

CANOLA OIL

FACTUAL CONSUMER INFORMATION

BACKGROUND

The Canola plant was developed from the rapeseed plant by means of traditional breeding techniques. The name “Canola” is derived from “Canadian Oil” and the new oilseed was selected mainly for its low-erucic acid and low glucosinolate composition. Canola and its products were thoroughly investigated before it was released for commercial use and today Canola is produced in many countries (www.canola-council.org). The USFDA (United States Food and Drug Administration) has accredited Canola Oil GRASS (generally accepted as safe) status. Canola oil is suitable for human consumption and is included as one of the edible oils by the American Oil Chemists Society (Food Fats and Oils, AOCs Resource Directory, 9th ed, 2006). Canola oil and oilcake have been used in Canada since the late 1970’s and is now a household name in Europe, the USA and Australia.

Canola Oil has seen the biggest increase in production over other vegetable oils over the past number of years and is now ranked number 3 in world production with about 18 million metric tons per annum.

At present, Canola oil is of lesser importance than other household oils to the South African consumer. However, the situation is expected to change in the not too distant future for especially three reasons:

1. Increased local production of Canola to significant levels
2. Greater consumer demand for vegetable oil due to the increase in living standards
3. Consumer demands for healthier oils

THE MYTHS ABOUT CANOLA OIL

Canola oil, like many other food products, is exposed to myths and misinformation. This discreditation of Canola oil, unfortunately, is to the detriment of a very good food product. The purpose of this information leaflet is to put Canola Oil into perspective.

REBUTTAL OF THE MYTHS

There is strong scientific evidence that **omega-3** fatty acids can assist in preventing certain cancers. As Canola oil is one of a few vegetable oils which is a good source of omega-3 fatty acids (alpha linolenic acid). Dr Carl Albrecht of the South African Cancer Association (CANSA) was one of the internationally renowned scientists concerned about the negativity surrounding Canola Oil. He, therefore, did an extensive and detailed literature survey to determine whether the negativity was justified (Canola oil –good or bad, C Albrecht, CANSA Report 2002). He made reference to several credible information sources and a summary of his survey and rebuttals is given below:

- Canola oil is from a special variety of rape which is **not chemically identical to the common rape plant**
- Rapeseed is **not a poisonous weed**
- Canola oil **is not an industrial oil** but does have industrial applications as a lubricant
- Canola oil does **not form latex-like substances that agglutinate red blood corpuscles**. Actually the opposite could be true
- Canola oil does not have any adverse effect on **vision or the peripheral nervous systems**
- Canola oil is **not a source of mustard gas** (the confusion with rapeseed is because it belongs to the mustard family, Brassicaceae)
- There is no evidence that canola glycosides depress the **immune system**
- There are **no free alcohols in canola oil**

The Canola Council of Canada (www.canola-council.org, link Canola Oil FAQ) also responded to each of the negative claims by means of scientific reports and facts.

A further example of the international recognition of Canola is the contents of the book “CANOLA AND RAPESEED – Production, Chemistry, Nutrition and Processing Technology”, edited by Fereidoon Shahidi, and with 28 international contributors”.

FAT IN THE DIET

Oil/fat in the diet is invariably and wrongly quoted as a major cause of serious diseases of lifestyle such as obesity, coronary heart disease, cancer and diabetes, to mention just a few. Unfortunately, this has caused a lot of confusion amongst ill-informed consumers up to the point where too little oil is consumed by some. This is unfortunate because oil is an important and essential product in the daily diet. Liquid oils contain essential fatty acids, notably omega-3 and omega-6, which are not produced by the body and should, therefore, be obtained through food which is consumed. What is true is that oil and oil products are energy dense, providing about 38 kilojoules per gram, whereas protein and carbohydrate provide about 17 kJ per gram. Nutritionists recommend that a “healthy diet” should not contain more than 30% oil/fat of the energy consumed.

The idea that all oils are equal is wrong. Fatty acid composition is a very important nutrition parameter. This has led to the terms “good fat” and “bad fat”. “Bad fats” include saturated fats in animal products (meat and dairy), trans fats and partially hydrogenated vegetable oils. High consumption of these “bad oils” can lead to diseases of lifestyle.

