

DEVELOPMENT OF DUKU TERENGGANU  
(LANGIUM DOMESTICUM CORR) JELLY

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Development of duku Terengganu (*Lancium domesticum* Carr)  
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PUSAT PEMBELAJARAN DIGITAL SULTANAH NUR ZAHIRAH

**DEVELOPMENT OF DUKU TERENGGANU  
( *Lancium domesticum Corr*) JELLY**

By

**MOHD AMIRUDDIN BIN KHAIRUDIN**

**RESEARCH PROJECT submitted in partial fulfillment of the requirements for the  
Degree of Bachelor of Food Science  
(Food Service and Nutrition)**

**FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE  
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## DECLARATION

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

**Date:**

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**ENCIK FISAL HJ. AHMAD  
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## ABSTRACT

This study was conducted to determine the physical characteristic and sensory acceptance level of Duku Terengganu (*Lancium domesticum Corr*) jelly. It was prepared using the juice which extracted from *Lancium domesticum Corr* flesh by using Destoner (PERTIMA). Five formulation of jelly including one control formulation (R) were tested. All results from physical analysis and sensory evaluation were analyzed using Statistical Analysis System (SAS) to determine mean value, standard deviation, and significant different ( $p < 0.05$ ) for each formulations. Five physical aspect were tested which were the total soluble solid, colour profile, texture, pH, and water activity ( $a_w$ ). According to physical analysis results, formulation D (100% of *Lancium domesticum Corr* juice) has the highest mean value for total soluble solid ( $48.47 \pm 2.01^a$ ) which significantly different ( $p < 0.05$ ) than other formulations. Formulation R (100% of water) has the highest mean value for 'L' ( $35.51 \pm 2.32^a$ ), 'b' ( $3.26 \pm 1.53^a$ ), texture ( $184.92 \pm 2.28^a$ ), pH ( $4.14 \pm 0.12^a$ ), and  $a_w$  ( $0.96 \pm 0.02^a$ ). The highest mean value for 'a' was formulation A (25% of *Lancium domesticum Corr* juice + 75% of water) which was  $0.79 \pm 0.15^a$ . Sensory evaluation was done by 40 untrained panels from UMT. Based on the results, formulation C (75% of *Lancium domesticum Corr* juice + 25% of water) scored highest in most attributes tested (colour, texture, sweetness, sourness, and overall acceptance) which indicate that this formulation was the most acceptable by panels meanwhile formulation R (100% of water) was the most unacceptable based on the lowest mean scores in each attributes tested. From the physical analysis and sensory evaluation results, it showed that the best formulation for *Lancium domesticum Corr* jelly was formulation C (75% of *Lancium domesticum Corr* juice + 25% of water). Thus, this study concluded that *Lancium domesticum Corr* jelly have the potential to be develop and commercialize as one of our local fruit product.

## PENGHASILAN JELI DUKU TERENGGANU (*Lancium domesticum Corr*)

### ABSTRAK

Kajian ini telah dijalankan untuk menentukan ciri – ciri fizikal dan juga tahap penerimaan sensori jeli duku Terengganu (*Lancium domesticum Corr*). Jeli – jeli yang diuji dalam kajian ini telah disediakan dengan menggunakan jus yang telah diesktrak daripada isi buah duku Terengganu (*Lancium domesticum Corr*) yang mana pengekstrakkan jus tersebut adalah dengan menggunakan sejenis alat yang dinamakan Destoner (PERTIMA). Kesemua keputusan hasil daripada analisis fizikal dan penilaian sensori telah dianalisis semula menggunakan Sistem Analisis Statistik (SAS) yan mana adalah untuk menentukan nilai purata, sisihan piawai dan perbezaan signifikan. Lima formulasi termasuk satu formulasi kawalan (R) telah diuji dalam kajian ini. Lima aspek fizikal bagi sesebuah jeli iaitu jumlah pepejal terlarut, profil warna, tekstur, pH, dan aktiviti air ( $a_w$ ) telah diuji. Berdasarkan keputusan analisis fizikal, formulasi D (100% jus *Lancium domesticum Corr*) mempunyai nilai purata jumlah pepejal terlarut tertinggi ( $48.47 \pm 2.01^a$ ) dan terdapat perbezaan yang signifikan ( $p < 0.05$ ) jika dibandingkan dengan formulasi – formulasi lain. Formulasi R pula mempunyai nilai purata tertinggi bagi ‘L’ ( $35.51 \pm 2.33^a$ ), ‘b’ ( $3.26 \pm 1.53^a$ ), tekstur ( $184.92 \pm 2.28^a$ ), pH ( $4.14 \pm 0.12^a$ ), dan  $a_w$  ( $0.96 \pm 0.02^a$ ). Nilai purata tertinggi bagi ‘a’ adalah formulasi A iaitu  $0.79 \pm 0.15^a$ . Penilaian sensori telah dijalankan oleh 40 orang panel tidak terlatih dari kalangan warga UMT. Merujuk kepada hasil penilaian tersebut, formulasi C mempunyai markah purata tertinggi dalam kebanyakan atribut yang telah dinilai (warna, tekstur, kemanisan, kemasaman, dan penerimaan keseluruhan) yang mana menunjukkan bahawa formulasi ini adalah yang paling diterima oleh panel – panel sementara formulasi R adalah yang paling tidak diterima berdasarkan markah purata yang terendah dalam kebanyakan atribut yang diuji. Daripada keputusan – keputusan analisis fizikal dan juga penilaian sensori, ia memperlihatkan bahawa formulasi yang paling baik bagi jeli *Lancium domesticum Corr* adalah formulasi C. Maka, kajian ini telah merumuskan bahawa jeli *Lancium domesticum Corr* mempunyai potensi untuk dihasilkan dan dikomersialkan sebagai salah satu produk hasilan buah – buahan tempatan.