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Development and physicochemical analysis of diospyros blanco
(buah mentega) jam / Yeoh Shyi Tong.

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DEVELOPMENT AND PHYSICOCHEMICAL ANALYSIS OF *Diospyros blancoi*
(BUAH MENTEGA) JAM

By
YEOH SHYI TONG

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

DEPARTMENT OF FOOD SCIENCE
FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE
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ENDORSEMENT

The project report entitled **Development and Physicochemical Analysis of *Diospyros blancoi* (Buah Mentega) Jam** by **Yeoh Shyi Tong**, Matric No. **UK 17316** 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 Bachelor of Food Science (Food Technology), Faculty of Agrotechnology and Food Science, University Malaysia Terengganu.




(Dr. Amir Izzwan bin Zamri)

Main supervisor

Date: 31/1/2012

DECLARATION

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

Signature : 

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ABSTRACT

This project was to develop jam from 'buah mentega' (*Diospyros blancoi*), to determine the physicochemical properties of developed 'buah mentega' jam and to determine the most acceptability of 'buah mentega' jam by using sensory evaluation. This study was important to diversify provide information on physicochemical characteristics of 'buah mentega' jam. Besides, this study gives consumers a chance to try other jam in order to create variability of fruit jam in daily meals with breads. This study also varies the uses of 'buah mentega'. To date, no study had been done on producing 'buah mentega' jam and its physicochemical characteristics. The sample was bought from Seberang Takir and Cabang Tiga, Kuala Terengganu, Terengganu. 'Buah mentega' was processed into 'buah mentega' puree. The 'buah mentega' puree, sugar, pectin and citric acid were mixed well and cooked according to the jam preparation method until the total soluble solid reached 68°Brix value. Jam produced was then bottled with hot-filling method. Physicochemical analyses had done on 'buah mentega' jam included total soluble solid, pH, water activity, texture (spreadability) and color. Proximate analyses had done on produced jam included moisture content, crude protein content, crude fat content, ash content, crude fiber content and total carbohydrate. Sensory evaluation was then carried out by using quantitative acceptance affective test, involving 30 untrained panellists. Attributes tested were color, aroma, spreadability, taste, sweetness, texture and overall acceptance. 7 points hedonic scale was used to evaluate these attributes. Statistical analysis was carried out by one-way ANOVA test for physicochemical, proximate and sensory analysis, and preference test for sensory analysis between 'buah mentega' jam and blueberry jam. Different percentages of 'buah mentega' puree used did affect physicochemical, proximate and sensory characteristics of the produced sauce. The produced jam has generally good acceptance for all formulations, and the highest acceptance was the sample with 30% of 'buah mentega' fruit used in jam production. The best formulation for 'buah mentega' jam was then being compared with commercial blueberry jam which showed result of being compatible in competing with commercialized blueberry jam.

ABSTRAK

Projek ini bertujuan untuk menghasilkan jam dengan buah mentega (*Diospyros blancoi*). Jam yang dihasilkan dinilai melalui sifat-sifat fizikokimia dan penilaian deria untuk mengenalpasti penerimaan dari segi penerimaan para ahli panel. Oleh itu, kajian ini memainkan peranan penting dengan menyediakan maklumat tentang ciri-ciri fizikokimia jam buah mentega. Selain itu, kajian ini mewujudkan peluang kepada para pengguna untuk menambahkan variasi jam dalam makanan harian yang berasaskan roti. Kajian ini juga menambahkan penggunaan buah mentega dalam industri makanan. Sehingga kini, tiada kajian yang dilakukan berkenaan dengan penghasilan jam buah mentega dan ciri-ciri fizikokimia jam buah mentega. Buah mentega yang dibeli di Seberang Takir dan Cabang Tiga, Kuala Terengganu, Terengganu diproseskan untuk dijadikan puri buah mentega. Puri buah mentega, gula, pectin dan asid sitrik digaulkan sehingga sekata dan dimasak mengikut cara pemprosesan jam sehingga campuran tersebut mencapai 68 peratus pepejal larut. Jam yang telah dihasilkan dibotolkan menggunakan kaedah “hot filling”. Analisis fizikokimia yang dijalankan terhadap jam buah mentega ini termasuk analisis kandungan peratus pepejal larut, bacaan pH, aktiviti air, struktur jam (kebolehan untuk disapukan) dan warna. Proximat analisis yang dijalankan terhadap jam buah mentega termasuk penentuan kandungan air, protein, lemak, abu, serat dan jumlah kandungan karbohidrat. Penilaian deria juga dijalankan menggunakan ujian kuantitatif penerimaan afektif yang melibatkan 30 orang ahli panel yang tidak terlatih. Sifat-sifat yang diuji adalah warna, aroma, kebolehan untuk disapu, rasa, kemanisan, struktur, and penerimaan keseluruhan jam. Kertas markah berskala 7 markah telah digunakan untuk penilaian ciri-ciri ini. Analisis statistik telah dijalankan dengan ujian “One-way ANOVA” untuk analisis fizikokimia, proksimat dan penilaian deria bagi jam buah mentega yang telah dihasilkan. Peningkatan penggunaan puri buah mentega telah meningkatkan kandungan protein, lemak, abu dan serat makanan. Sampel jam dengan penggunaan puri buah mentega sebanyak 30% dipilih sebagai formulasi jam yang terbaik dihasilkan kerana jam ini mendapat skor penerimaan yang lebih berbanding dengan formulasi yang lain. Jam buah mentega ini dibandingkan dengan jam buah blueberi dan didapati bahawa jam buah mentega mampu bertanding dengan jam buah blueberi.