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UNIVERSITY OF CALIFORNIA, DAVIS
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ECONOMICS SECTION

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DEVELOPMENT OF MIXED FRUIT LEATHER FROM GUAVA (*Psidium guajava*) AND DRAGON FRUIT (*Hylocereus undatus*)

By

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Degree of Bachelor of Food Science
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DECLARATION

I hereby declare that thesis is based on my original work except for quotations and citations which have been duly acknowledgement. I also declare that it has not been previously or concurrently submitted for any degree at UMT or other institutions.



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ABSTRACT

Fruit leather can be classified as a snack which is suitable for all, especially children. Fruits leathers are not only colourful and flavourful components, but they also serve as a source of energy, vitamin, and other nutrients. The objective of this study was to develop new fruit leather from guava mix with dragon fruit. There were five formulation of fruit leather which were formulation A (100 % guava purees), B (10 % dragon fruit puree, 90 % guava puree), C (30 % dragon fruit puree, 70 % guava puree), D (50 % dragon fruit puree, 50 % guava puree), and E (75 % dragon fruit puree, 25 % guava puree). Three analysis which were chemical analysis, physical analysis, and sensory evaluation were carried out. The entire tests were analyzed by SAS programmed to determine the Analysis of Variance (ANOVA) and Duncan's Multiple Range Test (DMRT). For chemical analysis, there were no significance different ($p < 0.05$) for moisture, ash, protein, fat, and carbohydrate content. Whereas, the percentage of vitamin C and fiber of fruit leather were increased significantly ($p < 0.05$) with increasing of dragon fruit puree used in the formulation. Physical analysis for colour showed that sample E was the darkest, while sample A was the brightest. The results for texture analysis showed the sample A was the most hard and sticky compared to the other samples with range 65.17- 282.67 and 36.17- 57.00. For sensory evaluation, according to overall acceptance, texture, sweetness, sourness, and balance of taste showed that formulation D was highly accepted by consumer.

PEMBANGUNAN PRODUK GEGULUNG BUAH CAMPURAN DARIPADA JAMBU BATU (*Psidium guajava*) DAN BUAH NAGA (*Hylocereus undatus*)

ABSTRAK

Gegulung buah boleh diklasifikasikan sebagai snek yang sesuai untuk semua peringkat umur terutamanya kanak-kanak. Gegulung buah bukan sahaja pelbagai dari segi warna dan rasa, malah ia juga merupakan sumber tenaga, vitamin, dan nutrient lain. Objektif kajian ini adalah untuk menghasilkan satu produk gegulung buah yang baru daripada campuran jambu batu dan buah naga, dan mengenalpasti penerimaan sensori daripada pengguna. Terdapat lima formulasi yang terdiri daripada formulasi A (100 % puri jambu batu), B (10 % puri buah naga, 90 % puri jambu batu), C (30 % puri buah naga, 70 % puri jambu batu), D (50 % puri buah naga, 50 % puri jambu batu), dan E (75 % puri buah naga, 25 % puri jambu batu). Program SAS digunakan untuk mengenalpasti ANOVA dan DMRT. Bagi analisis kimia, tiada perbezaan signifikan ($p < 0.05$) untuk kandungan lembapan, abu, protein, lemak, dan karbohidrat. Peratusan bagi vitamin C dan fiber untuk gegulung buah campuran pula meningkat dengan pertambahan penggunaan puree buah naga dengan perbezaan yang signifikan ($p < 0.05$). Analisis fizikal bagi warna pula menunjukkan sampel E lebih gelap manakala sampel A lebih cerah. Keputusan untuk analisis tekstur menunjukkan sampel A lebih keras dan kenyal dengan julat antara 65.17-282.67 and 36.17- 57.00. Bagi penilaian sensori, berdasarkan penerimaan keseluruhan, tekstur, kemanisan, kemasaman, dan keseimbangan rasa menunjukkan formulasi D paling diterima oleh pengguna.