

**NUTRIENT COMPOSITION IN DIFFERENT TYPES OF  
CRACKER BEFORE AND AFTER FRYING PROCESS**

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## **ABSTRACT**

### **NUTRIENT COMPOSITION IN DIFFERENT TYPES OF CRACKERS BEFORE AND AFTER FRYING PROCESS**

Crackers were usually produced from the combination of flour, salt, monosodium glutamate (MSG), sugar and the most important ingredients were the seafood such as fish, prawn and squid. This analysis were carried out to analyzed the difference of the moisture, protein, fat, ash, carbohydrate composition and mineral content of the fish, prawn and squid crackers in raw and after the frying process. The proximate composition and mineral content of the samples were determined. The mean of the moisture, protein, ash, fat and carbohydrate content in raw fish were 10.29, 10.87, 5.51, 0.67 and 72.55 percent respectively. The mean of the moisture, protein, ash, fat and carbohydrate in raw prawn were 12.00, 4.36, 3.19, 0.40 and 80.04 percent compared to squid crackers were 10.42, 10.09, 5.27, 0.40 and 73.82 percent. Changes after the frying process in terms of moisture, ash, protein and carbohydrates were decreased respectively in all types of crackers. The fat content of all types of crackers were increase drastically after the frying process due to absorption of the oils that replaced the moisture that loss during frying process. The mineral that were analyzed were calcium, iron, magnesium, sodium, potassium and zinc decreased after the frying process in fish, prawn and squids crackers. The fish cracker contained the highest content of all nutrients and greater nutrient retained after frying compared to other crackers. The fish cracker is the best cracker to be consumed by the consumer. To avoid nutrient loss, the process of making the cracker and frying method must be concentrated.

## CHAPTER 1

### INTRODUCTION

#### 1.1 Background

Malaysian cuisine is exotic with an exciting range of flavors and culinary styles offering the uninitiated an endless gastronomic adventure. It comprises three main groups - Malay, Chinese and Indian with each having its own distinct style of cooking. There are also cuisines that have evolved from the meeting of cultures notably those of the *Nyonya* and Indian Muslim communities. *Krupuk* or *Kerupuk*, or *Kroepoek* in Dutch spelling (Indonesia), or *Keropok* (Malaysia), is a popular snack in parts of Southeast Asia. It consists of deep-fried crackers made of flour (usually tapioca flour or potato flour) and flavored with fish, prawns or vegetables. There are around 30 different recipes for cracker in Indonesia. Big producers of cracker and the place of origin of many cracker recipes are Sidoarjo in East Java and Garut in West Java.

In Terengganu, crackers are made by grinding the fish, prawn or vegetable to a paste, mixing with sago and then deep-frying it. It comes in two main forms: *keropok lekor* which is long and chewy, and *keropok keping* which is thin and crispy. Prawn crackers (American English: Shrimp Chip or Shrimp Cracker) are the most familiar cracker to Westerners. These crackers are