

ABSTRAK

PENGARUH PEMBERIAN NANOEMULSI EKSTRAK RIMPANG TEMULAWAK (*Curcuma xanthorrhiza* Roxb.) TERHADAP KADAR ENZIM SGPT DAN SGOT SERTA ORGAN HEPAR AYAM BROILER

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Nanoemulsi ekstrak rimpang temulawak (NERT) berpotensi sebagai *Antibiotic Growth Promoter* (AGP) alami untuk ayam broiler, namun saat ini belum diketahui dampak pemberian NERT terhadap hepar ayam broiler sebagai organ utama dalam detoksifikasi, sehingga penelitian ini perlu dilakukan untuk mengetahuinya.

Sejumlah 72 ekor *day old chicken* (DOC) strain Lohman (MB 202) dibagi menjadi 4 kelompok perlakuan (6 ekor perkelompok dan 3 kali pengulangan), yaitu tanpa perlakuan, pemberian kolistin 50 mg/L, pemberian NERT 2 mg/kg berat badan (BB), dan pemberian NERT 4 mg/kg BB yang dilarutkan ke dalam air minum pada hari ke-23 selama 7 hari. Pada hari ke-35, sampel serum darah diambil untuk pengujian kadar enzim *Serum Glutamate Pyruvate Transaminase* (SGPT) dan *Serum Glutamate Oxaloacetate Transaminase* (SGOT) menggunakan kit, serta sampel hepar untuk pengamatan bobot, luas, dan gambaran histopatologis. Data dianalisis secara kualitatif dan kuantitatif menggunakan SPSS.

Pengamatan makroskopis menunjukkan hepar yang berwarna merah tua dengan tepi tipis meruncing, namun pemberian NERT menyebabkan peningkatan kadar SGPT dan SGOT secara signifikan ($p < 0,05$) serta nekrosis. Hal ini dimungkinkan karena pengaruh formulasi dosis nanoemulsi maupun stres yang menyebabkan adanya peningkatan aktivitas hepatik dan kerusakan hepar, sehingga diperlukan penelitian lebih lanjut terkait formulasi dosis NERT yang berbeda disertai protokol pengawasan lingkungan pemeliharaan yang lebih ketat.

Kata kunci: ayam broiler, enzim, hepar, nanoemulsi, temulawak

ABSTRACT

EXTRACT NANOEMULSION OF *TEMULAWAK* RHIZOME (*Curcuma xanthorrhiza* Roxb.) ON SGPT AND SGOT ENZYME LEVELS AND LIVER PROFILE IN BROILER CHICKENS

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Extract nanoemulsion of *temulawak* rhizome (ENTR) is a potential natural feed additive to broiler chickens. However, information about the effect of this formulation on broiler chickens' liver is still unclear, therefore, the objectives of this study were to assess this information.

A total of 72 Lohman strain (MB 202) DOC were divided into four treatment groups (6 broiler chickens each group with 3 times repetition): no treatment, given colistin 50 mg/L, given ENTR 2 mg/kg BW, and given ENTR 4 mg/kg BW which are diluted into drinking water on day 23 for 7 days. On day 35, blood samples were taken for Serum Glutamate Pyruvate Transaminase (SGPT) and Serum Glutamate Oxaloacetate Transaminase (SGOT) enzyme tests, as well as liver samples for assessing weight, size, and histopathology identification. Data were analysed qualitatively and quantitatively using SPSS.

The results showed that livers are brownish red with thin edges, however, ENTR treatment could significantly increase the level of SGPT and SGOT enzyme in blood serum ($p < 0,05$) and liver necrosis. These can be caused by nanoemulsion dosage and formulation, or heat stress factors which increased liver activities and necrosis, thus, further research about ENTR dosage and formulation with a tighter environment protocol should be initiated.

Keywords: broiler chickens, enzyme, liver, nanoemulsion, *temulawak*