Hempseed Oil: A Smart Start

Hemp foods, mothers and healthy "hemp babies"
By Kelly Smith

By now we all know that hemp seed oil is a wonderfully unique oil. Approximately 80% is polyunsaturated fat -- the highest of any vegetable oil. Specifically, it contains the essential fatty acids (EFAs) linoleic acid (omega 6) and alpha linolenic acid (omega 3). These EFAs cannot be synthesized by the body and must be obtained from our diets. Hemp seed oil also contains gamma linolenic acid (GLA) to which omega 6 is naturally converted. No other single source oil has this ideal combination of EFAs!
The health benefits of EFAs have been well documented and individuals can reap these benefits with a daily tablespoon of hemp seed oil. Furthermore, there are a few population groups where EFAs are extremely important for growth and maintenance of good health. Two of these are pregnant women and babies.

In the developing fetus the brain and eyes have a tremendous demand for EFAs. Indeed, fatty acid nutrition is crucial to developing full cognitive and visual potential and deterring common conditions such as diabetes, cardiovascular disease, retinitis, poor night vision and dyslexia. During gestation, the fetal brain may grow as many as 250,000 nerve cells each minute and will eventually manufacture over 100 billion neurons. A remarkable 70% of total brains cells that will last our lifetime have divided before birth. EFA’s -- particularly DHA which is a derivative of omega 3 -- are essential for this normal brain development.

Consequently, preterm infants may run a greater risk of visual and cognitive problems because they miss the final weeks of gestation when the retina concentrates the EFAs and the brain has a critical need.
Unborn babies are completely reliant on the mother for their EFA supply. It is therefore very important for the mother to ensure an adequate intake of EFAs both for herself and the baby. Studies show that mothers with low EFA levels are at greater risk for developing obstetric complications. Low EFA levels may also contribute to post partum depression. Because a developing baby takes the fatty acids it needs from the mother's blood supply, many women's stores decline during pregnancy and get lower with each successive child. Researchers suggest a link between such deficiency and depression, which may help explain the increased risk of depression among new mothers.

Once the baby is born the high demand for EFAs continues and this is ideally supplied with breast milk. Breast milk is the finest form of nutrition for a developing infant brain. It contains a vast array of fatty acids including ALA, GLA, DHA among others. Many studies show that breast fed infants appear to develop better visual acuity and higher IQ's. Once again, it is important for the mother to maintain adequate levels of EFAs in her diet to supply this demanding baby. Up until recently, formulas contained little or no EFAs. However, based on the continual research, manufacturers are beginning to add some of these important EFAs to their
As the hemp industry grows we will see more and more "hemp babies" and these children will be the best confirmation of the benefits of hemp seed oil and EFA nutrition.

Ensuring optimal amounts of EFAs with hempseed oil in pregnant and lactating women can go a long way toward giving our next generation the best chances for health and success.

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References:


The Nutritional Properties of Hempseed Oil

By Kelley Fitzpatrick

Growing Interest in "Natural" Health Care

Health professionals agree that poor nutrition may play an important role in diseases common in Western society such as high blood pressure, heart disease, diabetes, obesity and cancer. Genetic defects in the processing of dietary nutrients also contribute to the onset of several health-related disorders. Currently there is a growing desire by consumers to assume more responsibility for their overall health. For example, dietary concerns of an aging population have moved away from preventing deficiency
diseases to the prevention of chronic disease.

Consumers are becoming more aware of the **relationship between diet and disease** and are increasing more interested in "natural" rather than "synthetic" medications. In recent years, there has been a growing consumer dissatisfaction and mistrust of drugs prescribed by physicians. Consumers, health care practitioners and government agencies are interested in reducing health care costs through lowering the risk of disease. It has been estimated that every $5 spent on preventive care saves $30 in medical care. Of greatest significance to this "mega-trend" is the aging of the "baby boomers" -- one person turns fifty years of age every seven seconds in the U.S.

These demographic and societal trends have led to increased interest in what are referred to in Canada as "nutraceuticals" and "functional foods". Health Canada (1996) defines a **nutraceutical** as a product that has been isolated or purified from foods and generally sold in medicinal forms not usually associated with food. They have demonstrated to have a physiological benefit or provide protection against chronic disease. According to Health Canada (1996), a functional food is similar in appearance to a conventional food and is consumed as part of the usual
diet. These foods have demonstrated physiological benefits, and/or reduce the risk of chronic disease beyond basic nutritional functions.

