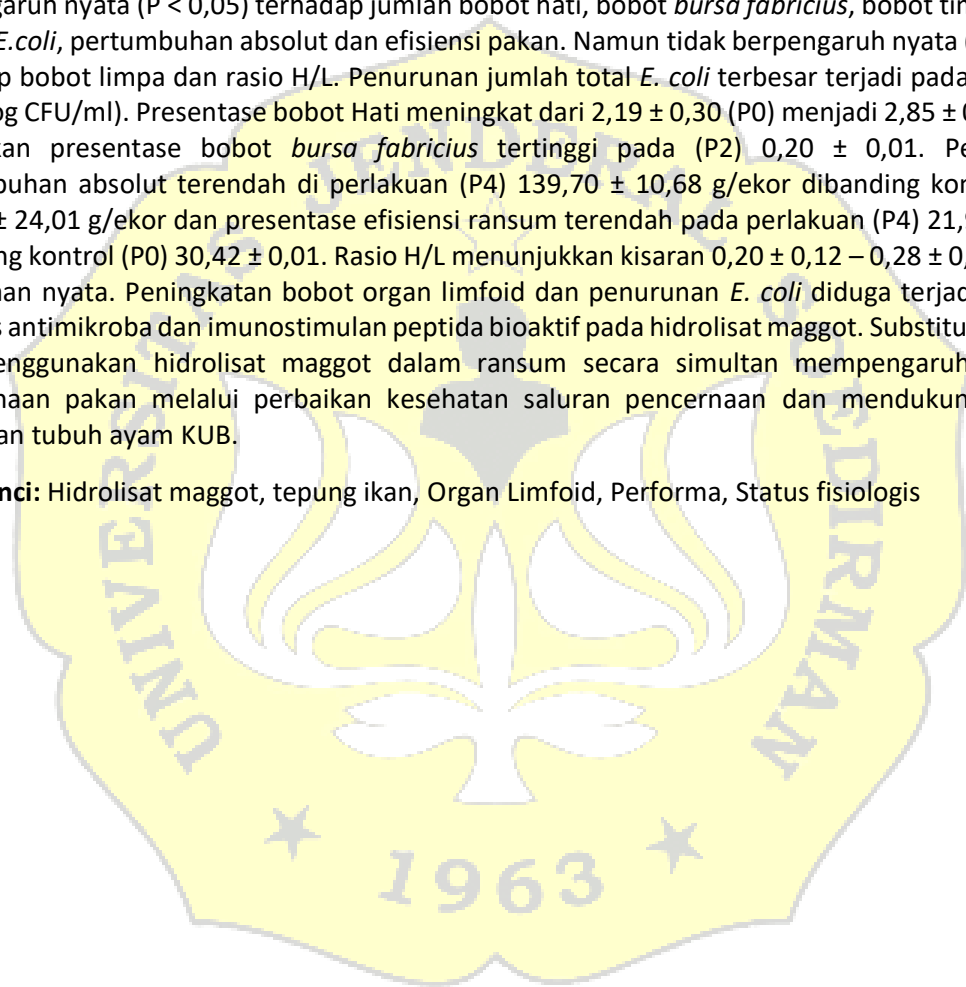


ABSTRAK

Penggunaan hidrolisat maggot diperoleh dari hasil hidrolisis protein larva *Hermetia illucens*, diteliti sebagai alternatif sumber protein pengganti tepung ikan yang ramah lingkungan. Penelitian ini bertujuan mengevaluasi pengaruh hidrolisat maggot dalam ransum terhadap parameter fisiologis dan sistem kekebalan tubuh ayam KUB. Perlakuan yang diberikan yaitu: P0 (kontrol), P1 (2,5% hidrolisat maggot), P2 (5%), P3 (7,5%), dan P4 (10%). Peubah yang diamati meliputi jumlah total *Escherichia coli*, bobot *bursa Fabricius*, bobot limpa, bobot hati, bobot *timus*, rasio heterofil/limfosit (H/L), pertumbuhan absolut dan efisiensi ransum. Data dianalisis menggunakan analisis ragam dan dilanjutkan uji DMRT (Duncan's Multiple Range Test). Hasil menunjukkan hidrolisat maggot berpengaruh nyata ($P < 0,05$) terhadap jumlah bobot hati, bobot *bursa fabricius*, bobot timus, total bakteri *E.coli*, pertumbuhan absolut dan efisiensi pakan. Namun tidak berpengaruh nyata ($P > 0,05$) terhadap bobot limpa dan rasio H/L. Penurunan jumlah total *E. coli* terbesar terjadi pada P2 ($6,51 \pm 0,16 \log \text{CFU/ml}$). Presentase bobot Hati meningkat dari $2,19 \pm 0,30$ (P0) menjadi $2,85 \pm 0,37$ (P4), sedangkan presentase bobot *bursa fabricius* tertinggi pada (P2) $0,20 \pm 0,01$. Penurunan pertumbuhan absolut terendah di perlakuan (P4) $139,70 \pm 10,68 \text{ g/ekor}$ dibanding kontrol (P0) $439,70 \pm 24,01 \text{ g/ekor}$ dan presentase efisiensi ransum terendah pada perlakuan (P4) $21,94 \pm 0,02$ dibanding kontrol (P0) $30,42 \pm 0,01$. Rasio H/L menunjukkan kisaran $0,20 \pm 0,12 - 0,28 \pm 0,08$ tanpa perbedaan nyata. Peningkatan bobot organ limfoid dan penurunan *E. coli* diduga terjadi melalui aktivitas antimikroba dan imunostimulan peptida bioaktif pada hidrolisat maggot. Substitusi tepung ikan menggunakan hidrolisat maggot dalam ransum secara simultan mempengaruhi efisiensi penggunaan pakan melalui perbaikan kesehatan saluran pencernaan dan mendukung sistem kekebalan tubuh ayam KUB.

Kata Kunci: Hidrolisat maggot, tepung ikan, Organ Limfoid, Performa, Status fisiologis



