

**COMPARISON BETWEEN USED FRYING OILS
NAMELY SOYBEAN, SUNFLOWER AND CANOLA
BASED ON PHYSICAL AND CHEMICAL TESTS**

By

MOHD AZWAN BIN AHMAD BADRI

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ABSTRACT

COMPARISON BETWEEN USED FRYING OILS NAMELY SOYABEAN, SUNFLOWER AND CANOLA BASED ON PHYSICAL AND CHEMICAL TESTS

This project is carried out to compare the quality of three types of frying oils namely soybean, sunflower and canola before and after usage at three consecutive days of frying. Chemical analyses are carried out to determine the different of the oil samples in terms of peroxide values, anisidine values, totox values, acid values and iodine values. Physical tests are done for the determination of colour by using Lovibond Tintometer and viscosity by Brookfield Viscometer. Meanwhile sensory evaluation is carried out to determine the acceptability of the frying oils in terms of colour, texture, flavour and overall acceptability. Results show that the peroxide values, anisidine values, totox values, acid values, iodine values, colour and viscosity of the samples increase dramatically as the days of frying increase. Canola is the best frying oil in term of chemical tests due to its stability compared to the others. Meanwhile sunflower oil is the best frying oil in term of physical tests due to its lowest colour intensity and has better viscosity. In sensory evaluation, sunflower oil is more acceptable by panelists. In overall sunflower oil is the best frying oil of three frying oils used.

CHAPTER 1

INTRODUCTION

Oil for frying constitutes the largest usage of edible oils and fats. It is estimated that during 1981 about 12-16 million t of oils and fats were used for cooking human foods more than 35 % of the total world consumption of oils and fats in human foods (Potter and Hotchkins, 1998).

Frying oils are used domestically for deep-frying, but find wider use in catering and food manufacturing industries where they are used for a large variety of foods. In this application, the oil is used as a means of heat transfer and is used repeatedly until it has deteriorated to an acceptable level. Its stability both in use and storage is therefore important. Oils with similar shelf life may differ in their rate of deterioration at high temperature (Potter and Hotchkins, 1998).

Canola is the oil obtained from a relatively new variety of rapeseed oil. The original rapeseed oil was never much of a factor for edible use in the USA. For one reason, the plant did not grow well in relatively warm climates. As it did better in cooler climates, it was more important edible oil in countries such as Canada, Russia and Finland (Potter and Hotchkins, 1998).