EFFECT OF [illegible] ON THE FRUIT CHARACTERISTICS AND PROXIMATE ANALYSES OF PUMPKIN (*Cucurbita maxima* L.)

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2010

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Effects of pomsc enriched bris soil on the fruit characteristics and proximate analyses of pumpkin (Cucurbita maxima L.) / Nik Aisyah Nik Muhammad @ Mohd.

Lihat sebelah

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by
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Research Report submitted in partial fulfilment of the requirements for the degree of Bachelor of Science in Agrotechnology (Post Harvest Technology)

DEPARTMENT OF AGROTECHNOLOGY
FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE
UNIVERSITI MALAYSIA TERENGGANU
2010

ENDORSEMENT

The project report entitled **EFFECT OF POMSC ENRICHED BRIS SOIL ON THE FRUIT CHARACTERISTICS AND PROXIMATE ANALYSES OF PUMPKIN (*Cucurbita maxima* L.)** by **NIK AISYAH BINTI NIK MUHAMMAD@ MOHD**, Matric No. **UK 15948** has been reviewed and corrections have been made according to the recommendations by examiners. This report is submitted to the Department of Agrotechnology in partial fulfilment of the requirement of the degree of Bachelor of Science in Agrotechnology (Post Harvest Technology), Faculty of Agrotechnology and Food Science, Universiti Malaysia Terengganu.

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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.

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ACKNOWLEDGEMENTS

The author wishes to express her sincere thanks and gratitude to Miss Roshita Ibrahim, a lecturer in Department of Agrotechnology, Faculty of Agrotechnology and Food Science, Universiti Malaysia Terengganu for her kind advice and supervision without which this project would not have been materialized.

Special thanks to co-supervisor, Miss Siti Nordahliawate Mohamed Sidique and also to laboratory staffs of the Post Harvest Technology Laboratory, Dr. Chua Tse Seng, parents and friends who helped in one way or another during the progress of this project. Hope those words of thanks though brief and simple are truly meant with warm gratitude send.

ABSTRACT

Pumpkin (*Cucurbita maxima* L.) is from the family of *Cucurbitaceae* and the fruits are globular in shape with strong flavoured yellow orange flesh. The plants grow by absorbing nutrients from the soil and their ability to do this depends on the nature of the soil. BRIS soil with addition of palm oil mill sludge cake (POMSC) helps to improve water holding capacity, increase poor cation exchange capacity (CEC), increase inherent soil status, increase drainage and decrease moisture stress in BRIS soil. This study was conducted to investigate the physical characteristics and nutritional compositions of pumpkin cultivated on different types of soil treatments involving POMSC. The physical characteristics studied were fruit weight, size, pulp and skin colour and pulp texture. Meanwhile, the nutritional compositions involved quantitative measurements of all the proximate analyses (water, protein, fat, ash, fibre and carbohydrate). The preliminary studies done on the soil NPK analyses showed that POMSC contained higher, N, P and K values. Therefore, BRIS soil with more addition of POMSC contained higher NPK. The analyses done on the pumpkins showed that those cultivated on BRIS soil with 34 t/ha POMSC had significantly higher nutritional contents mainly protein and fibre but lower fat and carbohydrates compared to pumpkins cultivated on BRIS soil with 22t/ha POMSC and BRIS soil control. However, the fruits from BRIS soil with 34t/ha POMSC were slightly smaller in the size due to higher number of fruits per plants compared to the other soil treatments. The high content of NPK in POMSC might explained the higher nutritional content obtained in the pumpkins cultivated on BRIS soil with 34t/ha POMSC.

ABSTRAK

Labu (*Cucurbita maxima* L.) adalah dari famili *Cucurbitaceae* dan buahnya adalah berbentuk bundar dengan isi kuning kejinggaan dan aroma/rasa yang kuat. Pokok tumbuh dan membesar dengan menyerap nutrisi daripada tanah dan kebolehan untuk menyerap air bergantung kepada sifat semulajadi tanah. Tanah Bris yang dicampur dengan enap cemar kilang kelapa sawit (POMSC) dapat menolong meningkatkan kebolehan memegang air, meningkatkan pertukaran kation yang lemah, meningkatkan kebolehan semulajadi tanah, meningkatkan penyaliran dan mengurangkan tekanan kelembapan dalam tanah Bris (mengurangkan larut lesap nutrien ke dalam tanah). Kajian telah dijalankan untuk menyiasat ciri-ciri fizikal dan komposisi nutrisi buah labu yang ditanam di atas rawatan tanah melibatkan POMSC. Ciri-ciri fizikal yang dikaji adalah berat labu, warna isi dan kulit dan tekstur isi. Sementara itu, komposisi nutrisi melibatkan pengukuran kuantitatif analisis proksimat (kandungan air, protein, lemak, abu, gentian serat dan karbohidrat). Kajian awal yang telah dijalankan ke atas analisis NPK tanah menunjukkan POMSC mengandungi nilai N, P dan K yang tinggi. Oleh itu, tanah Bris yang dicampur dengan POMSC mengandungi nilai NPK yang lebih tinggi. Analisis yang telah dijalankan ke atas labu menunjukkan labu yang ditanam di atas campuran tanah Bris dengan 34 tan/ha POMSC mempunyai kelebihan yang ketara terutama dari segi kandungan protein dan gentian seratnya manakala kandungan lemak dan karbohidratnya lebih rendah berbanding labu yang ditanam di atas campuran tanah Bris dengan 22 tan/ha POMSC dan tanah Bris kawalan. Walaubagaimanapun, buah yang ditanam di atas campuran tanah Bris dengan 34 tan/ha POMSC bersaiz lebih kecil kerana bilangan buah untuk setiap pokok adalah lebih banyak berbanding rawatan tanah yang lain. Kandungan NPK yang tinggi di dalam POMSC ini boleh menjelaskan mengapa kandungan nutrisi yang diperolehi adalah lebih tinggi di dalam labu yang ditanam di atas campuran tanah Bris dengan 34 tan/ha POMSC.