

Flax seed

an amazing medicinal plant

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Flax seed (Linum usitatissimum L.) is an annual erect type plant and occupies 4th position among the oil providing seed crops grown in Madhya Pradesh. It is leading linseed producing state. Linseed is highly nutritious and a good source of complete protein. It contains low in LDL (lipo-protein) or bad cholesterol and rich in Gamma (γ) linolenic acid, which minimize the severity of diabetes by stabilizing blood-sugar levels. The α -Linolenic Acid (ALA), an omega-3 fatty acid present in flax seeds which our body cannot make so it is essential to get from our diet. In general its seeds content 33 to 47% oil used for both edible and industrial purpose because of its quick drying property. Flax fiber is soft, lustrous and flexible; bundles of fiber have the appearance of blonde hair; hence the description 'flaxen'.

Keywords: Flax, Medicinal Plant, Seed

FLAX seed (*Linum usitatissimum* L.) also known as linseed, is a member of the genus *Linum* in the family Linaceae placed at fourth position among the oilseed crops grown in India.

Flax plant and seed

Linseed is an important oilseed crop in India and occupies 468.0 thousand ha with productivity of 349 kg/ha. In India, Madhya Pradesh leads in yield and acreage, followed by Uttar Pradesh, Maharashtra, Himachal Pradesh, Bihar, Rajasthan, Karnataka and West Bengal also grow linseed in large areas. Madhya Pradesh and Uttar Pradesh together contribute to the national linseed production to the extent of about 70%. It is grown in the *rabi*, from September-October to February-March, which can be grown on different kinds of soils, except the sandy and badly drained heavy clays or clay loams. It does well on clay loams, deep clayey black soils of central and peninsular India and on the alluvium loams of the Indo-Gangetic plains.



Flax plant and seed

There are some improved varieties developed for linseed oil production viz. Alsi-32, Shweta, Padmini, Shubra, Garima, Jawahar-1, Jawahar-23, Neelam, Kartik etc. which contain about 42 to 44% of oil content. The dual purpose varieties of flax (for both oil and fibre production) are Meera, Nagarkot, Parvati, Rashmi, Shikha and Gaurav.

ECONOMIC VALUES

Seed oil

Linseed occupies a greater

importance among oilseeds as its each and every part is endowed with commercial and medicinal characteristics. In India, it is grown mainly for seeds, used for extracting oil. The oil content of the seed varies from 33 to 47% which is used for both edible and industrial purpose. The linseed oil is available in various varieties like cold pressed, alkali refined, sun-bleached, sun-thickened, polymerized etc. Because of its quick drying property, it is used for the preparation of paints and varnishes,

oilcloth, soap, waterproof fabrics and linoleum and as printing ink, pad ink, soaps, patent leather etc.

The linseed oil acts as a great ingredient in putty, which is a sealant for glass windows. Along with a thickened paste of chalk powder, it helps in the hardening of the glass windows to be painted over easily. Linseed oil is a great wood finish as it immerses itself in the thick as well as thin pores of the wood leaving it with a shine. Its deep absorption inside the wood enables it to work as a strong resistant to denting and scratches. It is also used in the gun stocks as a finish and acts as a protective coating as well.

Stem fibre

Linseed straw produces fibre of good quality. Flax fiber is extracted from the bast or skin of the stem of the flax plant. Flax fiber is soft, lustrous and flexible, bundles of fiber have the appearance of blonde hair, hence the description 'flaxen'. It is stronger than cotton fiber but less elastic. The best grades are used for manufacturing of linen fabrics such as damasks, lace and sheeting.

Coarser grades are used for the manufacturing of twine and rope, and historically for canvas and webbing equipment. Flax fiber is also a raw material for the high-quality paper industry for the use of printed bank notes and rolling paper for cigarettes and tea bags, insulating material, rugs. That is why it is also known as plastic crop.

