

**MINUMAN FERMENTASI SARI BUAH SALAK (*Salacca zalacca*)  
DENGAN *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13**

## INTISARI

Buah salak mengandung monosakarida, terutama glukosa dan fruktosa, yang merupakan substrat penting untuk faktor pertumbuhan bakteri probiotik. Penelitian ini bertujuan untuk mengembangkan minuman fermentasi sari buah salak dengan menggunakan probiotik lokal *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13. Berdasarkan penelitian ini, waktu fermentasi terbaik adalah 24 jam, dengan jumlah sel probiotik  $2,7 \times 10^8$ , pH 3,77, dan total asam 0,33%. Komposisi glukosa dan fruktosa dalam minuman fermentasi sari buah salak mengalami penurunan selama fermentasi. Formulasi dengan penambahan variasi sukrosa (0%, 3%, dan 6%) menunjukkan hasil yang tidak signifikan terhadap jumlah sel probiotik, pH, dan total asam. Hasil uji sensoris metode hedonik menunjukkan bahwa sampel dengan kadar sukrosa 6% paling diminati oleh panelis, sehingga ditetapkan sebagai formulasi terbaik.

Selanjutnya sampel dengan formulasi terbaik disimpan pada suhu dingin (4°C) selama 30 hari; hasilnya menunjukkan bahwa jumlah sel probiotik stabil, sementara nilai pH menurun (3,68 menjadi 3,60) dan total asam meningkat (0,42% menjadi 0,56%). Hasil uji sensoris secara deskriptif menunjukkan hasil bahwa produk masih layak untuk dikonsumsi selama 30 hari penyimpanan dingin. Kandungan senyawa volatil minuman fermentasi sari buah salak didominasi oleh senyawa yang bertanggung jawab terhadap pembentukan flavor karakter salak, seperti metil 4-metil-2-pentanoat dan metil  $\beta$ -metil valerat dan beberapa senyawa volatil hasil fermentasi. Kesimpulannya, sari buah salak dapat menjadi media pembawa yang cocok untuk bakteri probiotik dan kualitas produk tetap terjaga setelah penyimpanan dingin selama 30 hari.

**Kata kunci :** Minuman, Buah salak, Probiotik, *Lactiplantibacillus plantarum* subsp. *plantarum*

**FERMENTED BEVERAGE FROM SNAKE FRUIT JUICE  
(*Salacca zalacca*) WITH *Lactiplantibacillus plantarum* subsp. *plantarum*  
Dad-13**

## **ABSTRACT**

Snake fruit contains monosaccharides, mainly fructose and glucose, which are essential substrates for growth factors in probiotic bacteria. This study aims to develop the Fermented Snake Fruit Juice (FSFJ) using the local probiotic *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13. Based on this study, the best result in terms of fermentation time was 24 hours, with a probiotic cell count of  $2.7 \times 10^8$ , pH 3.77, and total acidity of 0.33%. The glucose and fructose composition in FSFJ were decreased during fermentation. The addition of sucrose (0%, 3%, and 6%) showed that different sucrose concentrations were statistically insignificant to the probiotic cell count, pH, and total acidity. The hedonic test relayed that the sample with a 6% sucrose level was the most desirable by panellists, hence assigned as the best formulation.

Furthermore, the best formulation sample was kept at a cold temperature (4°C) for 30 days; the result depicts that the probiotic cell count did not present a significant difference, as the pH value was decreased (3.68 to 3.60) and the total acidity was increased (0.42% to 0.56%). Descriptive sensory test results show that the product was still suitable for consumption for 30 days of cold storage. The volatile compounds of FSFJ were still dominated by compounds responsible for snake fruit characters, such as methyl 4-methyl-2-pentanoate and methyl  $\beta$ -methyl valerate, in addition to some fermentation-related volatile compounds. In conclusion, snake fruit juice is a suitable carrier medium for probiotic bacteria and remains of sufficient quality after 30 days of cold storage.

**Keywords :** Beverages, Snake fruit, Probiotic, *Lactiplantibacillus plantarum* subsp. *plantarum*