

Flax Nutrition and Quality

by Karlene Karst

All flax is not created equal. Here's a guide to judging quality and suitability of use for this highly beneficial plant.

As flax continues to gain popularity in the market place, it is easy to see why this traditional grain is quickly becoming the newest super food to grace the shelves of grocery and health food stores. Flax seed is a popular source of the omega-3 essential fatty acid, which is known for its health benefits for the heart, brain, skin, hair, nails, and joints. Flax seed contains large quantities of soluble and insoluble dietary fiber, which are important for digestion, bowel function, and regularity.

As well, flax seed is the best source of lignans, which are phytoestrogens (plant-based estrogens) important for maintaining healthy bones, normal heart function, and hormonal balance. Early research shows that lignans may also help reduce the risk of certain forms of cancer, particularly hormone-sensitive cancers of the breast and colon. Flax seed also contains vitamins, minerals, and protein – just a few more of the nutritional reasons flax should be the food of choice.

However, not all flax is equal in terms of its quality; therefore it is important to be educated on how to choose a quality flax product. An educated consumer is a wise consumer. Most health food retailers have the knowledge to answer questions related to the quality of flax, therefore consumers should utilize the expertise and value a health food store can bring.

The Great Forms of Flax

To receive the numerous health benefits flax has to offer, it can be added to

the diet in many different ways. Whole seed, milled/ground seed, defatted ground flax, bottled oil, and softgels, are all convenient and healthful options when choosing flax. However it is important to note that not all forms of flax offer the same nutrition.

Milled flax seed has become a popular dietary supplement providing omega-3s, lignans and protein. Whole flax seeds contain an outer layer that is very difficult to digest unless the seeds are thoroughly chewed.

Therefore when whole flax seeds are consumed they pass right through the digestive system, relatively in tact. Milling (grinding) the seed makes it more digestible. It can be readily absorbed by the body, providing the full range of nutrition that

flax has to offer. If whole flax seeds are purchased they can be ground with a coffee grinder prior to being consumed.

Defatted ground flax is a relatively new form of flax recommended primarily for its fiber and lignan profile. Defatted ground flax is sometimes referred to as meal, powder or flour because it is finely ground and has the majority of the oil removed, resulting in lower moisture content than milled flax.



Gram per gram, defatted ground flax offers a higher lignan, protein and fiber content and a lower calorie profile. It can be incorporated into foods in the same way as traditional milled flax, with the added benefit that it can be used in cooking and baking. Defatted ground flax can also be used as an alternative to conventional fiber supplements.

Flax oil is a rich source of the omega-3 fatty acid alpha linolenic acid (ALA). Flax oil can be taken by the spoonful, or

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added to salad dressings, blender drinks, yogurt or cereal, but cannot be used for cooking as the high heat will destroy the omega-3 fats. Many flax lovers enjoy the light nutty taste that natural flax oil has to offer, but for those who don't, flax oil is also available in easy to swallow softgel capsules.

It is important to remember that the fiber, protein and lignans will not be found in the oil, but only in the milled

seed and defatted ground flax. However, some manufacturers offer a high-lignan flax oil, in which the particulate matter containing lignans has been added back into the oil. If consumers are specifically interested in the benefits of lignans, milled seed or defatted ground flax contain significantly higher levels of lignans than high-lignan flax oil.

Quality Made Easy

A knowledgeable health food retailer is important in guiding consumers towards the supplement that is right for them and their health concerns. There are many different things to consider when choosing a quality flax product, including where and how it is grown, processed and stored, whether it has organic certification, and what quality control measures have been taken to ensure freshness and quality. The following are some of the questions that could be asked when purchasing flax.

✓ **Where is this flax grown?**

The Canadian prairies offer a pristine growing environment for oilseed crops such as flax. The cooler northern climate results in higher levels of the beneficial omega-3 alpha linolenic acid (ALA). Temperature, moisture conditions and when planting and harvest occur can all affect quality.

✓ **Is this flax oil cold pressed?**

The terms cold pressed and expeller pressed are often used interchangeably. Expeller pressing is a mechanical process that does not utilize solvents such as hexane or other harsh chemicals or high levels of external heat (hence the term “cold” pressed). This results in a higher quality more stable oil. Natural expeller pressing is an important criterion for judging flax quality.

✓ **Is this flax certified organic?**

There are numerous organic certifying bodies including Quality Assurance International and the Organic Crop Improvement Association. They ensure that every step in the planting, growing, processing, storing, packaging and transporting of organic flax is done in accordance with organic standards. A laboratory can't tell whether or not a product is organic, so documenting ev-

ery step is essential. This organic certification paper trail” proves that the flax has met all the standards of the certifying organization.

✓ **Was this flax processed in a GMP-certified facility?**

Good manufacturing practices (GMPs) are measures that ensure an effective overall approach to product quality control and risk management. They do so by setting appropriate standards and practices regarding product testing, manufacturing, storage, handling and distribution. The goal of GMPs is to provide safe, quality products. Pharmaceutical-level GMP has more stringent quality standards than food-level GMP. GMP certification gives the consumer confidence in the manufacturing facility, which ultimately affects the quality of the end product.

✓ **Is this flax genetically modified?**

A genetically engineered strain of flax has been developed; therefore it is important to confirm that the flax being purchased is truly non-GE. A test developed by the Saskatchewan Research Council (SRC) in Canada can determine the GE status of flax. The test is done using a probe that has DNA markers from the GE flax. Few suppliers utilize DNA testing, so being knowledgeable about the flax supplier will confirm whether or not it can be scientifically proven that the flax variety is truly non-GE.

✓ **Has this flax been tested for quality parameters?**

A third party laboratory should be testing flax for a variety of quality parameters, to determine microbial levels, the presence or absence of pesticides, herbicides and heavy metals (such as mercury, lead and cadmium) and peroxide. Peroxide values are an important indicator of oil quality and freshness. The omega-3 polyunsaturated fatty acids found in flax are very reactive to oxygen and can go rancid quickly. High peroxide values are an indicator of oxidation. Anisidine level is another indicator of quality flax. Although no established standards exists, it is still a useful indicator of secondary oxidation. Someone purchasing flax oil with high anisidine levels should question what kind of processing that oil has been subjected to, as

high levels usually indicate harsh or excessive processing. The test results are reported in a certificate of analysis that should be sent to the manufacturer with every shipment. Testing for these quality control measures ensures a more stable product with a longer shelf life and ensures that no harmful toxins are present.

✓ **Are these milled flax seeds vacuum sealed?**

Because of the difficulty of digesting whole flax, it is often milled before packaging. Milled flax seeds should be vacuum sealed to prevent exposure to oxygen, which will cause the oil in the seed to turn rancid). The package should have a zip-lock closure so it can be resealed after opening to preserve the flavor and nutritional components.

Golden and Brown Flax

Industry marketing may have led some consumers to believe that golden flax seeds are better than brown seeds. It is important to know there is minimal difference in the nutritional profile or quality between golden and brown flax. The Flax Council of Canada says that based on previous analysis of both varieties, the effect of seed color is small. Nutritional equality, not color is the important factor. Both varieties offer a rich omega-3 fatty acid content, lignans, fiber and protein.

Quality Solved

Not all flax is equal, and having the right information is vital for choosing the best flax. Educated consumers asking the right questions will keep manufacturers and suppliers accountable and have a positive impact on the quality of flax available on the market.

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