

## **ABSTRACT**

### **THE INFLUENCE OF STARTER CONCENTRATION AND SUGAR TYPE ON THE CHARACTERISTICS OF WATER KEFIR MELON MESOCARP**

**By**

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The study aimed to determine the effect of the concentration of water-kefir and sugar types on the characteristics of melon mesocarp water-kefir, and to analyze the cost of production. This research used a factorial Randomized Complete Block Design (RCBD) with 2 different treatments and 6 replications. The parameter included total soluble solids, total acid, total lactic acid bacteria, and organoleptic. The treatment factors used were starter concentration (5% and 1%) and sugar types (sucrose and xylitol). Data from the test results of total soluble solids, total acid, and total lactic acid bacteria were analyzed using Analysis of Variance (ANOVA) at a significance level of 5% and continued with Duncan's Multiple Range Test (DMRT) if a significant effect. Data from the organoleptic test results were analyzed using Kruskal-Wallis and continued with Mann-Whitney U Test if a significant effect. The results showed that the concentration of water-kefir starter significantly affected total soluble solids, total acid, and total lactic acid bacteria, while the type of sugar significantly affected total soluble solids and total acid. In addition, the results of the hedonic sensory test showed that different starter concentrations and sugar types significantly affected the sour taste, color, soda sensation, and overall taste. The most preferred melon mesocarp water-kefir by the panelists was obtained with 5% starter concentration and xylitol. The cost of production obtained is IDR 11.430,33.

**Keywords:** fermentation, melon mesocarp juice, sucrose, water kefir, xylitol.

## **ABSTRAK**

### **PENGARUH KONSENTRASI STARTER DAN JENIS GULA TERHADAP KARAKTERISTIK WATER KEFIR MESOKARP MELON**

**Oleh**

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Penelitian ini bertujuan untuk menentukan pengaruh konsentrasi starter water-kefir dan jenis gula terhadap karakteristik water-kefir mesokarp melon, serta analisis harga pokok produksi. Penelitian ini menggunakan Rancangan Acak Kelompok Lengkap (RAKL) faktorial dengan 2 perlakuan yang berbeda dan 6 ulangan. Parameter yang diukur meliputi total padatan terlarut, total asam, total bakteri asam laktat, dan organoleptik. Faktor perlakuan yang digunakan yaitu konsentrasi starter (5% dan 1%) dan jenis gula (sukrosa dan xilitol). Data hasil pengujian total padatan terlarut, total asam, dan total bakteri asam laktat dianalisis menggunakan Analysis of Variance (ANOVA) pada taraf signifikansi 5% dan dilanjutkan dengan Duncan's Multiple Range Test (DMRT) apabila berpengaruh nyata. Data hasil pengujian organoleptik dianalisis dengan Kruskal-Wallis dan dilanjutkan dengan Mann-Whitney U Test apabila berpengaruh nyata. Hasil penelitian menunjukkan bahwa konsentrasi starter water-kefir berpengaruh nyata terhadap total padatan terlarut, total asam, dan total bakteri asam laktat, sementara jenis gula berpengaruh nyata pada total padatan terlarut dan total asam. Selain itu, hasil uji sensoris metode hedonik menunjukkan bahwa konsentrasi starter dan jenis gula yang berbeda berpengaruh nyata terhadap rasa asam, warna, sensasi soda, dan keseluruhan. Water-kefir mesokarp melon yang paling disukai oleh panelis diperoleh dengan konsentrasi starter 5% dan xilitol. Harga pokok produksi yang diperoleh adalah Rp 11.430,33.

**Kata kunci:** fermentasi, sari mesokarp melon, sukrosa, xilitol, water kefir.