

UNIVERSITI TEKNOLOGI MARA

**PREPARATION AND EVALUATION OF NEEM
SEED OIL NANOCREAM USING SUCROSE
MONOESTER (LAURATE)**

ZAKIAH BINTI BAKAR ALI

BACHELOR OF PHARMACY

2012

UNIVERSITI TEKNOLOGI MARA

**PREPARATION AND EVALUATION OF NEEM
SEED OIL NANOCREAM USING SUCROSE
MONOESTER (LAURATE)**

ZAKIAH BINTI BAKAR ALI

Dissertation submitted in partial fulfilment of the requirements
for the Bachelor of Pharmacy (Hons.)

Faculty of Pharmacy

2012

APPROVAL SHEET

I hereby recommend that the thesis prepared under my supervision by Zakiah Binti Bakar Ali entitle "Preparation and Evaluation of Neem Seed Oil Nanocream Using Sucrose Monoester (Laurate)" accepted in partial fulfilment of the requirements for Degree of Pharmacy from the Faculty of Pharmacy, UTM.

.....

Date

.....

(Mr. Ahmad Mustafa Eid)

Supervisor

.....

Date

.....

(Professor Dr Aishah Adam)

Dean Faculty of Pharmacy

ACKNOWLEDGEMENTS

All the praises to Allah S.W.T who blessed me with good health and strength to finish up my research and thesis writing accordingly. I would like to acknowledge and extend my heartfelt gratitude to my supervisor, Mr. Ahmad Mustafa Eid. The supervision, constructive suggestions and full of support that he gave truly help for the research and thesis completion, from the beginning till the end.

My grateful thank goes to my research partner Khairunnisa' Binti Jusoh and lab assistants for their guidance and knowledge in the lab along my research project. I also would like to acknowledge the Faculty of Pharmacy UITM Puncak Alam for the financial support in providing the materials and also the equipments needed for this project.

Last but not least, I would like to dedicate my deepest thanks and appreciation to my family especially my mother for her unconditional love, support and encouragement to complete this project.

Zakiah Binti Bakar Ali

2011/2012

ABSTRACT

The formation of oil in water (o/w) nanocream containing neem oil which has droplet size < 200 nm was formulated and developed for application of topical product. Neem oil, which originated from India, was used in this study due to its wide range of insecticidal and various types of biomedical properties. An experimental study of neem oil nanoemulsion was conducted through various formulations consisting of various ratios of neem oil, sucrose laurate (1695) and glycerol. The particle sizes and visual observation of the prepared neem oil nanophase gel were analyzed and the best formulation was selected for the preparation of neem oil nanocreams with the addition of different concentrations of thickening agent such as Carbopol 934 and 940 into the system. Results obtained showed that formulations of 10%, 15% and 20% neem oil; 1.0% Carbopol 940 were found to have the most favorable characteristic with small droplet size (<200 nm), low polydispersity index (< 0.2 PDI), good cream rheology properties plus great stability.