



UNIVERSITI TEKNOLOGI MARA

**THE EFFECT OF ALMOND CONSUMPTION ON ENDURANCE
PERFORMANCE AMONG BADMINTON PLAYER**

EMMANUEL SUMOK AK ESA

2015687072

**BACHELOR OF SPORT SCIENCE
FACULTY OF SPORT SCIENCE AND RECRETION
UNIVERSITI TEKNOLOGI MARA**

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ABSTRACT

For many centuries people aspect almond was go to healthy snack and almond not typically used as performance enhancer. A recent study has showing that almond has effect to sport performance. Almond are a good source of vitamin and mineral which is vitamin E some vitamin B, magnesium and manganese. Almond also containing healthy fats and protein. Apart from that, almond was contain high amino acid arginine which was precursor to nitric acid. The combination of these nutrients was showed almond have a strong potential benefit for athlete. This experimental study was to determine the effect of almond consumption to badminton athlete. There was 30 badminton player that participated in this study. They were divided into two group which were control(n=15), experiment(n=15). The experiment group was consume 75 grams of almond per day in 4 week and 85 grams of cookies for control group. The result shows that, there was no significant different between both subject, but the mean show that experiment group (12.40%) has higher significant than control group(11.11%). In conclusion, almond can contribute in sport endurance.

Key word: Almond, Endurance performance, Badminton

CHAPTER 1

INTRODUCTION

1.1 Background of study

Almonds were healthy tree nut food with high nutrient density because they are an excellent source of α -tocopherol, riboflavin, magnesium, manganese and a good source of dietary fiber, protein, copper and phosphorus (Chen, Lapsley and Blumberg, 2006). Furthermore, almonds were rich in arginine, a substrate for the synthesis of the endothelial dilator, nitric oxide, (Sabaté, Haddad, Tanzman, Jambazian and Rajaram, 2003). Almonds were also a source of monounsaturated fats, containing over 9 g per Oz (28 g), (Maguire, O'Sullivan, Galvin, O'Connor, O'Brien and 2004). This nutrient was an important role of studies that show almond consumption is link improvement of oxidative stress, (Chen, Blumberg, 2008), and enhance in low density lipoprotein (LDL), (Chen, Milbury, Lapsley and Blumberg, 2005), and improvement in dyslipidemia, (Jambazian, Haddad, Rajaram, Tanzman and Sabaté, 2011).

In July 2003, the U.S. Food and Drug Administration (FDA) approved a qualified health claim stating, "Scientific evidence suggests but does not prove that eating 1.5 ounces per day of most nuts, such as almonds, as part of a diet low in saturated fat and cholesterol may reduce the risk of heart disease". Apart from that, intensive prolonged of physical exercise will increasing production of Reactive Oxygen Species (ROS) via to oxidative flux into the mitochondrial respiration chain, phagocytic respiratory bursts, and other sources, (Finaud, Lac and Filaire, 2006).

CHAPTER 2

LITERITURE REVIEW

2.1 Introduction

In this chapter reviews there were many studies conducted in the area of knowledge comprehensive about almond. These reviews were to evaluate report of information that found in literature related to the area of study.

2.2 Almond

Almond is the member of Rosaceae which is sweet, cultivated almond that originated from bitter seeded species which evolved in the desert and foothill of central and southwest Asia. (John and Labavitch, 2000). Almond was introduced to California in the large commercial industry that was built with trees brought the Eastern United States, (Kester and Ross, 1996)

2.2.1 Type of almond

2.2.1.1 Nonpapareil (NP)

This type of almond has a soft shell, light color, High shutter opening and the shape flat and smooth surface. (Almond Board of California, 2015)

2.2.1.2 Carmel (CR)

This type of almond has a soft shell, better shell integrity, fairsulture opening and the narrow shape and smooth surface.. (Almond Board of California, 2015)