

**PENGARUH PENAMBAHAN SUKROSA PADA FERMENTASI SARI
KORO PEDANG PUTIH (*Canavalia ensiformis* L.) TERHADAP
PERTUMBUHAN BAKTERI ASAM LAKTAT DAN PRODUKSI ASAM
LAKTAT**

ABSTRAK

Oleh :

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Tujuan dari penelitian ini ialah mengetahui kemampuan pertumbuhan dan metabolisme *L. plantarum* WGK4, *L. paracasei* WGK 5, *S. thermophilus* Dad 11, dan *L. plantarum* Dad 13 dalam fermentasi sari koro pedang putih pada suhu 37°C selama 24 jam, mempelajari pengaruh penambahan sukrosa terhadap pertumbuhan sel, produksi asam laktat selama fermentasi, dan karakteristik sensoris selama penyimpanan 24 jam pada suhu 4°C. Koro pedang putih diproses menjadi sari koro pedang putih melalui ekstraksi pada rasio koro pedang putih kupas dan air 1:3 (b/v). Fermentasi dilakukan dengan menginokulasikan 1% (v/v) kultur starter *L. plantarum* WGK4, *L. paracasei* WGK 5, *S. thermophilus* Dad 11, dan *L. plantarum* Dad 13 ke dalam sari koro pedang putih dengan, maupun tanpa penambahan sukrosa (2%, 4%, 6%, 8%, 10%, (b/v)) kemudian diinkubasi pada suhu 37°C selama 24 jam, dan disimpan pada suhu 4°C selama 24 jam. Jumlah sel, pH, dan asam tertitrasi dalam sari koro pedang putih dianalisis pada awal dan akhir fermentasi. Karakter sensoris meliputi, aroma, tekstur, dan rasa diamati dan dinilai secara deskriptif oleh peneliti. Hasil penelitian ini menunjukkan bahwa *L. plantarum* WGK4, *L. paracasei* WGK 5, *S. thermophilus* Dad 11, dan *L. plantarum* Dad 13 tumbuh dengan baik dalam sari koro pedang putih tanpa penambahan sukrosa, namun dengan penambahan sukrosa 2% – 10% (b/v) dapat meningkatkan pertumbuhan sel, dan produksi asam selama fermentasi. Secara keseluruhan, sari koro pedang putih yang telah terfermentasi akan membentuk endapan sehingga memiliki tekstur yang kental, aroma asam laktat yang menutupi aroma langu khas koro pedang putih yang kurang disukai, dan adanya rasa asam dan manis yang dapat menutupi rasa langu.

Kata kunci : Fermentasi sari koro pedang putih, bakteri asam laktat, sukrosa.

EFFECT OF SUCROSE ADDITION ON THE FERMENTATION OF JACK BEAN MILK (*Canavalia ensiformis* L.) TO THE GROWTH OF LACTIC ACID BACTERIA AND ACID PRODUCTION

ABSTRACT

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The objectives of this research were to study the ability of *L. plantarum* WGK4, *L. paracasei* WGK 5, *S. thermophilus* Dad 11, and *L. plantarum* Dad 13 to grow in the jack bean milk, the effect of sucrose addition on growth of *L. plantarum* WGK4, *L. paracasei* WGK 5, *S. thermophilus* Dad 11, and *L. plantarum* Dad 13, and acid production during fermentation at 37°C for 24 hours, and to investigate the sensory characteristic of fermented jack bean milk during storage at 4°C for 24 hours. Jack bean seeds was extracted by ratio dehulled jack bean and water 1 : 3 (w/v). Fermentation was done by inoculation of 1% (v/v) *L. plantarum* WGK4, *L. paracasei* WGK 5, *S. thermophilus* Dad 11, and *L. plantarum* Dad 13 starter culture to jack bean milk with and without addition of sucrose (2%, 4%, 6%, 8% 10% (w/v)), then incubation at 37°C for 24 hours. Fermented jack bean milk was stored at 4°C for 24 hours. The viable cell count, pH value and titratable acidity were determined at the initial and the end of fermentation. Sensory characteristic, such as color, scents, textures, and flavors also were observed and assessed descriptively by the researcher. The results showed that *L. plantarum* WGK4, *L. paracasei* WGK 5, *S. thermophilus* Dad 11, and *L. plantarum* Dad 13 grew well in the jack bean milk but with addition of sucrose 2% - 10% (b/v) can increase cell growth, and produce acid during fermentation. Overall, the fermented jack bean milk will form curds, a thick texture, had acid and flavour, that would mask the unpleasant jack bean flavour.

Keywords : Jack bean milk fermentation, lactic acid bacteria, sucrose.