

**Minuman Sari Buah Bligo-Nanas yang Disuplementasi Probiotik Lokal
Lactobacillus plantarum Dad13 Ditinjau dari Daya Terima dan Viabilitas Sel
Selama Penyimpanan**

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INTISARI

Latar belakang : Saat ini di Indonesia telah terjadi perubahan pola makan masyarakat yang memilih mengonsumsi makanan fungsional karena dipicu maraknya penyakit degeneratif dan infeksi. Kekayaan hayati Indonesia seperti buah bligo dan probiotik lokal *Lactobacillus plantarum* Dad13 berpotensi dikembangkan menjadi produk makanan fungsional. Produk dalam bentuk sari buah dinilai tepat untuk dikembangkan karena lebih menjangkau semua jenis konsumen. Produk minuman berbasis buah harus mempertimbangkan keseimbangan rasa asam sehingga perlu ditambahkan bahan seperti nanas. Penambahan nanas tersebut juga untuk memperbaiki kualitas sensori minuman sari buah karena bligo memiliki warna, rasa, aroma yang kurang menarik. Lingkungan dalam minuman sari buah bligo-nanas diharapkan dapat mendukung keberadaan bakteri probiotik. Selanjutnya produk minuman sari buah berprobiotik harus memperhatikan faktor masa simpan karena berhubungan dengan daya tahan hidup (viabilitas) probiotik dan daya terima konsumen.

Tujuan : mengetahui perbedaan viabilitas sel dan daya terima pada minuman sari buah bligo-nanas-*Lactobacillus plantarum* Dad13 dengan variasi penyimpanan.

Metode : Penelitian ini adalah penelitian eksperimental dengan rancangan acak sederhana yang terdiri dari 2 tahap penelitian yaitu penelitian pendahuluan dan penelitian lanjutan. Parameter yang diteliti adalah viabilitas sel bakteri dan daya terima melalui penilaian atribut warna, rasa, aroma, kekentalan dan keseluruhan terhadap minuman sari buah yang disimpan 1 hari, 14 hari, dan 28 hari. Data uji daya terima dianalisis dengan menggunakan uji Kruskal wallis dilanjutkan uji *post hoc* Mann Whitney.

Hasil : Semakin lama disimpan, minuman sari buah memiliki warna yang semakin memudar dan rasa serta aroma yang semakin asam, namun kekentalan tidak berubah. Tingkat penerimaan tertinggi untuk atribut warna, rasa, kekentalan, dan keseluruhan pada minuman sari buah yang disimpan selama 1 hari dan tingkat penerimaan terendah pada minuman yang disimpan selama 28 hari. Untuk atribut aroma, tingkat penerimaan tertinggi pada minuman sari buah yang disimpan selama 28 hari dan tingkat penerimaan terendah pada minuman yang disimpan selama 14 hari. Populasi probiotik mengalami peningkatan selama penyimpanan 1 hari, 14 hari, dan 28 hari meskipun tidak sampai 1 siklus log. Jumlahnya berturut-turut $1,31 \times 10^9$ CFU/ml, $2,85 \times 10^9$ CFU/ml, dan $3,5 \times 10^9$ CFU/ml.

Kesimpulan : Terdapat perbedaan yang nyata pada hasil uji daya terima terhadap atribut warna, rasa, kekentalan, dan keseluruhan pada 3 produk minuman sari buah yang disimpan selama 1 hari, 14 hari, dan 28 hari. Tidak terdapat perbedaan yang nyata pada hasil uji daya terima terhadap atribut aroma. Viabilitas sel probiotik cenderung stabil sebesar $\pm 10^9$ CFU/ml hingga 28 hari penyimpanan.

Kata kunci : Bligo, Nanas, *Lactobacillus plantarum* Dad13, Viabilitas sel, Daya terima, Masa simpan

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***Bligo-Pineapple Fruit Juice Supplemented with Local Probiotic
Lactobacillus Plantarum* Dad13 Viewed from the Acceptance and the Cell
Viability during Storage**

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ABSTRACT

Background: Nowadays in Indonesia there has been a change in the diet of people who prefer to consume functional foods because of the widespread degenerative and infectious diseases. Indonesian biological richness such as *Bligo* fruit and local probiotic *Lactobacillus plantarum* Dad13 can be potentially developed into functional food products. Products in the form of fruit juice is considered beneficial to be developed as it better-reaches a wide range of consumers. Fruit-based beverage products should consider the balance of sourness so that additional ingredients like pineapple needs to be added. The addition of pineapple is also to improve the sensory quality of the fruit juice because *Bligo* has less attractive color, flavor, and aroma. It is expected that the environment in *Bligo*-pineapple fruit juice can support the existence of probiotic bacteria. In addition, fruit juice products with probiotics must consider factors related to the storage period because it is closely related to the probiotics durability (viability) and consumer acceptance.

Objective: To identify the differences of cell viability and acceptance of *Bligo*-pineapple-*Lactobacillus plantarum* Dad13 fruit juice with a set of storage variations.

Methods: This study is an experimental study with a simple random design consisting of two stages of the research, i.e. preliminary research and advanced research. The parameters studied are bacterial cell viability and acceptance through the assessment of attributes of color, flavor, aroma, consistency and overall toward fruit juice which are stored for 1 day, 14 days, and 28 days. Acceptance test data were analyzed using the Kruskal-Wallis test followed by post hoc Mann Whitney test.

Results: The longer it was stored, fruit juice had a faded color and flavor and the aroma were more acidic, but the consistency did not change. The highest rate of acceptance for the attributes of color, flavor, consistency, and the overall fruit juice was when it was stored for 1 day and the lowest acceptance rate was when it was stored for 28 days. To the aroma attribute, the highest acceptance rate of fruit juice was when it was stored for 28 days and the lowest acceptance rate was when it was stored for 14 days. Probiotic population increased during storage for 1 day, 14 days, and 28 days although it did not reach 1 log cycle. The consecutive numbers were $1,31 \times 10^9$ CFU/ml, $2,85 \times 10^9$ CFU/ml, and $3,5 \times 10^9$ CFU/ml.

Conclusions: There are significant differences in the results of acceptance test in the attributes of color, flavor, consistency, and overall on the fruit juice products which are stored 1 day, 14 days, and 28 days. There is no significant difference in the results of acceptance test in the attribute of aroma. The viability of probiotic cells tends to be stable at the level of $\pm 10^9$ CFU/ml until 28 days of storage.

Keywords: *Bligo*, *Pineapple*, *Lactobacillus plantarum* Dad13, cell viability, acceptance, storage period

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