

PENGARUH EKSTRAK KAYU SECANG DI DALAM PAKAN TERHADAP HISTOMORFOLOGI USUS DAN PROFILE BIOKIMIA DARAH PADA AYAM PETELUR

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan ekstrak kayu secang (*Caesalpineia sappan* L.) pada pakan terhadap histomorfologi usus halus, biokimia darah, dan profil darah ayam petelur. Empat puluh lima ayam petelur strain Lohmann Brown berumur 47 minggu ditempatkan pada kandang batere dengan 5 ulangan setiap perlakuan dan 3 ekor ayam di setiap kandang ulangan. Ayam mendapatkan salah satu perlakuan sebagai berikut: pakan basal tanpa penambahan aditif (T0; kontrol), pakan basal + 0,25 ekstrak kayu secang (T1), dan pakan basal + 0,50% ekstrak kayu secang (T2). Data yang dikoleksi meliputi data histomorfologi dinding jejunum (tinggi dan lebar vili, kedalaman kriptas, rasio tinggi vili dan kedalaman kriptas), biokimia darah (kolesterol, glukosa, albumin, fosfor, kalsium, dan kadar kreatinin), serta profil darah (hemoglobin, hematokrit, eritrosit, total plasma protein, Mean Cell Volume, Mean Cell Hemoglobin, Mean Cell Hemoglobin Concentration, heterofil, basofil, eosinofil, limfosit, monosit, serta perbandingan heterofil:limfosit). Data yang diperoleh dianalisis statistik menggunakan Rancangan Acak Lengkap pola searah berbasis nilai P kurang dari 5%. Data dengan perbedaan yang nyata diuji lanjut menggunakan Uji Duncan New Multiple Range Test (DMRT). Hasil penelitian menunjukkan bahwa penambahan pakan dengan ekstrak kayu secang tidak mempengaruhi biokimia darah, profil darah, maupun tinggi dan lebar villus pada dinding jejunum ayam petelur. Namun demikian, penambahan 0,5% ekstrak secang dalam pakan mengurangi ketebalan mukosa ($P < 0,001$) dan kedalaman kriptas ($P < 0,05$) sehingga meningkatkan rasio antara ketinggian villus dan kedalaman kriptas ($P < 0,001$) jejunum ayam petelur. Dapat disimpulkan bahwa penambahan ekstrak secang memperbaiki histomorfologi usus halus ayam petelur.

kata Kunci: Ayam petelur, Biokimia darah, Ekstrak kayu secang, Histomorfologi jejunum, Profil darah

THE EFFECT OF DIETARY SECANG WOOD EXTRACT SUPPLEMENTATION ON INTESTINAL HISTOMORPHOLOGY, BLOOD BIOCHEMISTRY, AND BLOOD PROFILE IN LAYING HEN

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ABSTRAK

Purpose of this study was to determine the effects dietary supplementations of secang (*Caesalpineia sappan* L.) wood extract with carrier maizena on histomorphology of the jejunal cell wall, blood biochemistry, and blood profile in laying hens. Fourty-five 42 weeks Lohmann Brown laying hens were placed in battery cages with 5 replications per treatment and 3 chickens in each replicate cage. The birds were treated with one of the following dietary treatments: basal diet only (T0; control), basal diet + 0,25 secang wood extract (T1), and basal diet + 0,50% secang wood extract (T2). Data which collected were: jejunal cell wall histomorphology (villus height and width, crypt depth, villus height and crypt depth ratio), blood biochemistry (cholesterol, glucose, albumin, phosphorus, calcium, and creatinine levels), and blood profile (hemoglobin, hematocrit, erythrocytes, total plasma protein, Mean Cell Volume, Mean Cell Hemoglobin, Mean Cell Hemoglobin Concentration, heterophils, basophils, eosinophils, lymphocytes, monocytes, and heterophile: lymphocyte ratio). The data obtained were statistically analyzed using Oneway Analysis of variance. Any statement of significant differences between treatments will be based on a P value of less than 5%. Data with significant differences were further tested using Duncan New Multiple Range Test (DMRT). Result showed that dietary addition with secang wood extract did not affect biochemistry of blood, blood profile, and height and width of villus on the chicken jejunum wall layer. However, the dietary addition of 0,5% secang wood extract reduced mucosal thickness ($P < 0,001$) and crypt depth ($P < 0,05$) thus increasing the ratio between villus height and crypt depth ($P < 0,001$) of jejunal wall. It can be concluded that dietary addition of secang wood extract improved histomorphology of layer chicken's small intestine.

Keyword : Blood biochemistry, Blood profile, Intestinal histomorphology, Laying hen, Secang wood extract