

**PENGARUH VARIASI UKURAN LUBANG
SARINGAN PENJERNIHAN NIRA TERHADAP
KUALITAS GULA MERAH TEBU**



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PENGARUH VARIASI UKURAN LUBANG SARINGAN PENJERNIHAN NIRA TERHADAP KUALITAS GULA MERAH TEBU

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ABSTRAK

Nira tebu mengandung komponen non-gula seperti partikel tersuspensi, koloid, protein, mineral, dan zat pewarna yang dapat memengaruhi kualitas gula merah, sehingga diperlukan proses penyaringan sebelum pengolahan lebih lanjut. Penelitian ini dilakukan untuk mengetahui pengaruh variasi ukuran lubang saringan penjernihan nira terhadap kualitas gula merah tebu dan analisis titik impasnya. Penelitian ini menggunakan metode Rancangan Acak Lengkap (RAL) dengan lima perlakuan ukuran lubang saringan mesh 40, mesh 80, mesh 150, mesh 300, dan mesh 600 masing-masing dengan tiga ulangan. Data dianalisis menggunakan ANOVA dan uji lanjut DNMRT pada taraf 5%. Hasil menunjukkan bahwa mesh 600 memberikan hasil terbaik berdasarkan lima parameter, yaitu nilai bagian tak larut air 0,82%, tingkat kekerasan 19,95 N, derajat putih 34,81%, kadar air 5,49%, dan kadar gula reduksi 5,44%. Semua parameter sesuai standar SNI. Produksi gula merah tebu diperoleh nilai BEP unit sebesar 254 kg/bulan dengan harga jual Rp 22.844 /kg.

Kata kunci: gula merah tebu; titik impas; ukuran lubang saringan

EFFECT OF FILTER PORE SIZE VARIATION IN SUGARCANE JUICE CLARIFICATION ON THE QUALITY OF CANE BROWN SUGAR

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ABSTRACT

Sugarcane juice contains non-sugar components such as suspended particles, colloids, proteins, minerals, and coloring substances that may affect the quality of brown sugar, therefore a filtration process is required before further processing. This study was conducted to determine the effect of pore size variation in sugarcane juice clarification on the quality of cane brown sugar and to analyze break-even point. The study employed a Completely Randomized Design (CRD) consisting of five filter pore size treatments: 40 mesh, 80 mesh, 150 mesh, 300 mesh, and 600 mesh, each with three replications. The data were analyzed using Analysis of Variance (ANOVA) followed by Duncan's New Multiple Range Test (DNMRT) at a 5% significance level. The results showed that the 600-mesh treatment produced the best results based on five parameters, namely water-insoluble matter content of 0.82%, hardness value of 19.95 N, whiteness degree of 34.81%, moisture content of 5.49%, and reducing sugar content of 5.44%. All parameters complied with the Indonesian National Standard (SNI). The break-even point (BEP) for cane brown sugar production was 254 kg/month, with a selling price of Rp 22,844/kg.

Keywords: cane brown sugar; break-even point; filter pore size