

PENAMBAHAN TEPUNG *FULL-FAT* DAN *DEFATTED* LARVA *BLACK SOLDIER FLY* (*Hermetia illucens*) PADA RANSUM TERHADAP SALURAN PENCERNAAN DAN MORFOLOGI USUS HALUS ITIK HIBRIDA

Dzulfikar Firdaus Zain Avicenna
19/442967/PT/08099

INTISARI

Tepung larva *Full-Fat* dan *Defatted Larva Black Soldier Fly* (BSF-L) merupakan bahan pakan sumber protein alternatif untuk unggas. Tepung BSF-L memiliki kandungan lemak yang tinggi sehingga perlu dilakukan proses penurunan kadar lemak. Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan tepung *full-fat* dan *defatted* BSF-L pada ransum terhadap saluran pencernaan dan morfologi usus itik hibrida. Itik hibrida berjumlah 140 ekor dibagi menjadi 5 perlakuan dengan 4 pengulangan, setiap pengulangan terdiri dari 7 ekor itik. Perlakuan pada penelitian terdiri atas CTRL = pakan basal (tanpa penambahan tepung larva BSF), FFM8 = CTRL + tepung *full-fat* larva BSF 8%, FFM16 = CTRL + tepung *full-fat* larva BSF 16%, DFM8 = CTRL + tepung *defatted* larva BSF 8%, FFM16 = CTRL + tepung *defatted* larva BSF 16%. Pakan perlakuan diberikan pada itik hibrida usia 11 sampai 42 hari. Hasil penelitian menunjukkan bahwa penambahan tepung BSF-L pada ransum menurunkan berat crop pada FFM8, FFM16, dan DFM8 ($p=0,002$), meskipun DFM16 tidak berbeda dengan perlakuan kontrol. Penambahan tepung larva BSF menurunkan panjang sekum secara signifikan ($p=0,006$), meskipun FFM8 tidak berbeda dengan perlakuan kontrol. Perlakuan pakan tidak berpengaruh terhadap pH setiap bagian usus halus. Penambahan DFM16 memiliki rasio vili/kripta paling tinggi ($p<0,001$), meskipun FFM8, FFM16, dan DFM8 tidak berbeda dengan perlakuan kontrol. Kesimpulan penelitian ini adalah tepung larva BSF DFM16 dapat meningkatkan perkembangan rasio vili/kripta tanpa berpengaruh negatif terhadap panjang dan berat total usus halus. Penggunaan tepung larva BSF yang sudah diekstraksi minyaknya lebih baik dibandingkan tepung larva BSF yang belum diekstraksi minyaknya. Kecenderungan penggunaan DFM16 memiliki dampak lebih baik terhadap saluran pencernaan itik hibrida.

Kata kunci: itik, pakan, larva BSF, protein, saluran pencernaan

INCLUSION OF FULL-FAT AND DEFATTED BLACK SOLDIER FLY MEAL (*Hermetia illucens*) TO FEED RATION ON DIGESTIVE TRACT AND HISTOMORPHOLOGY OF THE SMALL INTESTINE OF HIBRIDA DUCKS

Dzulfikar Firdaus Zain Avicenna
19/442967/PT/08099

ABSTRACT

Full-Fat and Defatted Larva Black Soldier Fly Meal (BSF-L) are alternative protein source for poultry. BSF-L meal has a high fat content so it is necessary to reduce the fat content. This study aims to determine the effect of the inclusion of full-fat and defatted BSF-L meal on feed rations on digestive organs and intestinal morphology of hybrid ducks. Hybrid ducks numbering 140 heads are divided into 5 treatments with 4 repetitions, each repetition consists of 7 ducks. The treatment in the study consisted of CTRL = basal feed (without the inclusion of BSF larval meal), FFM8 = CTRL + BSF larvae full-fat meal 8%, FFM16 = CTRL + BSF larvae full-fat meal 16%, DFM8 = CTRL + BSF larvae defatted meal 8%, FFM16 = CTRL + BSF larvae defatted meal 16%. Feed treatment is given to hybrid ducks aged 11 to 42 days. Data observed included duodenum, jejunum, ileum, cecum, and colon length, as well as crop, proventricular, gizzard, liver, duodenum, jejunum, ileum, cecum, and colon weight, small intestine pH, villi length, villi width, crypta depth, and villi to crypt depth ratio. The data obtained were statistically analyzed using one way pattern variance analysis (ANOVA). The results showed that the inclusion of BSF-L meal to the ration decreased crop weight in FFM8, FFM16, and DFM8 ($p = 0.002$), even though DFM16 was no different from the control treatment. The inclusion of BSF larval meal significantly decreased cecum length ($p = 0.006$), although FFM8 was no different from the control treatment. Feed treatment has no effect on the pH of any part of the small intestine. The inclusion of DFM16 had the highest villi/crypt ratio ($p < 0.001$), although FFM8, FFM16, and DFM8 did not differ from the control treatment. The conclusion of this study is that BSF DFM16 larval meal can improve the development of the villi/crypt ratio without negatively affecting the total length and weight of the small intestine. The use of BSF larvae meal that has been extracted oil is better than BSF larval meal that has not been extracted oil. The tendency to use DFM16 has a better impact on the gastrointestinal tract of hybrid ducks.

Keywords: duck, feed, BSF larvae, protein, digestive tract