UNIVERSITI TEKNOLOGI MARA

EFFECT ON PATERNAL SUPPLEMENTATION OF PALM OIL. (TOCOTRIENOL RICH FRACTION) ON MALE FERTILITY

BY

NIK NUR SYAMIMI BINTI NIK MAT

Thesis Submitted in Partial Fulfillment of the Requirement for

Bachelor of Medical Laboratory Technology (Hons),

Faculty of Health Science, Universiti Teknologi MARA

2015

AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Undergraduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

Name of Student	: Nik Nur Syamimi Binti Nik Mat
Student I.D No	: 2012472558
Programme	: Bachelor of Medical Laboratory Technology
Faculty	: Faculty of Health Sciences
Title	: Effect on Paternal Supplementation of Palm Oil. (Tocotrienol Rich fraction) on Male Fertility
Signature	: 
Date	: 10th July 2015

TABLE OF CONTENTS

ABSTRACT

Infertility is defined as a reproductive system disease or problem that gives inability to having pregnancies and half of the cases are related to male infertility. Palm oil, Tocotrienols, a component of vitamin E, showed the strength to improve the functions of male reproductive system. This study was performed to investigate the improvement of male fertility through paternal supplementation of Vitamin E Palm Oil Tocorienol Rich Fraction (TRF) on male rat's model. A fifteen male rats of Albino Wistar were divided into 5 groups (n=3). Control negative group (F) was orally administered with distilled water (0.1 ml), control positive group (G) was orally administered with vitamin E-free corn oil (0.1ml) and treatment groups were orally administered with three different concentrations of TRF, at a dose of 30 mg/kg (H), 60 mg/kg (I) and 90 mg/kg (J) respectively. After 7 days of acute treatment, the blood was collected using retro orbital sinus technique for biochemical investigation and hormonal analysis. The rats were sacrificed using cervical dislocation technique. The sperm were collected from cauda epididymis for sperm analysis. TRF supplementation induced improvement in sperm morphology and motility compared to control negative group (F). Other than that, TRF also provide positive effects to the liver and renal function by result on reducing blood glucose and total bilirubin level. Hormonal analysis demonstrated the ability of TRF to enhance LH production, which action to enhance spermatogenesis, thus help in fertility booster. This study suggested that TRF possesses the potential as anti-infertility agent and beneficial to the renal and liver function.

CHAPTER 1

INTRODUCTION

1.1 FERTILITY

The total fertility rate (TFR) is indicator to measure the fertility's level rather than crude birth rate since it refers to birth per women. This is benefit to look for the changes' population in the country. According to the Central Intelligence Agency, Global fertility rates are resulting decline and this trend was popular in industrialized countries especially in Western Europe for over next 50 years. Asia countries in fact have recorded fertility rate at or below replacement level (2.1 per women) especially in China and Thailand (Gubhaju & Moriki-Durand, 2003).

1.2 INFERTILITY

According to World Health Organization (WHO), infertility is defined as a reproductive system disease or problem that gives an inability to having pregnancies after one years of regular unprotected sexual intercourse (Cooper et al.., 2010). Infertility in global perception where assigned both maternal and paternal, however, a previous studies claimed that about 50% of infertility couples were contribute from male (Brezina, Yunus, & Zhao, 2012; Plaseski, Noveski, Popeska, Efremov, & Plaseska-Karanfilska, 2013).