

**EFFECT OF TYPE OF FRIED FOODS ON THE QUALITY OF  
FRYING OIL**

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This Final Year Project Report entitled “**Effect of type of fried foods on the quality of frying oil**” was submitted by Nor Fishah Mohamad Nor, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Food Science and Technology, in the Faculty of Applied Sciences, and was approved by

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## **ABSTRACT**

### **EFFECT OF TYPE OF FRIED FOODS ON THE QUALITY OF FRYING OIL**

This study was conducted to determine the effect of types of fried food on the physicochemical properties of palm oil. Determinations of peroxide value, Iodine value and TBA value of frying oil were used to study the stability of palm oil, while polar compounds, polymer compounds, fatty acid contents, free fatty acid (%FFA), colour and viscosity were conducted to determine the quality and frying performance of the oils. The results obtained showed that fresh potatoes was the food that showed the highest content in %FFA, PV, TBA, and polymer compounds in the fried palm oil, whereas tapioca chips showed the lowest values in %FFA, PV, TBA, polar compounds, polymer compounds, and IV in the fried palm oil. All foods (tapioca chips, French fries and fresh potatoes) showed decreasing %SFA and increasing %MUFA while only fresh potatoes and French fries showed decreasing %PUFA in the fried palm oil. The results of this study indicated that frying oil that was used to fry foods increased in %FFA, TBA, polar compounds, polymer compounds, colour ( $a^*$ = redness and  $b^*$ = yellowness), and viscosity but for PV, the rate of increase was not constant as frying progressed.

## **ABSTRAK**

### **KESAN JENIS MAKANAN YANG DIGORENG KE ATAS KUALITI MINYAK MASAK**

Kajian ini dijalankan untuk menentukan kesan jenis makanan yang digoreng ke atas sifat-sifat fizik kimia minyak kelapa sawit. Nilai peroksida, nilai iodin dan nilai asid thiobarbiturik digunakan untuk mengkaji kestabilan minyak kelapa sawit, manakala kandungan polar, kandungan polimer, kandungan asid lemak, nilai asid bebas, warna dan kelikatan telah dijalankan untuk menentukan kualiti dan prestasi penggorengan minyak. Keputusan yang diperolehi menunjukkan bahawa kentang segar adalah makanan yang menunjukkan kandungan tertinggi bagi nilai peroksida, asid thiobarbiturik dan kandungan polimer dalam minyak kelapa sawit, manakala kerepek ubi menunjukkan nilai-nilai terendah dalam nilai asid bebas, nilai peroksida, asid thiobarbiturik, kandungan polar, kandungan polimer, dan nilai iodin dalam minyak kelapa sawit. Semua makanan (kerepek ubi, kentang goreng, dan kentang segar) menunjukkan pengurangan nilai asid lemak tepu dan peningkatan dalam nilai asid lemak mono tak tepu manakala hanya kentang segar dan kentang goreng menunjukkan pengurangan nilai asid lemak poli tak tepu dalam minyak sawit goreng. Keputusan kajian ini menunjukkan bahawa minyak masak yang digunakan untuk menggoreng makanan meningkat dalam nilai asid bebas, asid thiobarbiturik, kandungan polar, kandungan polimer, warna ( $a^*$ =kemerahan dan  $b^*$ =kuning), dan juga kelikatan, tetapi untuk nilai peroksida, kadar peningkatan adalah tidak tetap sepanjang proses menggoreng.