There are many different sources of nutraceuticals that have shown promise in disease reduction, one of the most encouraging being the **Essential Fatty Acids (EFAs)**. The oil from hempseed is gaining widespread approval by the nutrition community because it contains a very well balanced mixture of EFA, and may just be one of the most effective dietary supplements for the maintenance of optimal health.

**The Fatty Acid Profile of Hempseed Oil is Unique**

**Hempseed Oil** is produced by pressing the hempseed. The oil can be eaten on its own, blended into other food and bodycare products or used as a lubricant.

**Hempseed Oil** is truly unique. Approximately 80 per cent of the oil is comprised of polyunsaturated fatty acids. Specifically, **Hempseed Oil** contains the EFAs called linolenic acid (LA -- an "omega-6" EFA) and alpha linolenic acid (ALA -- an "omega-3" EFA). These EFAs cannot be synthesized by the body and must be obtained from our diets. **Hempseed Oil** is also unique in that it is a rare plant source of the omega-6 EFA, gamma linolenic acid (GLA). Modern day diets and
sluggish enzyme activity often impair the synthesis of GLA in the body and which cause GLA deficiency.

**Fatty Acid Profile of Hempseed Oil in Comparison to Other Plant Oils**

<table>
<thead>
<tr>
<th>Oil</th>
<th>SATURATED</th>
<th>LINOLEIC</th>
<th>GAMMA LINOLENIC</th>
<th>ALPHA LINOLENIC</th>
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</thead>
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<td>56.0%</td>
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<tr>
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<td>9.0%</td>
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<td>58.0%</td>
</tr>
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</table>

**Saturated Fatty Acids (SFA) -- Low in Hempseed Oil**

High levels of dietary SFA are one of the primary factors which increase blood cholesterol levels, a major risk factor for coronary heart disease. Hempseed Oil contains only 8.0% total SFAs.

**Polyunsaturated Fatty Acids (PUFA) -- Well-balanced in Hempseed Oil**

Hempseed Oil contains the highest total amount of the essential PUFAs of both the omega-6 (LA & GLA) and the omega-3 (ALA) fatty acid families in a three to one ratio that provides an Ideal Nutritional Balance.

LA and ALA are important structural components of the membranes that surround all
body cells, providing stability and controlling the movement of all substances into and out of cells. LA and ALA can also lower blood cholesterol.

LA is converted in the body into GLA, the synthesis which as indicated earlier, can be negatively effected by many factors. ALA is converted in the body into a PUFA called EICOSAPENTAENOIC ACID (EPA). GLA and EPA have important physiological effects (See Figure 1).

Figure 1:

Chemical Messengers from PUFAs Control Body Functions

GLA, through its synthesis to DGLA and ALA through conversion to EPA, are further metabolized in our bodies to eicosanoids, short-lived, powerful hormone-like chemicals that regulate all cellular function. Many health problems and their symptoms are related to a deficiency or imbalance of EFAs and eicosanoids.

- DGLA, AA & EPA are converted into eicosanoids which control a number of body functions
including blood clotting; inflammation; haemorrhage; constriction and dilation of the blood vessels; blood pressure and immune function.

- Eicosanoids derived from AA are pro-inflammatory; cause constriction of blood vessels; induce inflammation and stimulate blood clotting. DGLA & EPA (from GLA & ALA) reduce the synthesis of these messengers.

- DGLA derived eicosanoids reduce inflammation; widen blood vessels; reduce the tendency for blood platelets to clot; help to lower blood pressure; and lower blood and body cholesterol levels.

- Eicosanoids derived from EPA also help to reduce inflammation; widen blood vessels; and reduce the tendency for blood platelets to clot.

Because of its unique levels of LA, GLA and ALA the consumption of Hempseed Oil results in the production of eicosanoids with beneficial effects.

Clinical Research on EFAs

Heart disease and stroke are among the top causes of death in Canadians. EFAs have been shown to reduce the risk of these diseases by lowering
blood cholesterol and blood pressure and reducing blood platelet coagulation (clotting). These fatty acids can also reduce inflammation, making them beneficial for individuals suffering from osteoarthritis, rheumatoid arthritis, eczema and psoriasis.

Research with EFA supplements of GLA and ALA has shown promise in a number of areas due in part to the synthesis of eicosanoids with beneficial functions. This research includes the following disorders:

- Cancer
- Diabetes
- High Blood Cholesterol and Coronary Heart Disease
- High Blood Pressure
- Rheumatoid Arthritis & Inflammation
- Skin Conditions - Atopic Dermatitis, Eczema, Psoriasis

Because Hempseed Oil contains a well balanced mixture of EFA, it is one of the most effective dietary supplements for the maintenance of optimal eicosanoid metabolism. In addition, Hempseed Oil contains plant sterols that have been shown to reduce the risk of prostate and colon cancer and to lower blood cholesterol levels.

