

Role of flaxseeds in human health

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ABSTRACT

Flaxseed is not consumed as part of the regular diet in India even when flax plant has long been used as industrial oil and fibre crop. The plant is widely distributed throughout India, easily available and is very cheap. It has various medicinal properties. It is also classified as functional food. Hence, this crop can be utilized for various product formulations. Baked products especially bread and biscuits are gaining wide popularity as processed foods are quite common among all economic groups, in rural as well as urban population. So, by using this functional ingredient with medicinal and nutritional benefits in day today life we can utilize various health benefits at no cost addition to our budget.

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Flaxseed (*Linum usitatissimum*) has been used for centuries as a food ingredient with medicinal properties (Carter, 2008). During the eighth century, King Charlemagne passed laws requiring the consumption of flaxseed by his subjects to ensure their good health. Over more recent centuries, flaxseed use has grown across Europe, Africa and now to North America. In spite of all this history, flaxseed is still a mystery to many. It, along with soy, is just starting to gain in popularity in the world of nutrition.

Throughout history, flaxseed has been primarily used as a laxative. The seeds and oil of the plant also contain substances that promote good health. It is now widely used as a bakery ingredient and has gained popularity in North America (Fitzpatrick, 2007). It has prompted investigators to study the versatility, stability and acceptability of flaxseed in foods.

Flaxseed is classified as a functional food (Carter 1993; Lee 2006) because of its high fibre (27.3/100 g); protein (18.3/100 g); potassium (813 mg/100 g); linolenic acid, an n-3 fatty acid (22.8/100 g) (United States Department of Agriculture 2007); and lignan content (6.1 to 13.3 mg/g) (Johnsson *et al.*, 2000). Flaxseed can be incorporated into the diet through oil, milled or ground flaxseed or through eggs and meats produced by animals fed flax meal (Vaisey-Genser and Morris, 1997).

Flax is nature's miraculous cure for our heart, blood, joints, colon, aging, brain and even peace of mind!

Flaxseed is of two basic varieties brown and yellow or golden with most types having similar nutritional values and equal amount of short chain omega-3 fatty acid. Omega 3 is a polyunsaturated fatty acid which, as it passes through the digestive tract in the human body, it breaks down existing cholesterol and deposits a thin barrier to prevent its reformation. Omega 3 works to fight against the main cholesterol deposits that cause clotting of the blood. These clots then block blood vessels causing heart attacks or strokes if they reach the brain. The American Heart Association recommends a daily intake of 1000 mg. of Omega 3 for measurable benefits in heart health and vegetarians has to face problem to supply this fatty acid to the body.

Flaxseed is emerging as one of the key sources of phytochemicals in the functional food arena. In addition to being one of the richest sources of α -linolenic acid oil and lignans, flaxseed is an essential source of high-quality protein and soluble fibre and has considerable potential as a source of phenolic compounds. Flaxseed contains both soluble and insoluble fibre (about 28 g/100 g of flaxseed). About one third of fibre is soluble. Studies have found the fibre in flaxseed like found in oat bran and fruit pectin can help to lower cholesterol. Soluble fibre has been found to regulate blood sugar level. 1/3 insoluble fibre aids in digestion and preventing constipation. Flaxseed proteins are potent multi-functional ingredients for food formulation owing to their techno-functionalities, food preservation