



A REVIEW OVER THE BENEFITS OF FLAX SEEDS - A MAGICAL MEDICINE

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ABSTRACT

Ayurveda being one of the most ancient and yet alive tradition practiced widely in India and other countries that have a sound philosophical and experimental basis. *Ayurvedic* literature describes various herbs, minerals and fats which are essential for a healthy life and to cure various life threatening disorders. Flax seed is one of the medicinal foods that are described in *Ayurvedic* texts. Flax seeds also known as “linseeds” or “Alsi” are a rich source of micronutrients, dietary fiber, manganese, vitamin B, and the essential fatty acids alpha-linolenic acid also known as ALA or omega-3. The seeds come from flax, one of the oldest fiber crops in the world, known to have been cultivated in ancient Egypt and China. In *Ayurveda*, flax is used internally in habitual constipation, functional disorders of the colon resulting from the misuse of laxatives and irritable colon, as a demulcent preparation in gastritis and enteritis. Its oil is purgative, flowers are cardiogenic, externally the powdered seeds or the press cakes are used to assimilate inflammation, as an emollient in poultices for boils, carbuncles and other skin infections. The external application of its oil i.e. *Abhyanga* is *Vatanashaka*. A mixture of lime water and oil of flax is very useful in burns.

KEYWORDS: Flaxseeds, Lignans, Nutritional Quality, Ancient Medicine, Health Benefits, Alsi.

INTRODUCTION

Flax plant is erect and grows to about three feet in height, leaves gray-green, alternate, linear-lanceolate, numerous, flat, 2-3.5 cm long, 2-4 broad, acute to acuminate, gradually and slightly narrowed at base, glaucous; flowers borne in loose, terminal, leafy racemes or open cymes, on long erect pedicels, 2-4 cm long; sepals five, long-acuminate, ovate-oblong, 5-7mm long, entire, eglandular, 3-nerved, margins serrulate, about half as long as the petals; petals blue, or white or pale pink, 1 cm or more long, obovate; stigmas linear, decurrent along the inner side of styles; fruit a 5-celled capsule, on long erect pedicels, globose-ovoid, 7-10 mm high, about 7 mm across, surrounded by the persistent calyx, indehiscent; seeds up to 10 per capsule, yellow or light brown to dark brown, shining, flat, oval, one end rounded, the other pointed. It is native to Central Asia and Mediterranean Region. Now it is cultivated in many countries around the world. It is cultivated throughout India. The major phenolic constituents in the cotyledons and young shoots of *Linum sitatissimum* consist of (a) nine glycosides and esters of p-coumaric, caffeic, ferulic and sinapic acids and (b) six C-glycosides of O-glycoflavones. Substituted benzoic acid derivatives and flavonol glycosides were absent in both parts of the plant. Flaxseed, one of the underutilized oilseeds, is a

rich source of dietary fiber, omega-3 fatty acid and protein. Flaxseed powder contained 21.8% protein and 42.7% total dietary fiber, which upon roasting reduced to 20.3 and 40.50%, respectively. The flaxseeds contain 35-45% oil, which contains 9-10% of saturated fatty acids (palmitic and stearic), about 20% monounsaturated fatty acids (mainly oleic acid), and more than 70% alpha-linolenic fatty acids. The protein content in seeds of flax varies from 20-30%. Proteins of flaxseeds are limited by lysine, but are characterized by a high coefficient of digestibility (89.6%) and biological value (77.4%). The content of dietary fiber reaches 28% by weight of whole seed, with the ratio of soluble and insoluble fractions from 20:80 until 40:60. According to the content of B-group vitamins and some minerals flaxseeds are close to the crops. Vitamin E in the flaxseeds is mainly in the form of gamma-tocopherol (9.2 mg/100g of seeds). Flaxseed is the richest in the vegetable world source of lignans (up to 0.7-1.5% of dry weight of seed), among which prevails secoisolariciresinol diglucoside.