Oil-cake

Linseed-cake is a very good manure and animal feed. The oil-cake left after the oil is pressed out is a most valuable feeding cake, perhaps the most favourite cattle feed. It is good in taste and contains 36 % protein, 85 % of which is digestible. It is fed to both milch and fattening animals. It is also used as organic manure. It contains about 5 % nitrogen, 1.4 % phosphorus and 1.8 % potash.

MEDICINAL VALUES

Linseed is highly nutritious and a good source of complete protein (all 8 essential amino acids), linolenic acid (an essential poly unsaturated

omega-3 fatty acid), *glycerides*, carbohydrates, vitamins and minerals (sodium potassium, calcium, magnesium, iron, phosphorous, etc), some wax like substances, phosphates and sugar. One hundred grams of ground flax seed supplies about 450 calories, 41 g of fat, 28 g of fiber, and 20 g of protein. Linseed is best herbal source of omega-3 and omega-6 fatty acids, cholesterol lowering cardiovascular benefits by affecting prostoglandins and leukotriens related to blood clotting and inflammatory disorder like rheumatoid arthritis.

The seeds of linseed are low in LDL (lipo-protein) or bad cholesterol and rich in Gamma linolenic acid. Use of its seeds may lower cholesterol levels and minimize the severity of diabetes by stabilizing blood-sugar levels. Gamma linolenic acid found in concentrated form in flax seed showed astounding effect in diabetes by normalizing the faulty fatty acid metabolism responsible for diabetics. Linseed antibiotic Linatine found in seed. Linatine cure diseases for which no other medicine is effective.

Flax seed are edible as sprouts or roasted. Linseed or flax seeds contain high levels of dietary fibers and lignans, micronutrients and omega-3 fatty acid. Seeds are good source of fibre, helps in digestion and prevent constipation therefore it is bowel clearing fibre and helps in suppressing hunger. One of the main components of flax is lignan (antioxidant), plant based oestrogen as well as antioxidants (flax contains up to 800 times more lignans than other plant foods contain). Linseed is sometimes tried for cancer because it is broken down by the body into chemicals called 'lignans' which are similar to the female hormone oestrogen - so similar, in fact, that they compete with oestrogen for a part in certain chemical reactions. As a result, natural estrogens seem to become less powerful in the body. Some researchers believe that lignans may be able to slow down the progress of certain breast cancers, prostate cancers and other types of cancers that need estrogen to thrive.

Lignans are unique fiber-related polyphenols that provide us with

antioxidant benefits for anti-aging, hormone balance and cellular health. The lignans in the flax have been beneficial for menopausal women. It can be used as an alternative to hormone replacement therapy because lignans do have oestrogenic properties. These properties may also help reduce the risk of osteoporosis. It can even help menstruating women by maintaining cycle regularity. The α -Linolenic Acid (ALA), an omega-3 fatty acid present in flax seeds which our body cannot make so it is essential to get from our diet. ALA benefits the skin and hair by providing essential fats as well as β -vitamins which reduces the dryness and flakiness of skin by taking 1 to 2 tablespoon internally to hydrate skin and hair. It has a very good anti-inflammatory properties so can be mixed with essential oils and used as a natural skin moisturizer, for acne, burns, boils, eczema, psoriasis and to soothe inflammation. Essential fatty acids present in linseed helps in nourishment of dry or brittle nails, controls cracking or splitting of nails. It has ability to reduce melanoma tumors.

In cases of lupus, linseed oil is useful as it reduces inflammation in the joints, skin and kidneys and lower down the cholesterol levels that may be elevated because of lupus disease. Omega-3 fatty acids present in linseed oil helps to boost the absorption of iodine mineral which is essential to overcome from the painful fibrocystic breasts.

SUMMARY

Flax being a bearer of so many amazing medicinal properties, we should include the linseed or flax in our daily diet. It can be utilized in ground form and added in cakes, cookies or breads. You can use them as sprouts or roasted form. Powder of roasted linseed can also sprinkle on salad, vegetables and soup gives a different taste to the food.

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