Pengaruh Konsentrasi Substrat dan Jenis Gula Terhadap BAL dan Karakteristik Minuman Fermentasi Kulit Buah Melon *(Cucumis melo L. Var Golden)*

Effect of Substrate Concentration and Sugar Type on LAB and Characteristic of Melon Peel Fermentation Drink (Cucumis melo L. Var Golden)

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ABSTRACT

Melon (Cucumis melo L.) is a commodity that has increasing production in Indonesia. The increase in production is in line with amount of melon peel as waste. Melon peel waste contains high sugar content, making it possible to be used as a substrate in fermented drinks. Substrate concentration and sugar type are the main sources of sugar that lactic acid bacteria synthesize into energy and metabolites. Total lactic acid bacteria are the main requirements for probiotic drink products. The treatment carried out in this study was a combination of substrate concentration with 5 levels, namely 20% (K1), 30% (K2), 40% (K3), 50% (K4), 60% (K5) and sugar types with 3 levels, namely white crystal sugar (G1), palm sugar (G2), coconut (G3). The results showed that substrate concentration had a significant effect (P<0.05) on total lactic acid bacteria. Sugar type did not have a significant effect (P>0.05) on total lactic acid bacteria. Sugar type only had a significant effect (P<0.05) on pH and color values. The best treatment was found at a substrate concentration of 30% white crystal sugar with a result of 4.78 x 10^9 CFU/mL. The best treatment had microbial activity with an MIC value of 50% and an MBC value of 100%. The total yeast in the best treatment was 2.345 x 10^5 CFU/mL with the yeast suspected to be Saccharomyces cerevisiae. The best treatment had physical characteristics in the form of a pH value of 3.77 and a color of L 71.499 a* -2.815 b* 16.976. The total dietary fiber contained was 21.05%. The best treatment beverage product had hedonic characteristics of appearance worth 4.49, aroma worth 3.5, and taste worth 3.69.*

Keywords: *melon peel, lactic acid bacteria, substrate concentration, sugar type, fermentation drink, probiotic*