

## ABSTRAK

Industri ayam broiler adalah penyedia utama kebutuhan protein bagi masyarakat Indonesia. Untuk mencapai pertumbuhan yang optimal, ayam broiler memerlukan pakan dengan kandungan protein yang tinggi. Namun, pakan ayam broiler yang tersedia di pasaran memiliki harga yang tinggi karena bahan bakunya masih diimpor dari luar negeri. Limbah pengolahan ikan, seperti hati ikan pari totol biru [*Neotrygon caeruleopunctata* (Last, White, dan Secr t, 2016)], mengandung protein tinggi sehingga dapat dijadikan pakan alternatif untuk ayam broiler. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian ekstrak hati ikan pari totol biru terhadap struktur morfologi usus halus dan performa pertumbuhan ayam broiler. Sebanyak 300 *Day Old Chicks* (DOC) ayam broiler jantan dan betina (50:50) strain Cobb 500 dipelihara hingga umur 14 hari. Penelitian menggunakan Rancangan Acak Lengkap (RAL) dengan 4 perlakuan dan 5 ulangan, setiap ulangan terdiri dari 15 ekor ayam. Perlakuan ekstrak hati pari (EHP) biru diberikan per kg pakan basal (PB), meliputi K (0% EHP/kg PB), P1 (0,5% EHP/kg PB), P2 (1% EHP/kg PB) dan P3 (2% EHP/kg PB). Sebanyak 5 ekor ayam dari setiap perlakuan dibedah untuk diambil duodenum, jejunumnya dan ileumnya, kemudian dibuat preparat histologi dengan metode pewarnaan PAS-AB (Periodic Acid Schiff - Alcian Blue). Struktur histologi yang diamati pada duodenum, jejunum dan ileum adalah panjang vili, kedalaman kriptas, jumlah sel goblet, dan luas sel goblet. Pengambilan data berat badan, *feed intake* dan indeks organ usus halus juga dilakukan untuk melihat performa pertumbuhan ayam broiler. Hasil penelitian menunjukkan bahwa kelompok perlakuan P1, P2 dan P3 yang menerima EHP sebesar 0,5%; 1% dan 2% mengalami peningkatan signifikan pada morfologi duodenum, jejunum dan ileum yang meliputi panjang vili, kedalaman kriptas, rasio vili-kriptas, jumlah sel goblet, dan luassel goblet dibandingkan kelompok K (0% EHP). Kelompok P3 juga menunjukkan performa pertumbuhan yang paling baik dibandingkan dengan kelompok K, P1 dan P2. Sehingga, dapat disimpulkan bahwa pemberian EHP dengan konsentrasi 2% mampu meningkatkan struktur morfologi duodenum, jejunum dan ileum serta performa pertumbuhan ayam broiler secara optimal.

Kata kunci: ayam broiler, ekstrak hati, ikan pari totol biru, histologi usus halus.

## **ABSTRACT**

*The The broiler industry is a major provider of protein for the Indonesian people. For optimal growth, broilers need feed that contains high protein. However, broiler feed sold in the market is expensive because the raw materials are still imported from other countries. Fish processing waste such as blue spotted stingray liver [Neotrygon caeruleopunctata (Last, White and Secrét, 2016)] contains high protein that can be used as an alternative feed for broiler chickens. This study aims to determine the effect of feeding blue spotted stingray liver extract on the morphological structure of the small intestine and growth performance of broiler chickens. A total of 300 Day Old Chicks (DOC) male and female broiler (50:50) Cobb 500 strain were reared until 14 days of age. The study used a completely randomized design (CRD) with 4 treatments and 5 replicates, each replicate consisting of 15 chickens. The treatment of blue stingray liver extract (EHP) was given per kg of basal feed (PB), including K (0% EHP/kg PB), P1 (0.5% EHP/kg PB), P2 (1% EHP/kg PB) and P3 (2%EHP/kg PB). A total of 5 chickens from each treatment were dissected to take the duodenum, jejunum and illeum, then histology preparations were made using PAS-AB (Periodic Acid Schiff - Alcian Blue) staining method. Histological structures observed in the duodenum, jejunum and ileum were villi length, kripte depth, number of goblet cells, and goblet cell area. Data on body weight, feed intake and small intestine organ index were also collected to see the growth performance of broiler chickens. The results showed that the P1, P2 and P3 treatment groups that received EHP at 0.5%; 1% and 2% experienced a significant increase in the morphology of the duodenum, jejunum and ileum which included villus length, krypta depth, villus-krypta ratio, number of goblet cells, and goblet cell area compared to group K (0% EHP). Group P3 also showed the best growth performance compared to groups K, P1 and P2. Thus, it can be concluded that the administration of EHP with a concentration of 2% is able to improve the morphological structure of the duodenum, jejunum and ileum as well as the optimal growth performance of broiler.*

*Keywords: broiler, liver extract, blue spotted stingray, small intestine histology*