KEMAMPUAN ISOLAT BAKTERI ASAM LAKTAT DARI KOLOSTRUM KAMBING SAANEN TERHADAP BERBAGAI MACAM ANTIBIOTIK DENGAN DIFUSI SUMURAN

ABSTRAK

Syafira Fitria Putri. 222410005. Kemampuan Isolat Bakteri Asam Laktat dari Kolostrum Kambing Saanen terhadap Berbagai Macam Antibiotik dengan Difusi Sumuran. Program Studi Peternakan Fakultas Pertanian Universitas Muhammadiyah Purworejo. 2026. Pembimbing Dr. Roisu Eny Mudawaroch, S.Pt., M.P. dan Rinawidiastuti, S.Pt., M.Si.

Isolat bakteri asam laktat (BAL) sebagai kultur starter dalam industri pangan jika dikonsumsi bersamaan dengan antibiotik dapat menurunkan viabilitas BAL. Penelitian ini bertujuan untuk mengkaji kemampuan isolat BAL dari kolostrum kambing Saanen terhadap berbagai macam antibiotik dan pemilihan isolat sebagai kultur starter. Metode yang digunakan adalah difusi sumuran terhadap 9 isolat BAL (KS-D, KS-F, KS-H, KS-J, KS-N, KS-S, KS-T, KS-U, KS-W) dengan 4 antibiotik (*amoxicillin, cefadroxil, cefixime*, dan *ciprofloxacin*). Hasil menunjukkan *cefadroxil* memiliki aktivitas tertinggi (29,1 ± 1,2 mm, 100% sensitif), diikuti *ciprofloxacin* (23,6 ± 2,5 mm), *amoxicillin* (19,9 ± 1,7 mm), dan *cefixime* (16,6 ± 1,4 mm). Isolat KS-T menunjukkan resistensi tertinggi terhadap 3 antibiotik (*amoxicillin* 8,8 mm, *cefixime* 8,5 mm*, ciprofloxacin* 1 mm) tetapi sensitif terhadap *cefadroxil* (24,3 mm). Isolat KS-T direkomendasikan sebagai kandidat utama kultur starter untuk pemberian bersama terapi antibiotik. Isolat KS-D dan KS-J menunjukkan profil resistensi moderat yang dapat dijadikan kandidat alternatif, sementara mayoritas isolat menunjukkan sensitivitas terhadap antibiotik. Simpulan dari penelitian ini adalah Isolat KS-T merupakan kandidat utama kultur starter dengan resistensi tertinggi terhadap 3 antibiotik (*amoxicillin, cefixime, ciprofloxacin*) tetapi sensitif terhadap *cefadroxil*.

Kata kunci: bakteri asam laktat, kolostrum, resistensi, antibiotik, difusi sumuran, kultur starter

THE ABILITY OF LACTIC ACID BACTERIA ISOLATES FROM SAANEN GOAT COLOSTRUM AGAINST VARIOUS ANTIBIOTICS USING WELL DIFFUSION METHOD

ABSTRACT

Syafira Fitria Putri. 222410005. The Ability of Lactic Acid Bacteria Isolates From Saanen Goat Colostrum Against Various Antibiotics Using Well Diffusion Method. Animal Science Study Program, Faculty of Agriculture, Universitas Muhammadiyah Purworejo. 2026. Supervisors Dr. Roisu Eny Mudawaroch, S.Pt., M.P. and Rinawidiastuti, S.Pt., M.Si.

Lactic acid bacteria (LAB) isolates as starter cultures in the food industry when consumed concurrently with antibiotics can reduce LAB viability. This study aimed to examine the ability of LAB isolates from Saanen goat colostrum against various antibiotics and the selection of isolates as starter cultures. The method used was well diffusion against 9 LAB isolates (KS-D, KS-F, KS-H, KS-J, KS-N, KS-S, KS-T, KS-U, KS-W) with 4 antibiotics (*amoxicillin*, *cefadroxil, cefixime*, and *ciprofloxacin*). The results showed that *cefadroxil* exhibited the highest activity (29.1 ± 1.2 mm, 100% sensitive), followed by *ciprofloxacin* (23.6 ± 2.5 mm), *amoxicillin* (19.9 ± 1.7 mm), and *cefixime* (16.6 ± 1.4 mm). Isolate KS-T demonstrated the highest resistance against 3 antibiotics (*amoxicillin* 8.8 mm, cefixime 8.5 mm, ciprofloxacin 1 mm) but sensitive to *cefadroxil* (24.3 mm). Isolate KS-T is recommended as the primary candidate for starter culture with antibiotic therapy co-administration. Isolates KS-D and KS-J showed moderate resistance profiles that can be used as alternative candidates, while the majority of isolates showed sensitivity to antibiotics. The conclusion of this study is that isolate KS-T is the primary candidate for starter culture with the highest resistance to three antibiotics (*amoxicillin, cefixime, ciprofloxacin*) but sensitive to *cefadroxil*.

Keywords: lactic acid bacteria, colostrum, antibiotic, resistance, well diffusion, starter culture