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Antioxidant properties and phenolic content of different parts of
Cucumis sativus L. 'Timun Betik' / Lee Ching Siang.

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Lihat Sebelah

HAK MILIK
PUSAT PEMBELAJARAN DIGITAL SULTANAH NUR ZAHIRAH

ANTIOXIDANT PROPERTIES AND PHENOLIC CONTENT OF DIFFERENT
PARTS OF *Cucumis sativus L.*
'TIMUN BETIK'

By
LEE CHING SIANG

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

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

The project report entitles **Antioxidant Properties And Phenolic Content of Different Parts of 'Timun Betik' (*Cucumis sativus L.*)** by **Lee Ching Siang**, Matric No. **Uk17052** 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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Date: 30/1/2012

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

The aim of this study was to determine the antioxidant properties and phenolic content of different parts of 'Timun Betik' (*Cucumis sativus L.*) namely peel, flesh, midsection and seed. Extraction was carried out to yield methanolic extract from the respective fruit parts. Free radical scavenging assay, ferric thiocyanate assay, thiobarbituric acid assay, *p*-anisidine assay and total phenolic content assay were employed. Seed of 'Timun Betik' was determined to exhibit the highest scavenging activity ($52.11 \pm 0.60\%$) compared to other fruit parts which strongly due to its high amount phenolic compounds (18.90 ± 2.22 mg GAE/g extract). Besides, peel of 'Timun Betik' showed an average of 3.02 ± 0.15 index of anisidine value. Thus, these results suggest that methanolic extracts of 'Timun Betik' seed and peel may serve as a potential source of natural antioxidant for food and other application.

ABSTRAK

Kajian ini dilakukan dengan objektif untuk menentukan sifat-sifat antioksidan dan kandungan sebatian fenolik bagi bahagian-bahagian yang berlainan buah 'Timun Betik' (*Cucumis sativus L.*) iaitu kulit, isi, bahagian tengah dan biji. Proses pengekstrakan telah dilakukan bagi menghasilkan ekstrak 'methanolic' untuk setiap bahagian berkenanan. Pengukuran 'free radical scavenging' , 'ferric thiocynate' , asid 'thiobarbituric' , 'p-anisidine' dan kandungan sebatian fenolik telah dijalankan. Biji 'Timun Betik' telah menunjukkan aktiviti 'free radical scavenging' ($52.11 \pm 0.66\%$) dan kandung sebatian fenolik ($18.90 \pm 2.22 \text{mgGAE/g}$ ekstrak) yang lebih tinggi berbanding dengan bahagian-bahagian lain pada buah. Selain itu, kulit 'Timun Betik' menunjukkan nilai 3.02 ± 0.15 untuk indek anisidine. Oleh itu, keputusan kajian ini menunjukkan bahawa ekstrak 'menthanolic' biji dan kulit 'Timun Betik' mempunyai potensi sebagai sumber antioksidan semula jadi untuk kegunaan dalam makanan dan lain- lain produk yang bersesuaian.