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Effect of anti-browning treatments on physicochemical characteristics and sensory acceptance of green roselle pickle (*Hibiscus sabdariffa* L. var. UKMR-3) / Bernard Lai Kok Kit.

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Lihat Sebelah

EFFECT OF ANTI-BROWNING TREATMENTS ON
PHYSICOCHEMICAL CHARACTERISTICS AND
SENSORY ACCEPTANCE OF GREEN ROSELLE PICKLE
(*Hibiscus sabdariffa L.* var. UKMR-3)

By

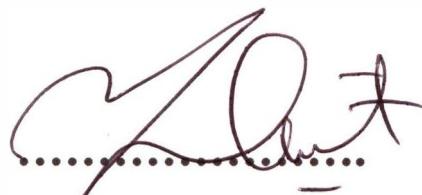
Bernard Lai Kok Kit

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
UNIVERSITI MALAYSIA TERENGGANU
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ENDORSEMENT

The project report entitled **Effect of Anti-browning Treatments on Physicochemical Characteristics and Sensory Acceptance of Green Roselle Pickle** by **BERNARD LAI KOK KIT**, Matric No. **UK17337** 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, Universiti Malaysia Terengganu.



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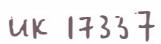
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DECLARATION

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

Signature : 

Name : 

Matric No. : 

Date : 

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ABSTRACT

The inhibition of enzymatic browning catalyzed by polyphenol oxidase (PPO) is still an important challenge in food processing as shown in the case of green roselle, where its utilization as raw materials of food products is hindered by its susceptibility to enzymatic browning. The aim of this work was to evaluate the effect of anti-browning treatments on physicochemical characteristics and sensory acceptance of green roselle pickle (*Hibiscus sabdariffa L.* var. UKMR-3). Two types of physical (hot water blanching and steam blanching) and three types of chemical treatments (0.15M citric acid, 0.15M ascorbic acid and 0.15M calcium chloride) were applied as anti-browning treatments. Different anti-browning treatments significantly affected ($p<0.05$) the physicochemical characteristics (total soluble solids, yellowness, pH, titratable acidity, firmness and proximate compositions) and sensory properties (color, texture and overall acceptance) of green roselle pickle. Green roselle pickle treated with 0.15M calcium chloride is the suggested treatment since it had the highest firmness and high greenness. It also had the second highest score of overall acceptance and second highest vitamin C content after 10 days of pickling. These results showed that with proper anti-browning treatment, green roselle has potentials to be produced into food products such as pickle.

ABSTRAK

Perencatan pemerangan berenzim yang dimangkinkan oleh polyphenol oxidase (PPO) masih merupakan satu cabaran yang penting dalam pemprosesan makanan seperti dalam kes roselle hijau, di mana penggunaannya sebagai bahan mentah produk makanan dihalang oleh kecenderungannya menjadi mangsa pemerangan berenzim. Tujuan kerja ini adalah untuk menilai kesan rawatan anti-pemerangan pada ciri-ciri fizikokimia dan penilaian deria jeruk roselle hijau (*Hibiscus sabdariffa L.* var. UKMR-3). Dua rawatan fizikal (celur stim dan celur air panas) dan tiga jenis rawatan kimia (0.15M asid sitrik, 0.15M asid askorbik dan 0.15M kalsium klorida) telah digunakan sebagai rawatan anti-pemerangan. Rawatan anti-pemerangan yang berbeza mempengaruhi cirri-ciri fizikokimia (jumlah pepejal terlarut, kekuningan, pH, asiditi titrat, tekstur dan komposisi proksimat) dan sifat sensori (warna, tekstur dan penerimaan keseluruhan) dengan ketara ($p<0.05$). Jeruk roselle hijau dengan rawatan 0.15M kalsium klorida merupakan rawatan yang disyorkan kerana ia mempunyai tekstur yang terbaik dan kehijauan dengan baik. Ia juga mempunyai skor yang kedua tertinggi dalam penerimaan keseluruhan dan kandungan vitamin C yang kedua tinggi. Keputusan ini menunjukkan bahawa roselle hijau mempunyai potensi untuk dihasilkan sebagai produk makanan seperti jeruk jika dirawat dengan anti-pemerangan yang sesuai.