

PENGARUH PENAMBAHAN ANTIOKSIDAN SINTETIK DALAM PAKAN AYAM TERHADAP KUALITAS DAN AKTIVITAS ANTIOKSIDAN TELUR

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INTISARI

Penambahan antioksidan dalam pakan berfungsi untuk mencegah penurunan kualitas pakan akibat reaksi oksidatif. Penelitian ini bertujuan untuk mengetahui pengaruh penambahan antioksidan sintetik berbahan butylated hydroxyanisole (BHA), butylated hydroxytoluene (BHT) dan ethoxyquin dalam pakan ayam terhadap kualitas interior, kualitas kimia, dan aktivitas antioksidan telur. Sebanyak 300 ekor ayam petelur berumur 70 minggu dibagi ke dalam tiga perlakuan. Perlakuan pakan terdiri dari P0= pakan basal (kontrol), P1= pakan basal + 0,05% antioksidan (kadar rendah) dan P2= pakan basal + 0,05% antioksidan (kadar tinggi). Setiap perlakuan terdiri dari 10 ulangan dengan 10 ekor ayam per ulangan. Pemberian pakan perlakuan dilakukan selama 56 hari. Sampel telur dikoleksi pada hari ke 26, 27, 28, 54, 55, dan 56 perlakuan pakan. Telur dikoleksi sebanyak 2 butir per ulangan perhari untuk uji kualitas interior dan sebanyak 1 butir per ulangan perhari untuk uji kualitas kimia dan aktivitas antioksidan. Pengambilan sampel didasarkan pada bentuk dan berat yang seragam antara ulangan dalam satu perlakuan. Data penelitian dianalisis menggunakan metode One Way ANOVA dan apabila terdapat perbedaan yang signifikan dilanjutkan dengan uji Duncan's Multiple Range Test (DMRT). Hasil penelitian menunjukkan bahwa penambahan antioksidan sintetik dalam pakan, berpengaruh nyata terhadap peningkatan aktivitas antioksidan dan nilai kadar air albumen ($P < 0,05$), serta menurunkan kadar kolesterol telur ayam ($P < 0,05$). Hasil uji terhadap kualitas interior telur yang meliputi indeks albumen, indeks yolk, warna yolk, ketebalan dan berat kerabang tidak menunjukkan perbedaan nyata antara pakan kontrol dan perlakuan ($P > 0,05$). Hasil yang sama diperoleh pada uji kualitas kimia yang menunjukkan bahwa penambahan antioksidan sintetik kedalam pakan tidak berpengaruh terhadap kadar air yolk, kadar lemak kasar yolk, kadar abu dan kadar protein secara keseluruhan ($P > 0,05$). Berdasarkan hasil penelitian yang telah dilakukan, disimpulkan bahwa, penambahan antioksidan sintetik dengan kadar rendah (P1) menunjukkan pengaruh yang lebih baik terhadap kadar kolesterol, kadar air albumen, dan aktivitas antioksidan telur. Sedangkan, penambahan antioksidan sintetik pada kadar rendah maupun tinggi, tidak berpengaruh nyata terhadap kualitas interior telur.

Kata kunci: antioksidan, ayam, oksidatif, pakan, telur

THE EFFECT OF ADDITION OF SYNTHETIC ANTIOXIDANTS IN CHICKEN FEED ON THE QUALITY AND ANTIOXIDANT ACTIVITY OF EGGS

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ABSTRACT

The addition of antioxidants in feed prevents a decrease in feed quality due to oxidative reactions. This study aims to determine the effect of adding synthetic antioxidants made from butylated hydroxyanisole (BHA), butylated hydroxytoluene (BHT), and ethoxyquin in chicken feed on the interior quality, chemical quality, and antioxidant activity of eggs. 300 laying hens aged 70 weeks were divided into three treatments. Feed treatments consisted of P0 = basal feed (control), P1 = basal feed + 0.05% antioxidants (low levels), and P2 = basal feed + 0.05% antioxidants (high levels). Each treatment consisted of 10 replications with 10 chickens per replication. The treatment feeding was carried out for 56 days. Egg samples were collected on days 26, 27, 28, 54, 55, and 56 of the feed treatment. Eggs were collected as many as 2 eggs per replication per day for the interior quality test and as many as 1 eggs per replication per day for the chemical quality and antioxidant activity tests. Sampling was based on uniform shape and weight between replications in one treatment. The research data were analyzed using the One Way ANOVA method and if there was a significant difference, it was continued with the Duncan's Multiple Range Test (DMRT). The results showed that the addition of synthetic antioxidants in the feed had a significant effect on increasing antioxidant activity and albumen water content ($P < 0.05$), and reducing cholesterol levels in chicken eggs ($P < 0.05$). The results of the test on the interior quality of eggs including the albumen index, yolk index, yolk color, shell thickness and weight did not show any significant difference between the control and treatment feeds ($P > 0.05$). The same results were obtained in the chemical quality test which showed that the addition of synthetic antioxidants to the feed did not affect the yolk water content, yolk crude fat content, ash content and protein content as a whole ($P > 0.05$). Based on the results of the research, it was concluded that the addition of synthetic antioxidants with low levels (P1) showed a better effect on cholesterol levels, albumen water content, and egg antioxidant activity. Meanwhile, the addition of synthetic antioxidants at low or high levels did not significantly affect the quality of the egg interior.

Keywords: antioxidant, chicken, egg, feed, oxidative