



Blends of coconut oil

Dr. Surjit Kumar Saha

Chartered Engineer & Oil Technologist

3-AF, Green Park, Tagore Road, Civil Lines, Nagpur - 440 001

Coconut oil is an edible oil extracted from the kernel of mature coconuts harvested from the coconut palm. India produces about 3.5 million tons of Coconut Oil each year. Coconut oil contains 91 percent of saturated fatty acids, 6 percent of monounsaturated fatty acids and 2 percent of Polyunsaturated fatty acids. This makes coconut oil highly resistant to oxidation at high heats. For this reason, it is the perfect oil for high-heat cooking methods like frying.

Coconut oil consists almost entirely of Medium Chain Triglycerides which have an entirely different metabolism process as compared to long chain Triglycerides. These medium chain fatty acids go straight from the digestive tract to the liver, where they are turned into ketone bodies and provide a quick source of energy. The most abundant fatty acid in coconut oil is lauric Acid, which is broken down into a compound called monolaurin in the body. Lauric acid and monolaurin are both very interesting substances due to their inherent antibiotic properties by virtue of which they can kill microbes like bacteria, fungi and viruses in the human body. For this reason, coconut oil can also act as a protective agent against various infections..

Unrefined coconut oil actually improves blood

lipid profiles. In two separate rat studies conducted in Kerala, India, consumption of virgin coconut oil was compared against refined coconut oil and corn oil. The virgin coconut oil significantly reduced Total and LDL cholesterol, oxidized LDL, triglycerides and increased HDL cholesterol. It also had favorable effects on blood coagulation factors and antioxidant status. In a further study of women with abdominal obesity, coconut oil increased HDL and lowered the LDL:HDL ratio, while soybean oil increased Total and LDL cholesterol and decreased HDL. The medium chain triglycerides in coconut oil have also been shown to reduce blood triglycerides compared to long chain fats. Coconut oil is therefore protective against heart disease and not the other way around as per the negative myths associated with this oil.

Further, there is considerable evidence that coconut oil can help in losing weight. Animal and human studies have shown that the fast rate of oxidation of medium chain fatty acids leads to greater energy expenditure. Most animal studies have also demonstrated that the greater energy expenditure with medium chain fatty acids relative to long-chain fatty acids results in less body weight gain and decreased size of fat depots after several months of consumption. In a study conducted in Brazil on 40

Coconut oil can be blended with conventional edible oils such as groundnut, soybean, safflower, sesame and mustard oil. The approximate contents of saturated, monounsaturated and polyunsaturated fatty acids of different oils and their corresponding S:M:P ratios of the individual oils and their blends with equal amounts of the other conventional oils are presented in Table-1 and Table-2.

Soybean Oil	17	25	58	1.0:1.5:3.4
Safflower Oil		07	15	78
Sesame Oil	20	40	40	1.0:2.0:2.0
Mustard Oil	07	63	30	1.0:9.0:4.3

TAable-2 : Saturated, Monounsaturated and Polyunsaturated Fatty Acid Content of Blends of Coconut Oil with some Conventional Oils

No.	Oils in Blend	Content in Blend	S:M:P of Blend
1.	Coconut Oil	50%	2.9:1.3:1.0
	Groundnut Oil	50%	
2.	Coconut Oil	50%	3.5:1.0:2.0
	Soybean Oil	50%	
3.	Coconut Oil	50%	4.7:1.0:3.9
	Safflower Oil	50%	
4.	Coconut Oil	50%	2.6:1.1:1.0
	Sesame Oil	50%	
5.	Coconut Oil	50%	3.0:2.1:1.0
	Mustard Oil	50%	

women with abdominal obesity, coconut oil reduced waist circumference compared to soybean oil while also improving other health markers. Medium chain triglycerides have also been consistently shown to promote weight loss in both animal and human studies.

Despite the aforesaid multiple benefits of consuming coconut oil, it is often looked upon by an element of fear by the general public mainly due to historical myths and unwarranted adverse publicity. Coconut Oil has a typical taste and odour which restricts its consumption and it is here that the phenomenon of blending Coconut Oil with other conventional oils comes into the picture. Blending of Coconut Oil with other conventional oils will not only increase the consumption of indigenous Coconut Oil but also tend to bridge the gap between demand and supply of edible oils resulting in lower imports and conservation of foreign exchange.

Coconut Oil can be blended with conventional edible oils such as groundnut, soybean, safflower, sesame and mustard oil. The approximate contents of saturated, monounsaturated and polyunsaturated fatty acids of different oils and their corresponding S:M:P ratios of the individual oils and their blends with equal amounts of the other conventional oils are presented in Table-1 and Table-2 respectively.

Table-1: Saturated, Monounsaturated and Polyunsaturated Fatty Acid Content of Rice Bran Oil and Some Conventional Oils

OIL	SAFA	MUFA	PUFA	S : M : P
Coconut Oil	91	06	03	30.3:2.0:1.0
Groundnut Oil	21	43	36	1.0:2.0:1.7

Blending of Coconut Oil with other conventional oils increases the saturated fatty acid content and decreases the polyunsaturated content of the blends resulting in better antioxidant activity and enhancing the keeping quality of the blend. Increase in the quantum of lauric acid in the blend would not only improve the S:M:P ratio of the blends but also improves the antibiotic activity of the blends. Moreover, the saturated fatty acids in the blends are the medium chain acids from coconut oil which are converted into energy faster, are easier to digest and also help to boost body metabolism thereby contributing to alleviation of obesity. They also increase the body's absorption of antioxidants to promote health. Apart from this, blending of Coconut Oil with conventional oils according to regional preferences would also tend to improve the organoleptic properties of Coconut Oil as per regional preferences. However, much work is needed in this direction to educate the general public about the potential benefits of consumption of coconut oil as such or in blends with other conventional oils to dispel the negative myths and unwarranted adverse publicity associated with consumption of coconut oil. ■