Nutritional Profile for Flaxseed

There are two main types of flaxseeds golden flaxseed and brown flaxseed. Their nutritional profiles are very similar and both contain the same number of short-chain omega-3 fatty acids. The American nutrition association highlighted the importance of this “neglected food”,

stating that flaxseed is not only “an excellent source of two fatty acids that are essential for human health- linoleic acid and alpha-linolenic acid” but also “an

excellent source of fiber and a good source of minerals and vitamins. Flaxseed is very low in cholesterol and sodium.

Nutritional Value of Flax Seed per 20g (2tsp)

Energy -54.7 kcal (DV=3%)	Carbohydrates – 3.0g (DV=1%)
Sugars – 0.2 g	Dietary fibre – 2.8g (DV=11%)
Fat-4.3g (DV=7%)	Saturated fat-0.4g (DV=2%)
Monounsaturated fat 0.8g	Polyunsaturated fat 2.9g
Protein -1.9g (DV=4%)	Thiamine (Vit B ₁) 0.2 mg (Dv=11%)
Riboflavin 0.0 mg	Niacin (Vit B ₃) 0.3 mg (Dv=2%)
Panthenic acid (B ₅) 0.1 mg (Dv=1%)	Vitamin B ₆ -0.0mg
Folate-8.9mcg (Dv=2%)	Vitamin C-0.1mg (Dv=0%)
Calcium-26.1mg (Dv=3%)	Iron-0.6mg (Dv=3%)
Magnesium – 40.2mg (Dv=10%)	Phosphorus 65.8mg (Dv=7%)
Potassium = 83.3 mg (Dv=2%)	Zinc-0.4mg (Dv=3%)

Source- Usda Nutrient Database

Flaxseeds are rich in:-

Lignane

Lignans are one of the major classes of phytoestrogens. They are estrogen-like chemical compounds with antioxidant qualities. Flaxseed is considered to be one of the best sources of lignans (0.3g per 100g). A study, published in the journal critical reviews in clinical laboratory sciences, concluded that “lignan-rich diets may be beneficial, particularly if consumed for life.

Fiber

Flaxseed is rich in both soluble fiber (dissolves in water). According to mayo clinic, “Soluble fiber dissolves with water and creates a gel like substance that helps to lower blood cholesterol and glucose levels”. Whereas insoluble fiber “absorbs water, which adds bulk to your digestive tract and helps to move things through quickly.

Omega-3 Fatty Acids

These are considered to be “good fats” that are beneficial for the heart. These essential acids are only obtainable by eating the right foods; the human body is not able to produce them.

Also, flaxseeds contain a good amount of vitamin B6, Iron, Potassium, copper, zinc.

Few Benefits of Flax Seeds

High in Fiber, But Low in Carbohydrates

One of the most extraordinary benefits of flax seeds is that they contain high levels of mucilage gum content. Mucilage is a gel forming fiber that is water soluble and has incredible benefits on the intestinal tract. The mucilage can keep food in the stomach from emptying too quickly into the small intestine which can increase nutrient absorption. Also flax seed is extremely high in both soluble and insoluble fiber which can support colon detoxification, fat loss and reduce sugar cravings.

Healthy Skin and Hair

If you want healthier skin, hair and nails, then consider adding 2 tsp of flax seeds to your smoothie or 1 tsp of flax seed oil to your daily routine. The ALA fats in flax

seeds benefits the skin and hair by providing essential fats as well as b-vitamins which can help reduce dryness and flakiness. It can also improve symptoms of ache, rosacea, and eczema. This is also applies to eye health as flax can reduce the eye syndrome flax seed oil is another great option since it has an even higher Concentration of healthy fats. You can take 1-2 tsp internally to hydrate skin and hair. It can also be mixed with essential oils and used as a natural skin moisturizer.

Weight Loss

A study published in the journal of nutrition found that flax seeds and walnuts may improve obesity and support weight loss. Since flax is full of healthy fats and fiber. It will help you feel satisfied longer so you will eat far fewer calories overall which may lead to weight loss. ALA fats may also help reduce inflammation. This is important for, weight loss in that an inflamed body will tend to hold on to excess weight. Add a couple of teaspoons of ground flaxseeds to soups, salads or smoothies as part of your weight loss plan.

