

**ALTERNATIVE BROWN ALGAE POWDER (*Sargassum* sp.)
AS FEED SUPPLEMENT: STUDY ON PERFORMANCE
AND BROILER IMMUNITY SYSTEM**

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ABSTRACT

Forbidden of antibiotic in feed made scientist work to explore alternative ingredient for replaced antibiotic that can be effective and good for environment. Brown algae containing bioactive ingredients that have antibacterial effect and higher possibilities for replaced antibiotic as supplement in broiler feed. The study aimed was to investigate the effect of brown algae as supplement in broiler chicken to improve performance and immunity system. Ninety broiler chicks (DOC) were distributed to three different experimental diet group including P0 (control), P1 (0,5% brown algae) and P2 (6% brown algae). Broiler chicken kept for 28 days. Body weight, weight of breast muscle, weight of abdominal lipid, organ weight (liver, proventriculus-ventriculus), feed intake, FCR, lymphoid organ weight (thymic, limp and bursa of Fabricius), white blood cell count, antibody titer and CD8-CD4 cell count compared and analyzed. The research used randomly design with one way ANOVA analysis and then multiple comparison by post hoc Dunnett. At 0 to 7 d of age supplementation of brown algae at 0,5% (P1) was the most effective concentration for increasing body weight of chicken. There was no difference ($P>0,05$) in weight of breast muscle between P0, P1 and P2. In this research, weight of abdominal lipid did not differ ($P>0,05$) between the three groups. The result showed that the treatment effect wasn't significant on liver weight, weight of proventriculus-ventriculus, feed intake, FCR, weight of thymus and limp weight. The feeding with 6% brown algae level on broiler chicken can give the best effect at bursa of Fabricius weight. Dietary treatments had no effect on white blood cell count, antibody titer and CD4-CD8 cell count. The conclusion of this research is supplementation of brown algae has effect on performance at 0 to 7 d of age and hasn't improved on immunity system.

Kata kunci: Broiler chicken, Brown algae, Broiler chicken supplement

**ALTERNATIF TEPUNG ALGA COKLAT (*Sargassum* sp.) SEBAGAI
SUPLEMEN PAKAN: STUDI TERHADAP PERFORMA
DAN SISTEM IMUN AYAM BROILER**

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INTISARI

Pelarangan antibiotik dalam pakan menggerakkan ilmuwan untuk menemukan bahan pengganti antibiotik yang efisien dan lebih ramah lingkungan. Alga coklat memiliki berbagai zat bioaktif yang berpengaruh pada performa dan sistem imun. Alga coklat berpotensi besar menggantikan antibiotik sebagai suplemen dalam pakan. Penelitian ini bertujuan untuk mengetahui pengaruh alga coklat sebagai suplemen pada ayam broiler yang mampu meningkatkan performa dan sistem imun. Sembilan puluh ayam broiler berumur sehari (DOC) ditempatkan pada tiga kelompok perlakuan pakan yang berbeda, yaitu P0 (pakan kontrol/tanpa penambahan), P1 (0,5% alga coklat) dan P2 (6% alga coklat). Ayam broiler dipelihara selama 28 hari. Berat akhir ayam, berat otot dada, berat lemak abdomen, berat organ dalam (hati, proventrikulus-ventrikulus), konsumsi pakan, FCR, berat organ limfoid (timus, limpa, bursa Fabrisius), total leukosit, titer antibodi dan rasio CD8-CD4 dibandingkan serta dianalisis. Rancangan penelitian yang digunakan adalah random disain dengan analisis data menggunakan analisis variansi pola searah dan diuji lanjut dengan *post hoc* Dunnet. Pada usia 0 sampai 7 hari suplementasi alga coklat dengan dosis 0,5% (P1) adalah dosis paling efektif untuk meningkatkan berat badan ayam. Pada parameter otot dada tidak ada perbedaan ($P>0,05$) diantara P0, P1 dan P2. Pada penelitian ini tidak ada perbedaan ($P>0,05$) lemak abdomen dari ketiga kelompok. Hasil penelitian menunjukkan bahwa perlakuan tidak berpengaruh pada berat organ hati, proventrikulus-ventrikulus, konsumsi pakan, FCR, berat organ limfoid (timus dan limpa). Pemberian suplementasi alga sebesar 6% memberikan pengaruh paling optimal pada berat bursa Fabrisius. Pakan suplemen tidak berpengaruh pada jumlah leukosit, titer antibodi dan rasio CD4-CD8. Hasil penelitian dapat disimpulkan bahwa alga coklat berpengaruh secara signifikan pada performa ayam dari usia 0 sampai dengan 7 hari dan tidak berpengaruh pada peningkatan kinerja sistem imun.

Kata kunci: Ayam broiler, Alga coklat, Suplemen ayam broiler

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