

EFFECTS OF DIFFERENT YELLOW ROCK
SUGAR AND LEMON (*Citrus limon*)
CONCENTRATIONS ON SENSORY AND
PHYSICOCHEMICAL PROPERTIES
OF RED DRAGON FRUITS
(*Hylocereus polyrhizus*)
ENZYMATIC DRINK

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ABSTRACT

This study was carried out to study the effect of yellow rock sugar (10-40%) and lemon (10-30%) on the sensory attributes (alcoholic flavour, bitterness, sourness, sweetness and purple colour intensity) as well as the physicochemical characteristics (alcohol content, total titratable acidity, pH, total soluble solids content and water activity) of red dragon fruits enzymatic drinks. The results showed that both yellow rock sugar and lemon concentration exhibited significant effect ($p < 0.05$) on the sensory attributes as well as the physicochemical properties. Yellow rock sugar was negatively correlated with alcohol flavour, bitterness, sourness and colour except sweetness. Sugar was found to have positive correlation with pH and total soluble solids content while being negatively correlated with total titratable acidity, water activity as well as alcohol content. Sample with 20% sugar added appeared to be the best formula with percentage mean values of 20.81% (alcohol flavour), 14.76% (bitterness), 60.48% (sourness), 61.21% (sweetness), 66.86% (colour) and contained 1.35% lactic acid, 0.96% citric acid, 27.4°Brix of soluble solids content, 1.71% alcohol content, pH of 3.44 and water activity, 0.9630. Meanwhile, lemon was found to be inversely correlated with alcohol flavour, sweetness and colour except bitterness and sourness. Lemon content was positively correlated with total titratable acidity and water activity while negatively correlated with pH and alcohol content. However, lemon exhibited no significant trend on the total soluble solids content of the enzymatic drinks. Red dragon fruits fermented with 20% lemon appeared to be best formula closest to the commercial sample with a pH of 3.66, 1.13% lactic acid, 0.81% citric acid, 22.3°Brix total soluble solids content and 2.41% alcohol as well as percentage mean values of 37.43% (alcoholic flavour), 25.62% (bitterness), 44.47% (sourness), 51.27% (sweetness) and 68.25% (colour). It was found that the alcohol content of sample fermented with lemon was higher than the sample fermented with yellow rock sugar only.

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