

**EVALUASI POTENSI PROBIOTIK SUSU FORTIFIKASI
DADIH BUBUK TERHADAP KONDISI USUS DAN
PERTUMBUHAN TIKUS HAMIL**

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UNIVERSITAS ANDALAS
PADANG
2026**

EVALUASI POTENSI PROBIOTIK SUSU FORTIFIKASI DADIH BUBUK TERHADAP KONDISI USUS DAN PERTUMBUHAN TIKUS HAMIL

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ABSTRAK

Kesehatan ibu hamil sangat dipengaruhi oleh keseimbangan mikrobiota usus yang berperan penting dalam pencernaan, metabolisme, dan sistem imun. Penelitian ini bertujuan mengevaluasi potensi probiotik dalam susu fortifikasi dadih bubuk terhadap kolonisasi bakteri asam laktat (BAL), morfologi usus, dan pertumbuhan tikus hamil. Dadih segar difermentasi dan dikeringkan menggunakan *freeze drying*, kemudian difortifikasi dengan susu skim. Analisis meliputi karakteristik fisikokimia, viabilitas probiotik, aktivitas antibakteri dan antioksidan, serta uji *in vivo* pada 15 tikus hamil yang dibagi dalam 3 kelompok: kontrol negatif, dosis A (1,8 mL/200gBB), dan dosis B (3,6 mL/200gBB). Hasil menunjukkan susu fortifikasi memiliki kandungan protein tinggi (20,47%), total BAL $4,7 \times 10^9$ CFU/g, ketahanan terhadap pH 2,5 (69,72%) dan garam empedu (68,14%), serta aktivitas antibakteri sangat kuat terhadap *Staphylococcus aureus* dan *Escherichia coli*. Pemberian probiotik meningkatkan berat badan induk secara signifikan, dengan nilai FCE dan PER tertinggi pada dosis B (46,22% dan 2,00). Kolonisasi BAL pada jejunum meningkat dari $6,89 \log_{10}$ CFU/g (kontrol) menjadi $9,25 \log_{10}$ CFU/g (dosis B). Analisis histologi menunjukkan dosis B menghasilkan ketebalan mukosa tertinggi (243,84 μm) dan kedalaman kript terdalam (151,35 μm). Penelitian ini membuktikan susu fortifikasi dadih bubuk berpotensi sebagai pangan fungsional untuk mendukung kesehatan maternal dan pencegahan stunting.

Kata Kunci: probiotik, dadih bubuk, bakteri asam laktat, kesehatan maternal, morfologi usus

EVALUATION OF THE PROBIOTIC POTENTIAL OF FORTIFIED DADIH POWDER MILK ON INTERSTINAL CONDITION AND GROWTH OF PREGNANT RATS

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ABSTRACT

Maternal health during pregnancy is significantly influenced by gut microbiota balance, which plays crucial roles in digestion, metabolism, and immune system function. This study aimed to evaluate the probiotic potential of fortified milk with powdered dadih on lactic acid bacteria (LAB) colonization, intestinal morphology, and growth of pregnant rats. Fresh dadih was fermented and freeze dried, then fortified with skim milk. Analysis included physicochemical characteristics, probiotic viability, antibacterial and antioxidant activities, and in vivo testing on 15 pregnant rats divided into 3 groups: negative control, dose A (1.8 mL/200gBW), and dose B (3.6 mL/200gBW). Results showed the fortified milk contained high protein (20.47%), total LAB of 4.7×10^9 CFU/g, resistance to pH 2.5 (69.72%) and bile salts (68.14%), and very strong antibacterial activity against Staphylococcus aureus and Escherichia coli. Probiotic supplementation significantly increased maternal weight gain, with highest FCE and PER values in dose B (46.22% and 2.00). LAB colonization in jejunum increased from 6.89 log₁₀ CFU/g (control) to 9.25 log₁₀ CFU/g (dose B). Histological analysis revealed dose B produced the highest mucosal thickness (243.84 µm) and deepest crypt depth (151.35 µm). This study demonstrates that fortified milk with powdered dadih has potential as functional food to support maternal health and stunting prevention.

Keywords: probiotics, powdered dadih, lactic acid bacteria, maternal health, intestinal morphology