





**EFFECT OF PECTIN AND SUCROSE CONCENTRATIONS ON  
PHYSICOCHEMICAL PROPERTIES AND SENSORY  
ACCEPTANCE OF DRAGON FRUIT LEATHER**

By  
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Research Report submitted in partial fulfillment of  
the requirements for the degree of  
Bachelor of Food Science (Food Technology)

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## ENDORSEMENT

The project report entitled **Effect Of Pectin And Sucrose Concentrations On Physicochemical Properties And Sensory Acceptance Of Dragon Fruit Leather** by **CHONG LIN SIEW**, Matric No. **UK16791** has been reviewed and corrections have been made according to the recommendations by examiners. This report is submitted to the Department of Food Science in partial fulfillment of the requirement of the degree of Food Science (Food Technology), Faculty of Agrotechnology and Food Science, Universiti Malaysia Terengganu.



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## DECLARATION

I Hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged.

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## ABSTRACT

Dragon fruit is a tropical fruit that is getting more popular these days. However, shelf life of dragon fruit is short and by processing it into fruit leather, it can help in prolong its shelf life. This study was conducted to determine the effects of pectin and sucrose concentrations on the physicochemical properties and sensory acceptance of dragon fruit leather. Samples were produced with different pectin concentrations (1.5%, 2.0%, 2.5%, and 3.0%) and sucrose concentrations (20%, 25% and 30%). Interaction between pectin and sucrose concentrations significantly affected ( $p < 0.05$ ) water activity and several texture properties (hardness, chewiness and cohesiveness) of dragon fruit leather. Meanwhile, pectin concentration alone significantly affected ( $p < 0.05$ ) pH and some texture properties (tensile strength, adhesiveness and gumminess), while sucrose concentration alone significantly affected ( $p < 0.05$ ) redness, calorie, fat and protein content of samples. Sample with 2.0% pectin and 30% sucrose was suggested because it had better texture and good sensory acceptance. These results showed that dragon fruit leather has potentials to be introduced as a new dried fruit product in order to increase popularity and variety of dragon fruit products in Malaysia.

*Keywords: dragon fruit leather, pectin concentration, sucrose concentration, physicochemical properties, sensory acceptance*



## ABSTRAK

Buah naga adalah buah-buahan tropika yang semakin popular kebelakangan ini. Walau bagaimanapun, jangka hayat buah naga singkat, pemprosesan ke dalam *fruit leather* boleh membantu memanjangkan jangka hayat buah naga. Kajian ini dijalankan untuk menentukan kesan penambahan sukrosa dan pektin pada kepekatan yang berbeza ke atas sifat-sifat fizikokimia dan penerimaan deria *dragon fruit leather*. Sampel yang dihasilkan dengan kepekatan pektin yang berbeza (1.5%, 2.0%, 2.5%, dan 3.0%) dan kepekatan sukrosa (20%, 25% dan 30%). Interaksi yang signifikan ( $p < 0.05$ ) antara pektin dan sukrosa terhadap aktiviti air dan pelbagai tekstur *dragon fruit leather* termasuk kekerasan, kekenyalan and kepaduan of *dragon fruit leather*. Sementara itu, kepekatan pektin sahaja mempengaruhi pH dan pelbagai tekstur *dragon fruit leather* termasuk ketegangan, kelekatan dan kelekitan manakala sukrosa mempengaruhi warna kemerahan, kalori, lemak dan protein sampel. Sampel dengan kepekatan pektin 2.0% dan kepekatan sukrosa 30% adalah disyorkan kerana ia mempunyai tekstur yang lebih baik dan mempunyai penerimaan deria yang baik. Keputusan kajian ini menunjukkan bahawa *dragon fruit leather* mempunyai potensi untuk diperkenalkan sebagai produk buah-buahan kering yang baru untuk meningkatkan populariti dan pelbagai produk buah naga di Malaysia.

Kata kunci: *dragon fruit leather*, kepekatan pektin, kepekatan sukrosa, sifat fizikokimia, penerimaan deria