Liquid oils, like Canola, are high in unsaturated fatty acids and are classified as “good” oils and should form part of a daily diet, for example for vitamin absorption, energy, brain development and brain functioning. Consuming the wrong fats, can have serious consequences for the health and well-being of the population.

Local nutritionists realize that generally consumers are ill-informed about oil and are in the process of setting guidelines for oil usage which are based on global standards. It is hoped that this will assist consumers to make healthier choices about their dietary oil intake.

It is important to draw the attention to the minor components in oils and fats. Fatty acids and triglycerides are the major components in edible oils and fats while the minor components (2 to 4 %) are made up of a large number of compounds. Cholesterol is the best known minor component in animal fats while the plant sterols are a group of structurally

related compounds in plant oils. Recent studies revealed that the plant sterols and the vitamin E group (the tocopherols) are nutritionally important to maintain a healthy body.

CANOLA VERSUS PALM

During the past few years, palm olein (the softer fraction of palm oil) has been promoted by certain scientists. This was primarily based on oil stability, the absence of trans fatty acids and the nutritional properties of tocotrienols (minor components). The promotion of palm olein created more confusion than education. It was, therefore, decided to compare Canola with Palm and in the table a comparison between the properties of palm versus canola is reflected. The figures are averages. Fatty acid composition can vary and can be influenced by cultivar, location and weather patterns.

TABLE: Canola oil versus Palm olein(oil)		
<i>Major Components</i>		
	<u>Palm olein</u>	<u>Canola Oil</u>
Ambient Temperature	Semi-solid	Liquid
Palmitic (C16:0)	39	4
Oleic (C18:1)	43	60
Stearic (C18:0)	4	1.5
Linoleic (C18:2)	11	20
Alpha-linolenic	0.2	11
Trans fatty acids	<1.5	<1.5
Saturated fatty acids	high (45to 50)	low (<6)

<i>Minor components</i>		
Tocopherols	240 ppm	692 ppm
Tocotrienols	560 ppm	-
Sterols	2250 ppm	8050 ppm
Cholesterol	16 ppm	53 ppm

The table indicates that canola is a richer source of essential fatty acids, linoleic and alpha linolenic acid. Palm olein on the other hand contains about ten times more palmitic acid than canola oil. This is important because palmitic acid is one of the saturated fatty acids that increase LDL cholesterol (the bad cholesterol) (Food Fats and Oils, AOCS Resource Directory 2006). Canola oil is clearly the more unsaturated of the two oils and therefore the healthier.

Regarding the minor components it is clear that the tocopherol content of canola oil is higher than that of palmolein. The tocopherols have vitamin E activity and it suggests that canola will be a better source of vitamin E. The table shows that palm olein is a valuable source of tocotrienols.

Canola is generally considered as the only vegetable oil, when evaluated by recognized nutritional standards, as nutritionally well balanced.

From the Table it is clear that, nutritionally speaking, canola is the better oil. It will also be the choice of the consumer because it is a liquid at ambient temperatures **whereas palmoil is not**. Canola oil can be mechanically expelled without solvent extraction and possible chemical residues in the oil and oilcake. Palm oil is also isolated without solvent extraction. Canola oil is recommended for household and industrial use while palm olein can find application in industrial frying operations because of superior stability at frying temperatures. It is not pourable (it has to be spooned out of its container) which makes it a cumbersome operation in the kitchen.

Plant breeders have, and are continuously developing, canola oil with a higher oleic acid composition which will make it more stable and suitable for industrial operations.

SUMMARY: THE NUTRITIONAL PROPERTIES OF CANOLA OIL

- Low in saturated fat (less than 6%)
- High in linoleic acid (omega-6), an essential fatty acid
- High in alpha-linolenic acid (omega-3)
- Can be a good defense against coronary heart disease (high sterol content)

Canola oil will have a beneficial nutritional and health advantage when incorporated into the daily diet. The major advantage of Canola oil must be its high alpha-linolenic acid (omega-3) content which can supplement the generally low consumption of omega-3.