EFFECTS OF CANE SUGAR CONCENTRATIONS AND FERMENTATION DURATIONS ON PHYSICOCHEMICAL PROPERTIES AND PERCENTAGE OF RECOVERY VOLUME OF RED DRAGON FRUIT (*Hylocereus polyrhizus*) ENZYMATIC DRINK

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2010

ABSTRACT

Enzymatic drink is gaining popularity due to its health benefits and unique flavour. In this study, enzymatic drink was produced by the natural fermentation of a nutritious fruit, red dragon fruit (*Hylocereus polyrhizus*). Effects of sugar concentration and fermentation duration on physicochemical properties (water activity, pH, total titratable acidity, total soluble solids content and alcohol content) and percentage of recovery volume of enzymatic drink were investigated in this study. Sugar concentration (15 %, 20 % and 25 %) and fermentation duration (1, 3, 5, 7, 14, 21, 28 and 35 days) exhibited significant effect ($p<0.05$) on the physicochemical properties (water activity, pH, total titratable acidity, soluble solids content and alcohol content) of sample as well as the percentage of recovery volume. Fermentation duration demonstrated positive correlation on total titratable acidity, alcohol content and the percentage of recovery volume of samples. However, water activity, pH and soluble solids content were inversely correlated with the fermentation duration. Sample with 20 % sugar and fermented for 21 days had the lowest pH among all the samples which is 3.19. On the other hands, sample with 15 % sugar and fermented for 28 days had the highest organic acid content (total titratable acidity) while sample with 20 % sugar and fermented for 35 days had highest alcohol content which is 9.06 %. Lastly, sample with 25 % sugar and fermented for 28 days had the highest percentage of recovery volume that is 51 %.