

**STRUKTUR HISTOLOGIS USUS HALUS DAN PERFORMA
PERTUMBUHAN BROILER *Gallus gallus gallus* (Linnaeus, 1758)
SETELAH PEMBERIAN EKSTRAK ETANOLIK MAKROALGA LAUT
Sargassum glaucescens (J. Agardh, 1848)**

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INTISARI

Salah satu tantangan yang dihadapi industri broiler adalah meningkatkan produktivitas broiler tanpa menggunakan antibiotik sintetik. Makroalga laut *Sargassum glaucescens* mengandung komponen bioaktif yang berpotensi sebagai tambahan pakan untuk meningkatkan produktivitas broiler. Penelitian ini bertujuan mengetahui efek pemberian ekstrak etanolik *Sargassum glaucescens* (SGE) terhadap struktur usus halus dan performa pertumbuhan broiler. Penelitian ini menggunakan 300 ekor *Day-Old Chick* ayam broiler strain *Cobb 500* jantan dan betina yang dibagi ke dalam 4 perlakuan dan 5 ulangan dengan masing-masing ulangan terdiri dari 15 ekor broiler. Kelompok Kontrol (K) diberi pakan basal (PB), Perlakuan 1 (P1) diberi SGE 0,5%/kg PB, Perlakuan 2 (P2) diberi SGE 1%/kg PB, dan Perlakuan 3 (P3) diberi 2%/kg PB. Parameter yang diamati adalah berat badan, perolehan berat, konsumsi pakan, rasio konversi pakan, dan morfometri tubuh ayam pada umur *posthatch*, 4, 9, dan 14 hari, indeks organ dan struktur histologis usus halus (duodenum, jejunum, ileum) pada umur 15 hari. Data dianalisis menggunakan *One-way ANOVA* dan dilanjutkan dengan uji Duncan pada signifikansi $p \leq 0,05$. Hasil penelitian menunjukkan suplementasi SGE hingga 2% secara signifikan berpengaruh positif terhadap ukuran vili, kripta, rasio vili/kripta, luas area dan jumlah sel goblet usus halus, dan indeks organ broiler sampai umur 15 hari. Performa pertumbuhan dan morfometri tubuh terbaik terdapat pada kelompok P3. Penelitian ini menyimpulkan bahwa pemberian SGE mampu meningkatkan struktur histologis usus halus sampai umur 15 hari dan memperbaiki performa pertumbuhan broiler sampai umur 14 hari.

Kata kunci : Broiler, pakan basal, rasio konversi pakan, *Sargassum glaucescens*, usus halus

HISTOLOGICAL STRUCTURE OF SMALL INTESTINE AND GROWTH PERFORMANCE OF BROILER *Gallus gallus gallus* (Linnaeus, 1758) AFTER SUPPLEMENTATION OF ETHANOLIC EXTRACT OF MARINE MACROALGAE *Sargassum glaucescens* (J. Agardh, 1848)

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ABSTRACT

One of the challenges facing the broiler industry is increasing broilers' productivity without the use of synthetic antibiotics. Marine macroalgae *Sargassum glaucescens* contains bioactive components that have the potential as feed additives to increase broiler productivity. This study aims to determine the effect of *Sargassum glaucescens* ethanolic extract (SGE) on the structure of the small intestine and broiler growth performance. This study used 300 Day-Old Chick male and female broilers of *Cobb 500* strain which was divided into 4 treatments and 5 replicates with each replicate consisted of 15 broilers. Control Group (K) was given basal feed (BF), treatment 1 (P1) was given 0,5% SGE/kg of BF, treatment 2 (P2) was given 1% SGE/kg of BF, and treatment 3 (P3) was given 2% SGE/kg of BF. The parameters observed were body weight, weight gain, feed intake, Feed Conversion Ratio (FCR), and body morphometry of chickens at post-hatch, 4, 9, and 14 days of age, organ indices, and histological structures of the small intestine (duodenum, jejunum, ileum) at 15 days of age. Data were analyzed using one-way ANOVA followed by Duncan's test at a significance level of $p \leq 0.05$. The results showed that supplementation with SGE up to 2% significantly positively influenced villus size, crypt size, ratio of villus/crypt, area, and goblet cells count in the small intestine, as well as organ indices in broilers up to 15 days of age. The best growth performance and body morphometry were observed in the P3 group. This study concluded that SGE supplementation can improve small intestine histological structure up to 15 days of age and enhance broiler growth performance up to 14 days of age.

Keywords: Basal feed, broiler, Feed Conversion Ratio, *Sargassum glaucescens*, small intestine