Lower Cholesterol

The journal of nutrition and metabolism found that adding flax seeds into your diet can naturally reduce cholesterol levels. The soluble fiber content of flax seeds trap fat and cholesterol in the digestive system, so that it is unable to be absorbed. Soluble fiber also traps bile, which is made from cholesterol in the gall bladder. The bile is then excreted through the digestive system, forcing the body to making more, using up excess cholesterol in the blood and lowering cholesterol overall.

Inflammation

Two components in flax seed, ALA and lignans, may reduce the inflammation that accompanies certain illnesses (such as parkinson’s disease and asthma) by helping block the release of certain pro-inflammatory agents (Fitzpatrick’s). ALA has been shown to decrease inflammatory reactions in humans. And studies in animals have found that lignans can decrease levels of

several pro-inflammatory agents. Reducing inflammation associated with plaque build up in the arteries may be another way flax seed helps prevent heart attack and strokes. The flax seed oil having higher alpha- linolenic acid content produced a greater inhibition of paw edema suggesting that modulation of the course of inflammatory disorders may be achieved by altering the eicosanoid precursor. (i. e poly unsaturated fatty acids PUFA) availability through dietary manipulation.

Flaxseeds Are Gluten Free

Using flax is a great way to naturally replace gluten-containing grains which are inflammatory where flax is anti-inflammatory so, flax seeds are great for those who have celiac disease or have a gluten-sensitivity. They may also be a good alternative to omega-3 fats in fish for people with a seafood allergy. Another great aspect of flax being gluten free is that it can be used as a grain-free option is cooking.

Laxation Activity and Digestive Health

Flax seed whether taken orally or baked in a bakery product would effect. If flax seeds are consumed in the quantity of 15g daily from a proprietary flax fiber supplement for 2 weeks, this change dietary habits, definitely helps person in improving there laxative difficulties. One can also take 1-3 tbsp of flax seed oil in carrot juice to help naturally in constipation. May be the biggest flax seed benefits come from its ability to promote digestive health. The ALA in flax can help protect the living of the digestive tract and maintain GIT health. It has been shown to be beneficial for people suffering from crohn's disease or other digestive ailments, as it can help reduce gut inflammation. Flax is also very high in soluble and insoluble fiber which can also improve health and is one of the highest magnesium foods in world. Two table spoons of flaxseeds contains about 5g of fiber or ¼ of the RDA. The fiber found in flaxseeds provides food for friendly bacteria in colon that can help cleanse waste from your system.

Flax Seeds for Cancer

Flax seed benefits have been proven time and time again and even including fighting breast, prostate, ovarian and colon cancer. A study published in the journal of clinical cancer research discovered that consuming flax seed may decrease the risk of breast cancer. The three lignans found in flaxseeds can be converted by intestinal bacteria into enterolactone and enterodiol which naturally balance hormones and that may be the reason flax seed reduce the risk of breast cancer.

CONCLUSION

Flaxseed is establishing importance in the world's food chain as a functional food. Functional food can be defined as the food or food ingredients that may provide physiological benefits and helps in preventing and/or curing of diseases. Presently, flaxseed has new prospects as functional food because of consumers growing interest for food with superb health benefits. Owing to its excellent nutritional profile and potential health benefits,

it has become an attractive ingredients in the diets specially designed for specific health benefits. ALA is one of the essential poly unsaturated fatty acid and reported to exhibit anti-inflammatory, anti-thrombotic and anti-arrhythmic properties. Nutritionists all over the world suggest incorporation of omega 3 fatty acid source in the diet. Flaxseed serves as the best omega 3 fatty acid source to the non-fish eaters. Edible flaxseed products include the whole flax seed, ground meal and extracted oil or mucilage. These products have been proposed as nutritional additives in the preparation of a number of dietary items such as baked cereal products, ready to eat cereals, fiber bars, salad toppings, meat extenders, Bread, muffins and spaghetti. In spite of the multiple clinical evidences of flaxseeds, people are still unaware about its nutritional as well as therapeutic benefits.

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