

ABSTRAK

Gilang Nur Rizky. Maggot (*Hermetia illucens*) merupakan larva dari lalat *Black Soldier Fly* (BSF) yang berpotensi sebagai pakan alternatif sumber protein dan lemak yang sangat baik untuk metabolisme ternak unggas. Asam lemak tak jenuh ganda (*Polyunsaturated Fatty Acid*) pada maggot penting untuk kesehatan, metabolisme, dan pertumbuhan Ayam Sentul. Penelitian bertujuan mengkaji pengaruh dan taraf terbaik suplementasi hidrolisat maggot BSF sebagai sumber pakan fungsional terhadap pencernaan protein kasar dan serat kasar pakan Ayam Sentul. Materi yang digunakan adalah 100 ekor *Day Old Chick* (DOC) Ayam Sentul. Metode penelitian menggunakan Rancangan Acak Lengkap (RAL) dengan 4 perlakuan dan 5 ulangan. Perlakuan yang diberikan yaitu P_0 =pakan basal, $P_1 = P_0 + 2\%$ Hidrolisat Maggot BSF, $P_2 = P_0 + 4\%$ Hidrolisat Maggot BSF, dan $P_3 = P_0 + 6\%$ Hidrolisat Maggot BSF. Variabel yang diukur adalah pencernaan protein kasar dan pencernaan serat kasar pakan Ayam Sentul. Analisis data menggunakan *Analysis Of Variance* (ANOVA) dan uji lanjut Beda Nyata Jujur (BNJ) serta *Orthogonal Polynomial*. Hasil ANOVA menunjukkan bahwa suplementasi hidrolisat maggot BSF yang dihidrolisis menggunakan *Lactobacillus casei* memberikan pengaruh yang sangat nyata ($P < 0,01$) terhadap pencernaan protein kasar dan pencernaan serat kasar pakan Ayam Sentul. Kecernaan Protein kasar dan serat kasar pakan yang disuplementasi hidrolisat maggot BSF lebih baik daripada pakan basal. Hasil rata-rata nilai pencernaan protein kasar pakan Ayam Sentul pada perlakuan P_0, P_1, P_2 , dan P_3 yaitu $78,45 \pm 0,89\%$, $87,61 \pm 1,03\%$, $92,32 \pm 1,85\%$ dan $90,85 \pm 0,45\%$, sedangkan rata-rata nilai pencernaan serat kasar pakan pada perlakuan P_0, P_1, P_2 , dan P_3 yaitu $60,48 \pm 2,17\%$, $75,58 \pm 1,59\%$, $84,30 \pm 3,03\%$ dan $81,72 \pm 1,27$. Hasil Uji *Orthogonal Polynomial* pada pencernaan protein kasar diperoleh persamaan $Y = 78,364 + 6,0821x - 0,6643x^2$ sedangkan pencernaan serat kasar diperoleh persamaan $Y = 60,233 + 10,254x - 1,1052x^2$, dengan nilai pencernaan tertinggi pada pencernaan protein $92,30\%$, sedangkan pencernaan serat kasar $84,01\%$. Suplementasi hidrolisat maggot BSF hasil hidrolisis menggunakan *Lactobacillus casei* dapat meningkatkan pencernaan protein kasar dan serat kasar pakan Ayam Sentul, dengan level optimum 4,6-4,7%.

Kata kunci : Hidrolisis, Maggot BSF, *Polyunsaturated Fatty Acid*, Kecernaan Protein Kasar, Kecernaan Serat Kasar.

ABSTRACT

Gilang Nur Rizky. Maggot (*Hermetia illucens*) is a larva of the *Black Soldier Fly* (BSF) which has the potential as an alternative feed source of protein and fat that is very good for poultry metabolism. Polyunsaturated fatty acids in maggots are important for the health, metabolism, and growth of Sentul Chickens. The study aims to examine the effect and best level of BSF maggot hydrolysate supplementation as a functional feed source on the digestibility of crude protein and crude fiber of Sentul Chicken feed. The material used was 100 Day Old Chicks (DOC) of Sentul Chickens. The research method used a Completely Randomized Design (CRD) with 4 treatments and 5 replications. The treatments given were P_0 = basal feed, $P_1 = P_0 + 2\%$ BSF Maggot Hydrolysate, $P_2 = P_0 + 4\%$ BSF Maggot Hydrolysate, and $P_3 = P_0 + 6\%$ BSF Maggot Hydrolysate. The variables measured were the digestibility of crude protein and crude fiber of Sentul Chicken feed. Data analysis used Analysis of Variance (ANOVA) and further tests of Honestly Significant Difference (HSD) and Orthogonal Polynomial. The ANOVA results showed that supplementation of BSF maggot hydrolysate hydrolyzed using *Lactobacillus casei* had a very significant effect ($P < 0.01$) on the digestibility of crude protein and crude fiber of Sentul Chicken feed. The digestibility of crude protein and crude fiber of feed supplemented with BSF maggot hydrolysate was better than that of basal feed. The average value of crude protein digestibility of Sentul Chicken feed in treatments P_0, P_1, P_2 , dan P_3 was $78,45 \pm 0,89\%$, $87,61 \pm 1,03\%$, $92,32 \pm 1,85\%$ and $90,85 \pm 0,45\%$, while the average value of crude fiber digestibility of feed in treatments P_0, P_1, P_2 , dan P_3 was $60,48 \pm 2,17\%$, $75,58 \pm 1,59\%$, $84,30 \pm 3,03\%$ and $81,72 \pm 1,27\%$. The results of the Orthogonal Polynomial Test on crude protein digestibility obtained the equation $Y = 78,364 + 6,0821x - 0,6643x^2$ while the crude fiber digestibility obtained the equation $Y = 60,233 + 10,254x - 1,1052x^2$, with the highest digestibility value at 92,30% protein digestibility, while crude fiber digestibility was 84.01%. Supplementation of BSF maggot hydrolysate resulting from hydrolysis using *Lactobacillus casei* can increase the digestibility of crude protein and crude fiber in Sentul Chicken feed, with an optimum level of 4.6-4.7%.

Keywords : Hydrolysis, BSF Maggot, Polyunsaturated Fatty Acid, Crude Protein Digestibility, Crude Fiber Digestibility