

## **PENGARUH SUPLEMENTASI PROBIOTIK BAKTERI ASAM LAKTAT TERHADAP JUMLAH BAKTERI ASAM LAKTAT YANG BERADERENSI DAN HISTOMORFOLOGI USUS AYAM BROILER**

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### **INTISARI**

Penelitian bertujuan untuk mengetahui pengaruh suplementasi tiga strain probiotik bakteri asam laktat terhadap jumlah bakteri asam laktat yang beraderensi dan profil histomorfologi usus ayam broiler. Seratus dua puluh ekor *day old chicks* jantan Strain New Lohmann secara acak dibagi menjadi empat kelompok perlakuan selama 38 hari masa pemeliharaan. Semua kelompok perlakuan diberikan pakan basal yang terdiri dari perlakuan kontrol (P0), dan secara berurutan T1, T2, dan T3 disuplementasi probiotik bakteri asam laktat  $10^7$ ,  $10^8$ , dan  $10^9$  CFU/ml/ekor/hari melalui mulut. Probiotik bakteri asam laktat yang digunakan terdiri dari strain campuran, yaitu: *Lactobacillus murinus*, *Streptococcus thermophilus*, dan *Pediococcus acidilactici*. Data yang diperoleh dalam penelitian ini dianalisis statistik menggunakan Analisis Variansi Rancangan Acak Lengkap pola searah dilanjutkan uji Duncan's new Multiple Range Test. Hasil penelitian menunjukkan bahwa suplementasi probiotik bakteri asam laktat dengan level  $10^8$  dan  $10^9$  CFU/ml/ekor/hari meningkatkan jumlah bakteri asam laktat yang beraderensi di sel epitel ileum ayam broiler ( $P < 0,05$ ). Suplementasi probiotik bakteri asam laktat sebanyak  $10^9$  CFU/ml/ekor/hari meningkatkan tinggi vili, lebar vili, kedalaman kriptas, dan jumlah nodul sel goblet ( $P < 0,05$ ). Dapat disimpulkan bahwa suplementasi multi-strain probiotik bakteri asam laktat melalui mulut menstimulasi aderensi bakteri asam laktat serta bermanfaat meningkatkan proliferasi sel-sel absorptif pada dinding usus ayam broiler.

Kata kunci: Ayam broiler, Aderensi bakteri asam laktat, Histomorfologi usus, Probiotik bakteri asam laktat

## **THE EFFECTS OF SUPPLEMENTATION OF PROBIOTICS LACTIC ACID BACTERIA ON ENUMERATIC MUCOSAL ADHERENCE OF LACTIC ACID BACTERIA AND INTESTINAL HISTOMORPHOLOGY OF BROILER CHICKEN**

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### **ABSTRACT**

Objective of this study was to explore the effects of oral supplementation of three strain probiotics lactic acid bacteria on enumeratic mucosal adherence of lactic acid bacteria and intestinal histomorphology of broiler chicken. A total number of 120 day old male New Lohmann broiler chickens were randomly assigned into four experimental treatments for 38 days rearing period. All experimental treatments were given corn-soybean basal diets, as follows: basal diet (T0; control), were orally supplemented with  $10^7$  (T1),  $10^8$  (T2), and  $10^9$  (T3) CFU/ml/bird/day multi-strain probiotics, respectively. The probiotics were consisted of *Lactobacillus murinus*, *Streptococcus thermophilus*, and *Pediococcus acidilactici*. The data were subjected to One-way analysis of variance and followed by Duncan's new Multiple Range Test. The results showed that oral supplementation of probiotics lactic acid bacteria at  $10^8$  dan  $10^9$  CFU/ml/bird/day increased the number of lactic acid bacteria that adhered on the ileal cell wall epithelium ( $P < 0.05$ ). Supplementation at the dose of  $10^9$  CFU/ml/bird/day stimulated villus height and width, crypt depth, and goblet cells density ( $P < 0.05$ ). It can be concluded that oral supplementation of multi-strain probiotics lactic acid bacteria might has beneficial effects on stimulating the adherence of lactic acid bacteria as well as accelerating the proliferation of absorptive cells in the intestinal wall of broiler chickens.

**Keywords:** Broiler chickens, Adherence of lactic acid bacteria, Intestinal histomorphology, Probiotics lactic acid bacteria