

## **PENGARUH PEMBERIAN BAKTERI ASAM LAKTAT SEBAGAI PROBIOTIK TERHADAP KINERJA ANAK DOMBA EKOR TIPIS PRASAPIH**

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### **INTISARI**

Penelitian ini bertujuan untuk mengetahui pengaruh pemberian bakteri asam laktat (BAL) sebagai probiotik terhadap kinerja anak domba dengan parameter kenaikan berat badan anak domba prasapih. Penelitian menggunakan isolat BAL FDY 31, FDY43, FC 9, dan *L. Plantarum* yang merupakan bakteri koleksi Laboratorium Biokimia Nutrisi Fapet UGM. Penelitian menggunakan 9 ekor anak domba prasapih umur 2 – 9 minggu. Isolat BAL calon probiotik diuji ketahanan terhadap pH rendah (pH 2; 2,5; dan 3), uji ketahanan terhadap konsentrasi garam empedu (3; 4; dan 5%), dan uji aktivitas penghambat terhadap pertumbuhan *E. coli* dan *S. aureus*. Hasil uji kandidat probiotik dianalisis menggunakan Rancangan Acak Lengkap Pola Faktorial dan dilanjutkan dengan uji DMRT. Hasil uji kemampuan kandidat probiotik menunjukkan perbedaan yang nyata ( $P < 0,05$ ) terhadap ketahanan pH rendah dan penghambatan bakteri patogen. Parameter yang diambil yaitu pertambahan bobot badan harian (PBBH), jumlah BAL dan bakteri *E. coli* dalam saluran pencernaan. Parameter dianalisis menggunakan Independent Sample T-Test. PBBH anak domba prasapih dengan perlakuan probiotik yaitu  $56,96 \pm 28,74$  g/ekor/hari, sedangkan tanpa pemberian  $33,41 \pm 19,97$  g/ekor/hari. Jumlah koloni BAL saluran pencernaan  $9,25 \pm 6,85 \times 10^2$  CFU/g (probiotik) dan  $4,00 \pm 2,64 \times 10^2$  CFU/g (tanpa probiotik). Jumlah bakteri *Escherichia coli*  $29,25 \pm 7,04 \times 10^2$  CFU/g (probiotik) dan  $32,67 \pm 7,02 \times 10^2$  CFU/g (tanpa probiotik). Hasil analisis menunjukkan pemberian probiotik tidak berpengaruh nyata ( $P > 0,05$ ) terhadap PBBH anak domba prasapih, jumlah BAL dan jumlah bakteri patogen dalam saluran pencernaan. Berdasarkan hasil penelitian dapat disimpulkan bahwa isolat BAL berpotensi sebagai probiotik, namun belum berpengaruh nyata terhadap PBBH anak domba ekor tipis prasapih.

Kata kunci: Bakteri asam laktat, Probiotik, *Feed additif*, Pertambahan berat badan harian, Domba ekor tipis

## THE EFFECT OF LACTIC ACID BACTERIA AS PROBIOTICS ON PRE-WEANING THIN TAILED LAMB PERFORMANCE

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### ABSTRACT

This study was aimed to determine the effect of lactic acid bacteria (LAB) as probiotics on weight gain of pre-weaning lamb. This study used FDY31, FDY43, FC9, and *L. plantarum* as LAB isolates. This study used 9 pre-weaning lamb with age of 2-9 weeks. Probiotic candidates were tested on the resistance to low pH (pH 2; 2.5; and 3), the resistance test against bile salt concentration (3; 4; and 5%), and inhibitory activity test against *E. coli* and *S. aureus*. The probiotic candidates test results were analyzed using Factorial Completely Randomized Design and continued with DMRT. The analysis results of candidate probiotic test showed significantly different ( $P < 0.05$ ) resistance to low pH and inhibition ability to pathogenic bacteria. The parameters were average daily gain (ADG), amount of LAB and pathogenic bacteria in the digestive tract. Parameters analyzed using Independent Sample T-Test. The ADG of pre-weaning lambs treated with probiotics is  $56,96 \pm 28,74$  g/head/day, and without probiotics  $33,41 \pm 19,97$  g/head/day. The colonies forming unit (CFU) of LAB in digestive tract are  $9.25 \pm 6.85 \times 10^2$  CFU/g (with probiotics) and  $4.00 \pm 2.64 \times 10^2$  CFU/g (without probiotics). The number of *Escherichia coli* are  $29.25 \pm 7.04 \times 10^2$  CFU/g (probiotics) and  $32.67 \pm 7.02 \times 10^2$  CFU/g (without probiotics). The analysis showed that treatment were not significantly different ( $P > 0.05$ ) on the ADG of pre-weaning lamb, the amount of LAB and the amount of pathogenic bacteria in the digestive tract. It was concluded that isolates of LAB have potential as probiotics, but has not significantly affected the ADG of pre-weaning thin tail lamb.

Key Words: Lactic acid bacteria, Probiotics, *Feed additif*, Average daily weight gain, Thin tail sheep