The importance of EFA balance

The ratio of omega-6:omega-3 EFAs in vegetable oils is a
hotly debated topic among nutritionist. Omega-6 and omega-3 EFAs work synergistically at the cellular level to ensure effective eicosanoid synthesis. An excess of either can cause an imbalance in eicosanoid metabolism. An excess intake of omega-3 EFAs can be dangerous for people with clotting disorders or those on blood thinners. Excess intakes of omega-6 EFAs can also cause problems. The point being that dietary EFA balance is important. Leading experts such as the Scientific Review Committee of Health Canada and the World Health Organization have recommended that the ratio of intake of omega-6 PUFAs to omega-3 PUFAs should range from 4:1 to 10:1. Hempseed Oil with its 3:1 ratio is the closest naturally-occurring oil to this ideal range. Put simply, Hempseed Oil contains three omega-6 EFAs for each omega-3 EFAs. It also contains about 2% GLA, giving omega-6 conversion an advantage related to eicosanoid synthesis.

So what does this mean for daily intakes? Nutritionists generally recommend that, for EFAs to provide optimal cell function, daily requirements should range from 7 to 11 g of LA and from 2 to 3.5 g of ALA. This can be obtained from one tablespoon of Hempseed Oil. However, individuals who consume a diet high in SFAs or trans fatty acids will require more, as will people who are overweight or under a great
deal of stress.

Hempseed Oil as an EFA supplement

Hemp is one of our oldest and most versatile plants and has been documented for various uses as far back as early as the 28th century BC. Hemp belongs to the genus Cannabis sativa and has been cultivated for thousands of years in temperate climates as a source of fibre, edible seeds, edible oil, a lubricant and as a fuel. Hemp production has recently experienced a revival as clothing from hemp fibre gains in popularity and the health benefits of the oil become better recognized.

**Hempseed Oil** does not have any psychoactivity because it does not contain tetrahydrocannabinol, a sticky resin produced primarily in the flowering tops of female plants before the seeds mature. Health Canada stipulates that all hempseed products must contain less than 10 parts per million of THC and every hemp crop in Canada is tested to ensure these standards are maintained.

Kelley Fitzpatrick is the President of the Saskatchewan Nutraceutical Network. She can be reached at: info@nutranet.org (see also Upcoming Events in this issue)

Book Review
The long awaited hempseed reference/cookbook by "The most hemp obsessed man in America" is an attractively packaged labour of love presenting hemp as a tasty nutraceutical.

Rose lays out humanity's long hemp heritage with respectful humility and credible science to back up otherwise vague industry claims of the nutritional powerhouse of hemp; Brigitte Mars paints a delicious mural of over 100 thoughtful recipes that show the kitchen worthy merits of the rebel seed -- just how yummy it can when combined with other foods -- a hemp central diet is in not implied, although it is possible.

The Hempnut H&C focuses entirely on the goodness of hemp, and presents a good case for taking a restorative lunch break from the American hemp civil war. General McCaffrey's old school allergy to cannabis seems more like the barking of a cranky old guard dog that may have missed a few distemper shots.

Once the DEA does the math and hemp rolls into America again, this book will become a valuable access tool for the hemp curious restaurant owner, or post Clinton Vegetarian crusader family. Or anyone who can get at a pail of dehulled hempseed -- appreciation of Essential Fatty
Acids begins at home.

As a health food hero who transformed tofu from ersatz hamburger into upscale California cuisine in the 80's, Rose sees a big hemp food wave coming on the horizon and is swimming out to meet it headfirst. He welcomes strong swimmers to join him.

Rose bases his enthusiasm for hemp on favourable early market signals and a soyaman's knack for novelty and quality. Rose's firm has introduced many basic hemp foods to Cool America and Rose himself remains proactive as board director on many of the leading Industrial Hemp food organisations in America and abroad.

He is infamous as the dude who trademarked HempNut, and his hard fought for ™ is generously sprinkled throughout the entire book like territorial grizzly bear scratch marks to alert anyone still locked in casual copyright mode to beware. Mr. Rose has claimed legal title to this familiar trade phrases and does not suffer industrial bandits stealing his thunder -- why should he?

