

Isolasi, Karakterisasi, dan Identifikasi Bakteri Asam Laktat (BAL) dari Fermentasi Ubi Jalar (*Ipomea batatas* (L.) Lam.) Ungu dan Kuning yang Berpotensi sebagai Probiotik

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INTISARI

Bakteri asam laktat (BAL) yang berpotensi sebagai probiotik memiliki kemampuan dapat melalui saluran pencernaan, tahan terhadap asam lambung dan garam empedu, serta menghasilkan asam laktat dan komponen antimikrobia yang mampu menghambat bakteri pembusuk dan bakteri patogen. Penelitian ini bertujuan untuk isolasi, karakterisasi, dan identifikasi BAL dari fermentasi ubi jalar ungu dan kuning. BAL diisolasi dari fermentasi ubi jalar ungu dan kuning menggunakan medium MRSA + 1% CaCO_3 . Isolat diduga BAL dikarakterisasi dengan karakteristik morfologi sel dan biokimiawi. Seluruh isolat BAL diseleksi ketahanan pada pH 2-8 dan garam empedu 1-5% selama 144 jam inkubasi serta kemampuan penghambatan isolat BAL terhadap bakteri patogen *Escherichia coli* dan *Staphylococcus aureus*. Hasil penelitian menunjukkan sepuluh isolat BAL berhasil diisolasi dengan karakteristik gram positif, nonspora, katalase negatif, dan nonmotil yang merupakan anggota genus *Lactobacillus*. Isolat BAL AGU2, PGU2, dan PGU3 memiliki ketahanan terhadap pH 2-8 dan seluruh isolat BAL memiliki ketahanan terhadap garam empedu 1-5% selama 144 jam inkubasi. Tiga isolat BAL AGU2, PGU2, dan PGU3 memiliki kemampuan penghambatan terhadap bakteri patogen *Escherichia coli* dengan luas zona jernih 2.2 mm; 2.8 mm dan 2.1 mm dan penghambatan terhadap bakteri patogen *Staphylococcus aureus* dengan zona jernih 2.1 mm; 2.6 mm dan 2.0 mm. Dengan demikian dapat disimpulkan bahwa isolat BAL AGU2, PGU2, dan PGU3 memiliki potensi sebagai probiotik.

Kata kunci: bakteri asam laktat, probiotik, ubi jalar, *Escherichia coli*, *Staphylococcus aureus*

**Isolation, Characterization, and Identification of Lactic Acid Bacteria (LAB) from
Fermentation Sweet Potato (*Ipomea batatas* (L.) Lam.) Purple and Yellow of
Potential as Probiotic**

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ABSTRACT

Lactic Acid Bacteria (LAB) potential as probiotics have the ability to be through the digestive tract, are resistant to gastric juice and bile salts, and produces lactic acid and antimicrobial components are capable of inhibiting bacterial spoilage and pathogenic bacteria. The aim of this research was to isolation, characterization, and identification of LAB from fermentation of purple and yellow sweet potato. LAB isolated from fermentated sweet potato using MRSA+1% CaCO_3 medium. Isolates of supposed LAB characterized by cell morphology and biochemical characteristics. All LAB candidate isolates were selected resistance at pH 2-8 and 1-5% bile salt for 144 hours of incubation as well as inhibiting the ability of LAB isolates against bacterial pathogens *Escherichia coli* and *Staphylococcus aureus* bacteria. The results showed ten isolates of LAB were isolated by characteristics of gram positive, nonspora, catalase negative, and nonmotile which are members of the genus *Lactobacillus*. LAB Isolates AGU2, PGU2, and PGU3 resistant to pH 2-8 and LAB isolates had resistance to bile salts 1-5% for 144 hours of incubation. Three isolates LAB AGU2, PGU2, and PGU3 have inhibitory ability against pathogenic bacteria *Escherichia coli* with an area of clear zone of 2.2 mm; 2.8 mm and 2.1 mm and the inhibition of pathogenic bacteria *Staphylococcus aureus* with a clear zone of 2.1 mm; 2.6 mm and 2.0 mm. It could be concluded the LAB isolates AGU2, PGU2, and PGU3 were potential as probiotic.

Keywords: lactic acid bacteria, probiotic, sweet potato, *Escherichia coli*, *Staphylococcus aureus*