

UNIVERSITI TEKNOLOGI MARA

NON-RINSE ANIMAL SHAMPOO

ZAINATUL FADHILAH BINTI ZULKARNAIN

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

2015

ACKNOWLEDGEMENT

I am very thankful to Allah The Almighty who blesses all of those skills which were needed in order to complete this final year project. Many thanks to my supervisor, Assoc. Prof. Dr. Wong Tin Wui for his experts, guidance, sincerity and also encouragement that extended to me. I also take this opportunity to record my sincere thanks to my colleague, Nurul Fazilah binti Rosli, the postgraduate students, staffs, other lecturers (Dr. Minaketan Tripathy and Dr. Zolkapli Eshak) and department of pharmaceutics, Faculty of Pharmacy, UiTM for continual supports, guiding and helping me throughout my final year project. Last but not least to my lovely parents and siblings who always give me supports emotionally and financially.

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENT	ii
TABLE OF CONTENTS	iii
LIST OF TABLES	v
LIST OF FIGURES	vi
LIST OF ABBREVIATIONS	vii
ABSTRACT	viii
CHAPTER ONE: INTRODUCTION	1
1.1 Problem Statement	1
1.2 Existing Solution and Limitations	1
1.3 Hypothesis and Objectives	1
CHAPTER TWO: LITERATURE REVIEW	3
2.1 Definition	3
2.2 Types of Animal Shampoo Product	3
2.3 A Review on Current Market of Non Rinse Animal Shampoo	5
2.4 A Suitable Ingredient For Non Rinse Animal Shampoo	15
2.5 The Non-Rinse Animal Shampoo Formulation	27
CHAPTER THREE: MATERIALS AND METHODS	31
3.1 Preparation of shampoo	31
3.1.1 Materials	31
3.1.2 Shampoo Production	31
3.2 Physicochemical Characterization	32
3.2.1 Physical appearance	32
3.2.2 pH	32

ABSTRACT

The non-rinse animal shampoo is a shampoo that does not need any water to be applied on the animal skin before or after bathing them. This can ease the personnel when handling their pets during bath as pets especially cats are afraid of water, and reduce harm or misbehave of pets towards the caretaker. It also decreases the water consumption used in bathing of pets. In countries of low climate temperature, no heating of water is needed and this saves electricity. The use of non-rinse shampoo is simple and quick. It implies that such products can be applied onto the homeless animals in petcare activity. This study identified formulation of non-rinse animal shampoo via journal and patent information, as well as, laboratory formulation study. The study first evaluated the critical ingredients required in the said product, namely therapeutic, surfactant, co-surfactant, preservative, moisturizer and liquid vehicle. The nanoemulsion was formulated through simple mixing of tocopheryl acetate (therapeutic) and polysorbate 20/sodium lauryl sulphate (surfactants) followed by homogenization. The nanoemulsion pH, surface tension, viscosity, physical appearance, size distribution and zeta potential were characterized against water when required. It had lower surface tension and viscosity than water which implied good spreading property during lathering. The pH of the developed shampoo is near neutral which suggested reduced skin irritation. The nanofeature of the emulsion (less than 100 nm) was envisaged to promote its cleaning activity and therapeutic delivery.

Chapter 1

INTRODUCTION

1.1 Problem statement

Some people may experience trauma when they are bathing their pets. Most of their companion animals tend to dislike to be bathed and misbehave towards their owners during bathing (Epstein, 1998).

1.2 Existing solution and limitations

The normal shampoos sold in the market are usually requiring water to be functional when it is applied on to the pet's skin. There are various types of non-rinse cleansing products which kill fleas and ticks, remove the unpleasant smells, provide nutrition to the animal's coat, and moisturize the animal's skin. Some of the products in the market are Magic Coat® Shampoo Dry Powder, Vet's + Best™ Waterless Dog Bath, AvoDerm® Skin & Coat Shampoo for dogs and cats, Dry Clean Shampoo®: PetPal™, and Professional Pet Products: Waterless Shampoo. Some animal shampoo products may not be multi-functional, not easy to handle and also very expensive.

1.3 Hypothesis and objectives

The need of water in the animal shampoo increases the water billing. In addition, a sick animal may not be suitable to be wet bathed, the hyperactive pet may respond aggressively to water and is difficult to be restrained in taking bath at specific time and place. Using wet shampoo, the owners need to dry their pet in order to prevent