 dan 16 ekor/m². Kepadatan kandang dan bahan litter tidak mempengaruhi kepadatan sel goblet untuk ketiga segmen usus halus baik duodenum, jejunum dan ileum. Dari penelitian ini dapat disimpulkan bahwa peningkatan kepadatan kandang dari 8, 12 sampai 16 ekor/m² dan penggunaan jenis bahan litter yang berbeda masih memberikan performa produksi, kualitas litter, kadar hormon kortikosterone dan tampilan kesehatan usus yang baik.

Kata kunci: ayam kampung, kepadatan kandang, bahan litter

THE PRODUCTION PERFORMANCE, LITTER QUALITY AND
CORTICOSTERONE HORMONE CONCENTRATION OF NATIVE CHICKEN
KEPT IN DIFFERENT STOCKING DENSITY AND LITTER MATERIALS

ABSTRACT

Dwi Rohmadi
17/4189 19 / PPT / 00976

This research was aimed to investigate the effect of three stocking density and *litter* materials on the production performance, *litter* quality *corticosterone* hormone concentration and gut health. This study was conducted at UPT BP4 Region V Pakem, for 12 weeks. A total of 324-day *old chick* (doc) were weighed and given the identification, then randomly divided into 27 units of cages. There were 9 treatment groups were 3 different stocking density (8, 12 and 16 bird/m²) and 3 different groups of litter materials (rice hulls, wood shavings and corncob) and each treatment has 3 replication. The data collected include feed intake, body weight gain, FCR, mortality; litter temperature, litter pH, water holding capacity, litter water content, litter ammonia; the levels of corticosterone hormone, gastrointestinal histomorphology and the number of goblet cells were analyzed by using analysis variants based on factorial completely randomized design then followed by Duncan New Multiple Range Test. The results showed that feed intake was influenced by the stocking density ($p < 0.05$), the highest feed consumption obtained at 16 bird/m² of stocking density. Bodyweight gain, FCR and mortality had not influenced by the different stocking density and the different litter material. The increasing of stocking density followed the increasing of temperature, litter pH, litter water content and ammonia of litter ($p < 0.05$), but had no significant differences in litter water holding capacity. Litter materials affect litter pH, litter water content, water holding capacity and litter ammonia ($p < 0.05$), but did not affect the litter temperature. Stocking density and litter materials had not affected the concentration of corticosterone hormone. Levels of corticosterone hormone in the density of 8, 12 and 16 bird /m² was 41.01; 35,16; 37.79 ng/ml in the week of 8th and increase to 43.46; 48.37; 57.65 ng/ml at week of 12th. The result of intestinal histomorphology in the segment of the duodenum, jejunum and ileum showed that the different stocking density and the different of litter material, only affect the crypts depth and the ratio of villous height/crypts of jejunum segment. Crypts depth decline ($p < 0.05$) according to the increasing of stocking density from 8 to 12 and 16 bird/m². Stocking density litter and materials had not affected the number of goblet cells in the intestine. This research can be concluded that the increasing of stocking density from 8, 12 to 16 bird/m² and the use of different litter materials still affect the production performance, litter quality, corticosterone hormone concentration and gut health.

Keywords: native chicken , stocking density, litter material