

**KUALITAS FISIK, AKTIVITAS ANTIBAKTERI DAN ANTIOKSIDAN
TELUR DENGAN PERLAKUAN SUPLEMENTASI TEPUNG
KUNYIT (*Curcuma domestica*) PADA RANSUM AYAM**

**Nabila Azizah
21/477152/PT/08905**

INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh suplementasi tepung kunyit (*Curcuma domestica*) dalam ransum terhadap kualitas fisik, aktivitas antibakteri dan antioksidan telur ayam *layer*. Penelitian ini menggunakan level suplementasi tepung kunyit yang berbeda, yaitu 0%, 0,25%, dan 0,50% w/w. Perlakuan tepung kunyit dilakukan selama pemeliharaan ayam 10 minggu. Pakan dengan perlakuan suplementasi tepung kunyit mulai diberikan pada minggu ke empat pemeliharaan ayam. Analisis kualitas fisik telur yang dilakukan meliputi, warna kerabang, kekuatan kerabang (MPa), berat kerabang, tebal kerabang (mm), berat telur (g), berat jenis telur (g/ml), indeks telur (%), indeks *albumen* (%), berat *albumen*, indeks *yolk* (%), berat *yolk*, warna *yolk*, dan nilai *Haugh unit* (HU). Aktivitas antibakteri dilakukan terhadap bakteri patogen *Escherichia coli*, *Salmonella*, dan *Staphylococcus aureus*. Aktivitas antioksidan dilakukan dengan metode DPPH (*diphenyl picrylhydrazyl*). Data hasil penelitian ini dianalisis menggunakan *One Way ANOVA* dilanjutkan dengan uji DMRT (*Duncan's Multiple Range Test*). Hasil penelitian menunjukkan suplementasi tepung kunyit 0%, 0,25%, dan 0,50% berpengaruh nyata ($P < 0,05$) terhadap kekuatan kerabang berturut-turut yaitu 0,29, 0,25, 0,24 MPa; berat kerabang 6,41, 5,97, 5,60 g; persentase berat kerabang 10,71, 10,13, 9,29 %, tebal kerabang 0,36, 0,34, 0,31 mm; indeks *albumen* 0,07, 0,09, 0,08; persentase berat *albumen* 63,80, 64,84, 65,56 %; skor warna *yolk* 8,72, 8,74, 9,13; nilai *Haugh unit* 74,78, 80,88, 72,69; aktivitas antibakteri terhadap *Escherichia coli* yang dibuktikan sebagai zona hambat 7,16, 10,16, 12,53 mm, aktivitas antibakteri terhadap *Staphylococcus aureus* 9,63, 10,31, 11,26 mm, namun tidak berpengaruh nyata terhadap bakteri *Salmonella*. Suplementasi tepung kunyit 0%, 0,25%, dan 0,50% berpengaruh nyata ($P < 0,05$) terhadap aktivitas antioksidan berturut-turut yaitu 27,39, 34,42, 37,09 %. Suplementasi tepung kunyit tidak berpengaruh nyata ($P > 0,05$) terhadap warna kerabang, berat telur, berat jenis telur, indeks telur, indeks *albumen*, berat *albumen* (g), indeks *yolk*, dan berat *yolk*. Kesimpulannya, suplementasi tepung kunyit pada level 0,50% dapat meningkatkan persentase berat *albumen* (%), warna *yolk*, aktivitas antibakteri terhadap *Staphylococcus aureus* dan *Escherichia coli*, serta aktivitas antioksidan.

Kata kunci: Telur, tepung kunyit, kualitas fisik, antibakteri, antioksidan

**PHYSICAL QUALITY, ANTIBACTERIAL AND ANTIOXIDANT ACTIVITY
OF EGGS SUPPLEMENTED WITH TURMERIC FLOUR
(*Curcuma domestica*) IN LAYING HEN DIETS**

**Nabila Azizah
21/477152/PT/08905**

ABSTRACT

This study aimed to determine the effect of turmeric flour (*Curcuma domestica*) supplementation meal in rations on the physical quality, antibacterial and antioxidant activity of laying hen eggs. This study used different levels of turmeric flour supplementation 0%, 0.25%, and 0.50% w/w. Turmeric flour treatment was carried out during 10 weeks of laying hen rearing. Feed with turmeric flour supplementation treatment began to be given in the fourth week of laying hens rearing. Analysis of the physical quality of eggs included eggshell color, eggshell strength (MPa), eggshell weight, eggshell thickness (mm), egg weight (g), egg specific gravity (g/ml), egg index (%), albumen index (%), albumen weight, yolk index (%), yolk weight, yolk color, and Haugh unit (HU) value. Antibacterial activity was performed against pathogenic bacteria *Escherichia coli*, *Salmonella*, and *Staphylococcus aureus*. Antioxidant activity was performed with DPPH (*diphenyl picrylhydrazyl*) method. Data from this study were analyzed using One Way ANOVA followed by DMRT (Duncan's Multiple Range Test) test. The research showed that turmeric flour supplementation of 0%, 0.25%, and 0.50% had a significant effect ($P < 0.05$) on eggshell strength of 0.29, 0.25, 0.24 MPa; eggshell weight of 6.41, 5.97, 5.60 g; eggshell weight percentage of 10.71, 10.13, 9.29 %, eggshell thickness of 0.36, 0.34, 0.31 mm; albumen index 0.07, 0.09, 0.08; albumen weight percentage of 63.80, 64.84, 65.56 %; yolk color score 8.72, 8.74, 9.13; Haugh unit values 74.78, 80.88, 72.69; antibacterial activity against *Escherichia coli* as evidenced by inhibition zones 7.16, 10.16, 12.53 mm, antibacterial activity against *Staphylococcus aureus* 9.63, 10.31, 11.26 mm, but no significant effect on *Salmonella* bacteria activity. Turmeric flour supplementation of 0%, 0.25%, and 0.50% had a significant effect ($P < 0.05$) on antioxidant activity of 27.39, 34.42, 37.09%, respectively. Turmeric flour supplementation had no significant effect ($P > 0.05$) on eggshell color, egg weight, egg specific gravity, egg index, albumen weight (g), yolk index, and yolk weight. In conclusion, turmeric flour supplementation at 0.50% level can increase the percentage of albumen weight (%), yolk color, antibacterial activity against *Staphylococcus aureus* and *Escherichia coli*, and antioxidant activity.

Keywords: Eggs, turmeric flour, physical quality, antibacterial, antioxidant