

DRAGON FRUIT (*Hylocereus polyrhizus*) PEEL JAM WITH
SUGAR PALM (*Azadirachta indica*) SYRUP AS SWEETENER

THESIS

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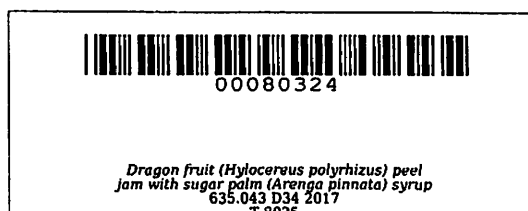
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**~~DRAGON~~ FRUIT (*Hylocereus polyrhizus*) PEEL JAM WITH SUGAR PALM
(*Arenga pinnata*) SYRUP AS SWEETENER**

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ABSTRACT

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The study determined the best formulation for utilization of sugar palm syrup in preparation of dragon fruit peel jam as sweetener. Specifically, it identified which formulation will be used in production of dragon fruit peel jam with sugar palm syrup as sweetener; determine the physico-chemical properties (pH, TSS and A_w) of dragon fruit peel jam, evaluate the sensory properties (color, texture, aroma, flavor, sourness, off-flavor, Sweetness and General Acceptability), determine the consumer acceptability and production cost in utilizing sugar palm syrup in production of dragon fruit peel jam.

Dragon fruit peel jam was prepared by mixing the fruit peel and the sweetener (Figure 1). The mixtures were then heated until sufficient water has evaporated for 45 minutes up to 1 hour.

The four formulations of dragon fruit peel jam in this study were 1 kilogram peel with 1 kg cane sugar (T0), 1kg peel: 1 Liter 65° brix of kaong syrup (T1), 1kilogram peel: 1.5 Liters 65° brix of kaong syrup (T2) and 1 kilogram peel : 2 Liters 65° brix of kaong syrup (T3).

Based on physico-chemical analysis and sensory evaluation, dragon fruit peel jam with 1 L kaong syrup (T1) has a pH of 4.043, 67 °Brix TSS and A_w of 0.588.

According to sensory evaluation it was determined to have a deep red color, a soft texture aroma of sugar palm syrup was perceptible, dragon fruit flavor was detectable, off-flavor was perceptible, sweet and slightly sour taste and was generally acceptable.

Dragon fruit peel jam with 1 L 65° brix of kaong syrup (T1) was rated as highly acceptable by the consumers. Moreover, consumers more preferred dragon fruit peel jam with 1 L 65° brix of kaong syrup (T1) than Dragon fruit peel jam with 1kg of cane sugar (T0). And 68% of the consumer are willing to buy the T1 than T0.

Processing of 1 kg of dragon fruit peel and 1 L of kaong syrup will yield 5 jars of jam, which have a unit cost of 124.26 / 350 grams.

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INTRODUCTION

Dragon fruit (*Hylocereus polyrhizus*) is an exotic succulent bright-colored fruit which contains 45% of scaly peels which normally go to waste during fruit consumption (Medical Health Guide, 2011). The peels of dragon fruit can be a good source of carbohydrates which has 74.1 grams and can give high amount of calories with about 318 calories (Reterta, 2015). The peels also contain high methoxy (HM) pectin which is the form of pectin that can form gels with the presence of sugar and acids (Muhammad et al., 2014). This concept makes it feasible to produce products like jam without synthetic pectin.

Jam is basically prepared by boiling fresh or pre-cooked fruit with a cane or beet sugar until the sufficient water evaporates and the mixture sets into gel form during cooling and the product must contain 32-34% of water (FAO, 1995).