

PENGARUH PERBEDAAN LAMA WAKTU PEMBERIAN LUTEIN SEBAGAI SUMBER KAROTENOID TERHADAP PERFORMA DAN PIGMENTASI PADA AYAM BROILER

Muhammad Rizki Akbar Putra Pratama
22/493248/PT/09257

INTISARI

Penelitian ini bertujuan untuk menganalisis pengaruh lama waktu pemberian lutein sebagai sumber karotenoid terhadap performa dan pigmentasi kulit ayam broiler serta retensi pigmentasi *shank skin* setelah penghentian suplementasi. Penelitian menggunakan 192 ekor ayam broiler strain Cobb 500 dengan penambahan lutein dalam pakan starter dosis 375 ppm (7,5 mg xantofil/kg pakan). Penelitian disusun menggunakan Rancangan Acak Lengkap (RAL) dengan empat perlakuan lama waktu suplementasi, yaitu 0, 7, 18, dan 25 hari. Data performa dan pigmentasi dianalisis menggunakan ANOVA Pola Searah, sedangkan data retensi pigmentasi *shank skin* dianalisis menggunakan ANOVA Pola Faktorial 4×4 dan dilanjutkan dengan uji Tukey's HSD apabila terdapat perbedaan nyata. Hasil penelitian menunjukkan bahwa perbedaan lama waktu pemberian lutein tidak berpengaruh nyata ($P>0,05$) terhadap performa ayam broiler. Lama waktu suplementasi lutein berpengaruh nyata ($P<0,05$) terhadap nilai kemerahan (a^*) dan kekuningan (b^*) *shank skin* dengan suplementasi selama 25 hari menghasilkan nilai tertinggi. Pigmentasi pada *breast skin*, *back skin*, dan *abdominal fat* tidak berbeda nyata ($P>0,05$). Namun, pada *abdominal skin* terdapat perbedaan nyata ($P<0,05$) pada nilai kekuningan (b^*) dengan nilai tertinggi diperoleh pada perlakuan suplementasi 7 hari. Pada periode pasca penghentian suplementasi, lama waktu suplementasi dan hari pengamatan berpengaruh nyata ($P<0,05$) terhadap nilai L^* , a^* , dan b^* *shank skin*, namun tidak terdapat interaksi nyata ($P>0,05$) antara kedua faktor tersebut. Suplementasi lutein selama 25 hari direkomendasikan untuk menghasilkan pigmentasi kulit yang optimal karena menghasilkan intensitas pigmentasi dengan tingkat warna merah dan kuning tertinggi, sedangkan suplementasi selama 18 hari dapat menjadi alternatif apabila mempertimbangkan efisiensi dengan tetap menghasilkan retensi pigmentasi yang sama baiknya dengan suplementasi selama 25 hari.

Kata kunci: performa ayam broiler, pigmentasi, retensi pigmentasi, karotenoid, lutein

EFFECTS OF DIFFERENT LUTEIN SUPPLEMENTATION PERIODS AS A CAROTENOID SOURCE ON PERFORMANCE AND PIGMENTATION IN BROILER CHICKENS

Muhammad Rizki Akbar Putra Pratama
22/493248/PT/09257

ABSTRACT

This study aimed to analyze the effect of lutein supplementation duration on the performance and skin pigmentation of broiler chickens, as well as shank skin pigmentation retention following the cessation of supplementation. A total of 192 Cobb 500 broiler chickens were used, with lutein added to the starter feed at a dose of 375 ppm (7.5 mg xanthophyll/kg feed). The study was arranged in a Completely Randomized Design (CRD) with four supplementation duration treatments, namely 0, 7, 18, and 25 days. Performance and pigmentation data were analyzed using One-Way ANOVA, while shank skin pigmentation retention data were analyzed using a Two-Way ANOVA 4×4, followed by Tukey's HSD test where significant differences were found. The results showed that varying lutein supplementation durations had no significant effect ($P>0.05$) on broiler performance. Supplementation duration significantly affected ($P<0.05$) the redness (a^*) and yellowness (b^*) values of shank skin, with 25 days of supplementation yielding the highest values. Pigmentation of breast skin, back skin, and abdominal fat showed no significant differences ($P>0.05$). However, abdominal skin yellowness (b^*) showed a significant difference ($P<0.05$), with the highest value observed in the 7-day supplementation treatment. During the post-supplementation period, both supplementation duration and observation day significantly affected ($P<0.05$) the L^* , a^* , and b^* values of shank skin, with no significant interaction ($P>0.05$) between the two factors. Lutein supplementation for 25 days is recommended to produce optimal skin pigmentation because it produces the highest intensity of red and yellow pigmentation, while supplementation for 18 days can be an alternative if efficiency is considered, as it produces the same pigmentation retention as supplementation for 25 days.

Keywords: *broiler performance, pigmentation, pigmentation retention, carotenoids, lutein*