



***IN VIVO* ASSESSMENT OF WATERMELON (*Citrullus lanatus*)
RIND JUICE SUPPLEMENTATION ON EXERCISE
PERFORMANCES AND MUSCLE SORENESS IN RATS.**

By

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AUTHOR'S DECLARATION

I hereby declare that this thesis entitled “*IN VIVO* ASSESSMENT OF WATERMELON (*Citrullus lanatus*) RIND JUICE SUPPLEMENTATION ON EXERCISE PERFORMANCE AND MUSCLE SORENESS IN RATS” is the result of my own research except as cited in the reference. It is my original work and has not been submitted previously or currently for any other degree at UiTM or any other institutions.

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TABLE OF CONTENTS

Author's declaration	ii
Intellectual Property	iii
Acknowledgement	vi
Table of Contents	vii
List of Tables	ix
List of Figures	x
Lists of Abbreviations	xi
Abstract	xii
CHAPTER 1 INTRODUCTION	1
1.1 Background of the Study	1
1.2 Problem Statement	3
1.3 Objectives	4
1.3.1 General Objective	4
1.3.2 Specific Objectives	4
1.4 Significances and Original Contributions of This Study	4
1.5 Hypothesis	5
CHAPTER 2 LITERATURE REVIEW	6
2.1 <i>Citrullus lanatus</i>	6
2.1.1 Origin and geographical distribution	6
2.1.2 Botanical description	6
2.1.3 Morphology and features	7
2.1.4 The nutrient composition in <i>Citrullus lanatus</i> flesh	8
2.1.5 Bioactivities of <i>Citrullus lanatus</i>	9
2.2 Non-essential amino acid, L-citrulline	10
2.2.1 The amount of L – citrulline in <i>Citrullus lanatus</i> rind	11
2.2.2 Therapeutic used of L – citrulline	11
2.3 The uses of rats in a research	12
2.4 Muscle fatigue and muscle soreness	13
2.4.1 Preventive measure for muscle soreness	15
2.4.2 Biomarkers for detection of muscle fatigue	16

ABSTRACT

Watermelon (*Citrullus lanatus*) is a fruit rich in phytonutrients like L-citrulline. Watermelon rind contains more L-citrulline compared to watermelon flesh. However, the effect of supplementation of watermelon rind juice that contain high amount of L-citrulline is still uncertain. 18 male Wistar rats were acclimatized for 2 weeks. Then, rats are classified into 3 groups and it is supplemented with different solution twice a day for 2 weeks; Cx group: filtered tap water, L-cit group: standard L-citrulline, RR group: watermelon rind juice. After 2 weeks of treatment, rats are allowed to swim for 10 minutes in the morning and evening for the first 2 days and swim until exhaustion for the 3rd day. Rats were anesthetized with KTX after 24 hours of the last day of swimming exercise. The blood samples were collected by cardiac puncture and biomarkers assay (lactate and ammonia) was analyzed. Both ammonia and lactate concentration shows no significant difference between all groups ($p>0.05$). However, supplemented group still able to prolong time to exhaustion during swimming exercise. At the same time, supplemented group able to suppress lactate concentration and effective as ammonia detoxifier. My findings suggest that the supplementation of watermelon rind juice potentially to be nutritional intervention to improve exercise performance.

Key words : *Citrullus lanatus*, Fatigue, Citrulline, Ammonia, Lactate