ABSTRACT

The use of maggot hydrolysate obtained from the hydrolysis of *Hermetia illucens* larvae protein was studied as an environmentally friendly alternative source of protein to replace fishmeal. This study aims to evaluate the effect of maggot hydrolysate in feed on physiological parameters and the immune system of KUB chickens. The treatments administered were: P0 (control), P1 (2.5% maggot hydrolysate), P2 (5%), P3 (7.5%), and P4 (10%). The variables observed included total *Escherichia coli* in the intestine, bursa of Fabricius weight, spleen weight, liver weight, thymus weight, heterophil/lymphocyte ratio (H/L), absolute growth, and feed efficiency. Data were analysed using analysis of variance (ANOVA) followed by Duncan's Multiple Range Test (DMRT). Results showed that maggot hydrolysate had a significant effect ($P < 0.05$) on liver weight, bursa of Fabricius weight, thymus weight, total *E. coli* bacteria, absolute growth, and feed efficiency. However, it did not have a significant effect ($P > 0.05$) on spleen weight and H/L ratio. The greatest reduction in total *E. coli* count occurred in P2 (6.51 ± 0.16 log CFU/ml). The percentage of liver weight increased from 2.19 ± 0.30 (P0) to 2.85 ± 0.37 (P4), while the highest percentage of bursa fabricius weight was observed in P2 (0.20 ± 0.01). The lowest absolute growth reduction was observed in treatment (P4) at 139.70 ± 10.68 g/bird compared to the control (P0) 439.70 ± 24.01 g/bird, and the lowest feed efficiency percentage was observed in treatment (P4) at 21.94 ± 0.02 compared to the control (P0) 30.42 ± 0.01 . The H/L ratio ranged from 0.20 ± 0.12 to 0.28 ± 0.08 without significant differences. The increase in lymphoid organ weight and decrease in *E. coli* are likely due to the antimicrobial and immunostimulatory activities of bioactive peptides in maggot hydrolysate. Replacing fishmeal with maggot hydrolysate in feed significantly improves feed efficiency by improving digestive health and supporting the immune system of KUB chickens.

Keywords: Maggot hydrolysate, fish meal, lymphoid organs, performance, physiological status