PENGARUH KONSENTRASI SUSU SKIM TERHADAP KEASAMAN SELAMA FERMENTASI SARI KEDELAI HITAM (*Glycine max* (L) Merrit) OLEH BAKTERI ASAM LAKTAT

ABSTRAK

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Penelitian ini bertujuan untuk mengetahui pengaruh penambahan susu skim terhadap pola produksi asam, penurunan pH, dan karakteristik fisik dan sensoris selama fermentasi sari kedelai hitam oleh bakteri asam laktat (*S. thermophilus* Dad 11, *L. plantarum* Dad 13, dan *L. plantarum* WGK 4). Kedelai hitam diekstraksi menjadi sari kedelai hitam dengan rasio kedelai hitam basah : air (b/v) yaitu 1:2. Fermentasi dilakukan dengan menginokulasikan 1% (v/v) kultur starter ke dalam sari kedelai hitam dengan penambahan susu skim (2%, 4%, 6%, dan 8% (b/v)) dan tanpa penambahan susu skim. Fermentasi dilakukan selama 24 jam pada suhu 37°C. Analisis asam tertitrasi dan pH dilakukan setiap 3 jam. Aroma dan kenampakan diamati secara deskriptif oleh peneliti. Pada perlakuan tanpa penambahan susu skim, produksi asam meningkat signifikan pada jam ke-9 kemudian relatif tetap pada jam ke-15 hingga akhir fermentasi. Penurunan pH terjadi signifikan hingga jam ke-9, selanjutnya relatif tetap. Pada perlakuan penambahan susu skim, produksi asam meningkat signifikan pada jam ke-12 hingga akhir fermentasi. Penurunan pH terjadi signifikan hingga jam ke-9, kemudian relatif tetap hingga akhir fermentasi. Produksi asam pada kisaran 1,01%-2,09% dan pH 3,96-4,67 di akhir fermentasi. Produk yang dihasilkan memiliki aroma asam yang kuat dan curd yang padat. Dari produksi asam dan pH perkiraan waktu fermentasi sari kedelai adalah 12-15 jam.

Kata kunci: Fermentasi sari kedelai hitam, bakteri asam laktat, susu skim.

EFFECT OF SKIM MILK ADDITION ON THE ACIDITY DURING FERMENTATION OF BLACK SOYBEAN (*Glycine max* (L) Merrit) MILK USING LACTIC ACID BACTERIA

ABSTRACT

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The aims of this study were to determine the effect of skim milk addition on acid production, pH reduction, and physical and sensory characteristics during the fermentation of black soybean milk by *S. thermophilus* Dad 11, *L. plantarum* Dad 13, dan *L. plantarum* WGK 4. Black soybean were proceed with extraction and used the ratio between wet black soybean : water 1:2 (w/v). Fermentation was done with 1 % (v/v) of each starter culture to black soybean milk with skim milk addition (2%, 4%, 6%, and 8% (w/v)) and without skim milk addition (0%). Then they were incubated at 37°C for 24 hours. Analysis of the titratable acidity and pH value were carried out every 3 hours. Its flavor and appearance were observed descriptively by the researcher. At the treatment without the addition of skim milk, acid production increased significantly at the during the first 9 h fermentation and then remained relatively constant in the 15th hour until the end of the fermentation. The decrease in pH occurred significantly up to the 9 h fermentation, subsequently relatively fixed. In the fermentation with addition of skim milk, acid production increased significantly during the 12th hour to the end of fermentation. The decrease in pH occured significantly up to the 9th hour, then relatively fixed until the end of fermentation. Fermentation with and without skim milk addition produced 1,01%-2,09% of lactic acid and pH 3,96-4,67. The addition of skim milk produced a sour-flavored fermented product and compact curd. The approximate time of black soybean milk fermentation was 12-15 hours.

Keywords: black soybean milk fermentation, lactic acid bacteria, skim milk.