Hempnut Inc and the American hemp industry he plays such a lion's role in renders Richard Rose an enduring character in the karmic profile of hemp foods in America. The embargo impact on edible hempseed trading still shapes the response of offshore seed suppliers as
they bargain for favour with US buyers as Uncle Barry irons out domestic cultivation priorities -- organic dehulled hempseed is presently an eco luxury product in America, with consumer shelf price almost at $7 US per pound. Still, Cool America shops for hemp with hope and confidence and with the Hempnut™ Health and Cookbook, they are well set to enjoy.

Rose includes a photo essay by RC Clarke (International Hemp Association) of a traditional contemporary hempseed food kitchen in Yunnan Province, People's Republic of China. Here, we see eternal hempseed by hand in a hollow tree stump and the sweet white paste served at a communal table. Hemp is good eatin' anywhere.

Hempseed Considered Effective Medication against Tuberculosis in Prewar Czechoslovakia

**Introduction of Importance of Hemp Seed in the therapy of Tuberculosis, by Josef Sirak, presented December 10th, 1954, at the occasion of a scientific conference at Palacky University at Olomouc, as a part of the topic "Hemp Seed as a treatment."

During the thirties and forties, in the absence of antibiotics, chemotherapeutics and surgical methods, tuberculosis was rather effectively treated with therapeutic diet,
developed by a team of medical doctors in a sanatorium for patients, suffering with tuberculosis at Jince.

The concept was based on two assumptions:

1) In order to fight tuberculosis effectively, nutrition must supply building material for renewal of tissues, destroyed by the disease, be it lungs, other organs or muscles.

2) Whole diet must support effective function of liver, thus assuring proper assimilation and utilisation of nutrients.

In addition to selection of nutritious and well-balanced dietary components, attention was paid to preparation of the food; namely assuring that the nutrients would not be denaturalised, coagulated or rancid due to improper storage or cooking methods.

Two components were considered most important and irreplaceable in the whole diet; oat flakes and specially processed extract of hempseed.

It was hempseed, which attracted the author's attention. It is high in protein (33.0%) and its main protein type, EDESTINE, is well known for its wealth of enzymes and unusual amino acid composition. Most valuable is amino acid Arginine, which is considered essential for formation and growth of new tissue. While other sources of
plant protein for instance soybean protein, contains 6.8% of Arginine, edestine contains approximately 3 times as much Arginine -- 19.0%. This property is of great importance in balancing of diets, requiring high levels of Arginine.

Before nationalisation of Czech Pharmaceutical Industry in 1948, an extract of hemp seed, EDEZYME, was available on the market. Today it is produced as a "home remedy" according to a following recipe:

Ground hempseed is mixed with warm milk (60-80 degrees C.) and maintained at this temperature for at least half an hour. Keeping the product in water bath, while constantly mixing, prevents coagulation of edestin on the bottom of the container. Finished product must be pressed and filtered to separate the indigestible and irritating outer layer of seeds from the colloid solution. One dose prepared from 3/8 of litre of milk and 50-80 grams of hempseed should be consumed by the patient every second day.

Inclusion of edezym, oat flakes, and other, more common dietary components, was tested on two groups of children (16+ 10), suffering from tuberculosis in prewar and war period. Though no other medication was used and food was rather scarce, all children were considered successfully treated or
improved at the end of the treatment period. Dietary and/or medical properties of hempseed deserve our full attention.

Hemp Report has a partial ms (17 pages) of this study available; unfortunately 1) references are absent and 2) we have no electronic version to email you. Contact us at: hcfr@sasktel.net to arrange for a copy to be sent to you if you are interested.

Source: hempreport
Hemp Seed Oil is one of the most beneficial non-psychoactive compounds found in hemp plants. Hemp Seed Oil Information. There is a long history of use of hemp seed oil in medicine dating back thousands of years. It can be used to improve your health in a variety of ways and the market in the US is finally growing thanks to laxer legislation. Hemp Seed Oil Benefits. Let's explore some of the many benefits of Hemp Seed Oil by looking at how hemp seed can improve your health. Hempseed oil is cheap, readily available, and has a plethora of benefits. Hempseed oil is truly one of nature's finest gifts to mankind and everybody can benefit from its' use. If you haven't given hempseed oil a thought, perhaps now is the time to start looking into this amazing supplement.

2. **Country of Origin.** If you do refrigerate your Hemp Seed Oil it may become semi-solid in the cold. Just let it sit for 15-20 minutes at room temperature and it will return to liquid form. Hemp Seed Oil should keep 6 months to a year in the refrigerator. If over time, your oil gets “sticky” or has off flavors dispose of it. It has gone bad.

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