

**PRODUCTION OF COOKIES INCOPORATED WITH  
MANGOSTEEN PEEL EXTRACT**

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**Final Year Project Report Submitted in  
Partial Fulfilment of the Requirements for the  
Degree of Bachelor of Science (Hons.) Food Science and Technology  
in the Faculty of Applied Sciences,  
Universiti Teknologi MARA**

**NOVEMBER 2009**

## ACKNOWLEDGEMENT

Upon completion of this project report, I would like to express my gratitude to many parties. First and foremost, grateful to the Almighty Allah for His merciful in giving me an opportunity to prepared and finished my final year project.

My heartfelt thanks go to my supervisor, Assoc. Prof Dr. Noriham Abdullah who has patiently guided me, devoting her uttermost time and effort with generosity. I am debted to all of the guidance, valuable supervised, comment and cooperation given by her since the beginning of this final year project.

I would like to extend my appreciation to the post-graduate students and my friends for the comment and criticism and for their help to accomplish my final year project. Special thanks and deepest appreciation goes to my parents, for all understanding, support and encouragement.

Finally, I would like to express my gratitude for those who have helped me to accomplish my final year report. Your help and guidance are really appreciated.

Sincerely,

Siti Azima Binti Abdul Muttalib

November 2009

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## ABSTRACT

### PRODUCTION OF COOKIES INCORPORATED WITH MANGOSTEEN PEEL EXTRACT

Mangosteen was scientifically known as *Garcinia mangostana L.* The peel has been reported to contain natural pigment called anthocyanin which is potential to be natural colourants and antioxidant. Therefore, the mangosteen peel extract (MPE) was obtained by water extraction method and two formulations of cookies incorporated with MPE were produced to investigate the oxidative stability of cookies. The acceptability of cookies and the colour stability of cookies incorporated with MPE were also investigated. Prior to this investigation, the colour stability of MPE at different pH was determined by using UV-Vis Spectrophotometer and it was detected at lambda maximum ( $\lambda_{max}$ ) of 515.78 nm. The results showed that the lower the pH the higher the absorbance reading and the more stable the anthocyanin was. The effect of the MPE on cookies against oxidative reaction was measured by conducting the analysis on Peroxide Value (PV) and Thiobarbituric Acid (TBA) for four week of storage period. Cookies incorporated with MPE showed the lowest PV and TBA compared to the control cookies. However, cookies with MPE treated at lower pH (3.00) showed the lowest PV and TBA value compared to the others. The colour stability of cookies during four week of storage study was determined by using Minolta-Chromameter. Cookies incorporated with MPE exhibited low  $L^*$  values and  $b^*$  values but higher in  $a^*$  values compared to the control cookies. This indicated that the incorporation of MPE in cookies results in an attractive red tonality of colours. The  $L^*$ ,  $a^*$  and  $b^*$  values of the cookies incorporated with MPE showed a non significantly decreased in colour for the first 3 weeks and insignificantly decreased in colour during the fourth week of storage. The acceptability of cookies was measured by using 9-point Hedonic scale and 64 panelists were used. The mean score for the overall acceptability of cookies incorporated with MPE were around 6 which showed the acceptability of panelist to this product.