

**KESEHATAN SALURAN PENCERNAAN AYAM BROILER YANG MENDAPATKAN AIR MINUM DENGAN PENAMBAHAN SARI BUAH BELIMBING WULUH (*Averrhoa bilimbi*)**

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**INTISARI**

Penelitian ini bertujuan untuk mengkaji manfaat penambahan *green additive* (GA) berupa sari buah belimbing wuluh (*Averrhoa bilimbi*) dalam air minum terhadap kesehatan saluran pencernaan ayam broiler. Penelitian ini dilakukan menggunakan 90 ekor ayam broiler *day old chicks* yang dipelihara pada kandang sistem terbuka selama 35 hari. Pengujian dilakukan secara *in vivo* yang terdiri dari 3 perlakuan dengan 5 kali replikasi, dan 6 ekor ayam pada setiap kandang replikasi. Perlakuan terdiri dari: air minum tanpa penambahan aditif (kontrol negatif; GA1), air minum dengan penambahan 100 ppm antibiotik tetrasiklin (kontrol positif; GA2), dan air minum dengan penambahan 0,45% sari buah belimbing wuluh (SBBW; GA3). Parameter data kesehatan saluran pencernaan yang diamati adalah tingkat keasaman digesta, histomorfologi jejunum, dan profil organ pencernaan ayam broiler. Seluruh data yang diperoleh dari penelitian dianalisis menggunakan analisis variansi berdasarkan rancangan acak lengkap pada taraf signifikansi  $P < 0,05$ . Data dengan perbedaan yang nyata diuji lanjut menggunakan Duncan's new multiple range test. Hasil penelitian menunjukkan bahwa penambahan 0,45% SBBW tidak mempengaruhi tingkat keasaman ileum, namun meningkatkan keasaman digesta duodenum dan jejunum ( $P < 0,05$ ), serta meningkatkan tinggi vili, kedalaman kript, dan rasio tinggi vili:kedalaman kript jejunum ( $P < 0,05$ ). Penambahan 0,45% SBBW meningkatkan berat proventrikulus, ventrikulus dan sekum ( $P < 0,05$ ), meningkatkan bobot relatif sekum ( $P < 0,05$ ). dan panjang duodenum, jejunum, dan ileum ( $P < 0,05$ ). Dapat disimpulkan bahwa penambahan sari buah belimbing wuluh meningkatkan kesehatan saluran pencernaan ayam broiler.

Kata kunci: Asam organik, *Green additive*, Histomorfologi usus, Profil organ dalam, Tingkat keasaman digesta

**GUT HEALTH PROFILE OF BROILER CHICKENS RECEIVING  
DRINKING WATER WITH ADDITION OF BILIMBI  
(*Averrhoa bilimbi*) FRUIT JUICE**

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**ABSTRACT**

This study was aimed to examine the benefits of supplementing green additive (GA) bilimbi (*Averrhoa bilimbi*) fruit juice in drinking water on the health of digestive tract of broiler chickens. The research was carried out using 90 day old broiler chickens which were kept in opened system cages for 35 days. Our *in vivo* study comprising 3 treatments with 5 replications, with 6 chickens in each replicate cage. The treatments used consisted of: drinking water without additive supplementation (negative control; GA1), drinking water with addition 100 ppm tetracycline antibiotic (positive control; GA2), drinking water with addition 0.45% bilimbi fruit juice (SBBW; GA3). The data observed were acidity level of the digestive tract digesta, histomorphology of the jejunal cell wall, and the profile of digestive organs of broiler chickens. All data obtained were analyzed statistically using analysis of variance based on a completely randomized design at the significance level of  $P < 0.05$ . Data with significant different were further tested with Duncan's new multiple range test. Results indicated that in 0,45% SBBW supplementation not influenced the acidity level of ileum, but increased the acidity level of duodenal and jejunal digesta ( $P < 0.05$ ), and increased villus height (VH), crypt depth (CD), and VH:CD ratio of the jejunal cell wall ( $P < 0.05$ ). 0,45% SBBW supplementation increased of the weight proventriculus, ventriculus, and secum ( $P < 0.05$ ), relative weight secum ( $P < 0,05$ ), and length of duodenal, jejunal, and ileum digestive tract ( $P < 0,05$ ). It might be concluded that bilimbi fruit juice supplementation improved the health states of digestive tract of broiler chickens.

Key words: Digesta acidity level, Green additive, Intestinal histomorfologi, Organic acid, Profile of internal organs