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Effect of different drying temperature on antioxidant properties of red sessile joy weed (*Alternanthera sessilis*) and its application in coconut milk / Koay Boon Keat.

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HAK MILIK
PUSAT PEMBELAJARAN DIGITAL SULTANAH NUR ZAHIRAH

EFFECT OF DIFFERENT DRYING TEMPERATURE ON ANTIOXIDANT
PROPERTIES OF RED SESSILE JOY WEED (*Alternanthera sessilis*) AND ITS
APPLICATION IN COCONUT MILK

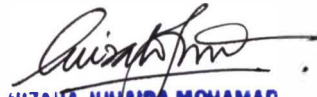
By
Koay Boon Keat

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

DEPARTMENT OF FOOD SCIENCE
FACULTY OF AGROTEHNOLOGY AND FOOD SCIENCE
UNIVERSITY MALAYSIA TERENGGANU
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ENDORSEMENT

The project report entitled **Effect of different drying temperature on antioxidant properties of red sessile joyweed (*Alternanthera sessilis*) and its application in coconut milk** by Koay Boon Keat, Matric No. UK 16518 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.



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DECLARATION

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

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ABSTRACT

Red sessile joyweed (*Alternanthera sessilis*) is believed to have high antioxidant properties which made it being used for medicinal properties in all over the world. This study was carried out to determine the effect of different drying temperature (50, 60, 70 and 80°C) on its antioxidant properties. The extract of the plant that has been dried at temperature gave the least effect on its antioxidant properties which was applied into coconut milk to see its ability in inhibit the oxidation process. The antioxidant activity was determined using ferric thiocyanate (FTC) and thiobarbituric acid (TBA) method while the radical scavenging activity was measured by 1, 1-diphenyl-2-picrylhydrazyl (DPPH) method. The extract which had been dried at 80°C shows significantly stronger antioxidant and scavenging activity but not significantly difference ($P < 0.05$) with the fresh sample and BHT (2, 6-di-*tert*-butyl-*p*-hydroxytoluene). The extracts also show a good inhibition of lipid oxidation after being applied in coconut milk.

ABSTRAK

Keremek merah (*Alternanthera sessilis*) dipercayai mempunyai sifat antioksidan yang tinggi dan digunakan untuk ciri-ciri perubatan di seluruh dunia. Kajian ini telah dijalankan untuk menentukan kesan suhu pengeringan yang berbeza (50, 60, 70 and 80°C) ke atas ciri-ciri antioksidannya. Ekstrak tumbuhan yang telah kering pada suhu memberikan kesan paling rendah terhadap ciri-ciri antioksidannya akan digunakan ke dalam santan untuk melihat kemampuannya dalam menghalang proses pengoksidaan. Aktiviti antioksidan adalah ditentukan menggunakan kaedah ferric thiocyanate (FTC) dan kaedah asid thiobarbituric (TBA) manakala aktiviti radikal cara memerangkap diukur oleh kaedah 1, 1-diphenyl-2-picrylhydrazyl (DPPH). Ekstrak yang telah kering pada 80°C menunjukkan antioksidan ketara kukuh dan aktiviti memerangkap tetapi tidak ketara perbezaan ($P < 0.05$) dengan sampel segar dan BHT (2, 6-di-*tert*-butyl-*p*-hydroxytoluene). Ekstrak juga menunjukkan perencatan baik pengoksidaan lipid selepas digunakan dalam santan.