RINGKASAN

PENGGUNAAN HIDROLISAT MAGGOT (*Hermetia illucens*) SEBAGAI PAKAN SUBSTITUSI TEPUNG IKAN PENGARUHNYA TERHADAP PERFORMA DAN KECERNAAN NUTRIEN PAKAN AYAM KUB

Arya Dwiki Ramadhan
D2A023005

Maggot merupakan bahan pakan sumber protein yang potensial untuk menggantikan tepung ikan. Maggot mengandung nutrisi berupa protein, lemak, energi dan mineral yang penting menunjang proses produksi unggas. Maggot memiliki kekurangan berupa kandungan lemaknya yang tinggi dan mengandung antinutrisi berupa kitin (protein serat). Salah satu metode bioteknologi pakan untuk mengatasi kekurangan dari maggot adalah hidrolisis enzimatis asal *Mix-C*. Ekstrak kasar enzim asal *Mix-C* memiliki aktivitas protease, lipase dan kitinase sehingga dapat meningkatkan kualitas tepung maggot. Penelitian bertujuan untuk mengkaji pengaruh substitusi tepung ikan menggunakan hidrolisat maggot terhadap performa dan kecernaan nutrien pakan ayam KUB. Penelitian dilaksanakan pada tanggal 3 Desember 2024 hingga 31 Januari 2025 bertempat di Desa Karanggintung dan Laboratorium Ilmu Nutrisi dan Makanan Ternak, Fakultas Peternakan, Universitas Jenderal Soedirman. Penelitian eksperimental *in vivo* menggunakan materi 150 ekor DOC jantan ayam KUB yang dipelihara selama 45 hari. Rancangan percobaan menggunakan Rancangan Acak Lengkap (RAL) yang terdiri dari lima perlakuan dan lima ulangan yaitu R_0 : pakan kontrol (100% tepung ikan + 0% hidrolisat maggot), R_1 : pakan mengandung 75% tepung ikan + 25% hidrolisat maggot, R_2 : pakan mengandung 50% tepung ikan + 50% hidrolisat maggot, R_3 : pakan mengandung 25% tepung ikan + 75% hidrolisat maggot dan R_4 : pakan mengandung 0% tepung ikan + 100% hidrolisat maggot. Hasil performa ayam KUB menghasilkan konsumsi pakan 13,84 – 31,41 g/ekor/hari, PBBH 3,04 – 9,56 g/ekor/hari, bobot badan 226,17 – 523,03 g/ekor dan konversi pakan 3,29 – 4,57. Hasil kecernaan nutrien pakan ayam KUB menghasilkan kecernaan protein kasar 76,91 – 85,11%, kecernaan lemak kasar 90,72 – 95,44% dan kecernaan serat kasar 74,73 – 80,66%. Hasil analisis variansi menunjukkan bahwa substitusi tepung ikan menggunakan hidrolisat maggot dalam pakan ayam KUB berpengaruh sangat nyata ($P<0,01$) terhadap performa dan kecernaan nutrien pakan. Uji lanjut menginformasikan substitusi tepung ikan menggunakan hidrolisat maggot pada pakan ayam KUB tidak meningkatkan performa, kecernaan protein kasar dan kecernaan serat kasar akan tetapi meningkatkan kecernaan lemak kasar.

Kata kunci : hidrolisat, kecernaan, maggot, performa, substitusi.

SUMMARY

THE USE OF MAGGOT (*Hermetia illucens*) HYDROLYSATE AS A SUBSTITUTE FOR FISH MEAL EFFECT ON PERFORMANCE AND DIGESTIBILITY OF NUTRIENTS IN KUB CHICKEN FEED

Arya Dwiki Ramadhan
D2A023005

Maggots are a potential protein source feed ingredient to replace fish meal. Maggots contain nutrients such as protein, fat, energy, and minerals essential for supporting poultry production processes. However, maggots have drawbacks including high fat content and the presence of antinutrients such as chitin (a fibrous protein). One biotechnology method to address the limitations of maggots is enzymatic hydrolysis using Mix-C. The crude enzyme extract from Mix-C exhibits protease, lipase, and chitinase activities, thereby improving the quality of maggot meal. This study aims to investigate the effect of substituting fish meal with maggot hydrolysate on the performance and nutrient digestibility of KUB chicken feed. The study was conducted from December 3, 2024, to January 31, 2025, at Karanggintung Village and the Laboratory of Animal Nutrition and Feed Science, Faculty of Animal Science, Jenderal Soedirman University. The experimental study in vivo used 150 male KUB DOC, which were reared for 45 days. The experimental design employed a completely randomized design (CRD) consisting of five treatments and five replicates, R_0: control feed (100% fish meal + 0% maggot hydrolysate), R_1: feed containing 75% fish meal + 25% maggot hydrolysate, R_2: feed containing 50% fish meal + 50% maggot hydrolysate, R_3: feed containing 25% fish meal + 75% maggot hydrolysate, and R_4: feed containing 0% fish meal + 100% maggot hydrolysate. The performance results of KUB chickens showed feed intake of 13.84 – 31.41 g/bird/day, ADG of 3.04 – 9.56 g/bird/day, body weight of 226.17 – 523.03 g/bird, and feed conversion ratio (FCR) of 3.29 – 4.57. The nutrient digestibility of the KUB chicken feed resulted in crude protein digestibility of 76.91 – 85.11%, crude fat digestibility of 90.72 – 95.44%, and crude fiber digestibility of 74.73 – 80.66%. The analysis of variance (ANOVA) results indicated that the substitution of fish meal with maggot hydrolysate in KUB chicken feed had a significantly different ($P<0.01$) on feed performance and nutrient digestibility. Further analyzed inform substitution fish meal with maggot hydrolysate in KUB chicken feed didn't improve performance, crude protein digestibility, and crude fiber digestibility, but it did improve crude fat digestibility.

Keywords: digestibility, hydrolysate, maggot, performance, substitution.