

Omega³
CHIA

OMEGA 3 CHIA



Chia: The Super Food of the Ancient Aztecs



OMEGA-3” CHIA SEED

- n The “Omega-3” Chia Seed (*Salvia Hispánica L.*) is an ancient crop of the Aztecs cultivated in the tropical and sub-tropical valleys of South America.
- Buried in its core lies the secret of a former brilliant civilization’s health and strength.
- The Chia seed is being cultivated once again by health conscious scientists and farmers to provide an economically sustainable natural source of essential-to-your-health plant based Omega-3 fatty acids and key nutrients.





“OMEGA-3” CHIA QUICK FACTS

- ❖ a gluten free whole grain
- ❖ organically grown and naturally harvested
- ❖ can be eaten right from the plant, mixed with food or drink, or ground into flour for baking
- ❖ no other whole grain compares nutritionally
- ❖ each 22 gram serving of Chia provides:
 - ❖ 3.8 g Omega-3 fatty acid (231-336% AI*)
 - ❖ 3.4 g complete protein (6-7% RDA*)
 - ❖ 8.0 g dietary fiber (21-31% AI)
 - ❖ 139 mg calcium (10-14% AI)
 - ❖ 0.5 mg copper (56-71% RDA)
 - ❖ 4.1 mg iron (25-51% RDA)
 - ❖ 86 mg magnesium (25-36% RDA) each 22 gram serving of Chia provides:
 - ❖ 86 calories
 - ❖ only 42 calories when indigestible insoluble fiber is subtracted
- ❖ antioxidant activity similar to fresh blueberries on a per gram basis, ORAC value 70 micromole TE/g
- ❖ antioxidants include: caffeic acid, chlorogenic acid, quercetin, kaemferol

*AI, Adequate Intake; RDA, Recommended Daily Allowance. Males and females ages 9- >70.



OMEGA-3” CHIA FACTS (CONTINUED)

“Omega-3” Chia Seed

- ❑ 100% natural, non-GMO, pesticide-free seed, gluten free
- ❑ rich in high-quality protein, fiber, vitamins, minerals, antioxidants and pure unaltered plant-derived Omega-3 fatty acids
- ❑ no cholesterol
- ❑ incorporates into a wide range of recipes with no adulteration of their original taste and texture - only a slight nutty flavour pleasantly mixes with aromas of other ingredients
- ❑ the only ISO 9001:2000 certified for purity



NUTRITIONAL LABEL PROFILE

Nutritional Facts	Omega-3 Whole Grain per 100gr serving
Calories (Kcal)	330
Protein (gr)	20.7
Total Fat (gr)	32.8
Saturated fat (gr)	3.2
Monounsaturated fat (gr)	2.2
Polyunsaturated fat (gr)	27.2
Omega-3 (Alpha Linolenic) (gr)	21
Omega-6 (Linoleic) (gr)	6.2
Trans Fatty Acids (gr)	0
Carbohydrates (gr)	44.0
Total Dietary fiber (gr)	41.2
Soluble (gr)	5.3
Insoluble (gr)	35.9

HOW DOES CHIA COMPARE?



545ml milk as a
calcium source



294g of oats
as a **fiber** source



900g of oranges as an
antioxidant source



g spinach
iron source



nuts as a
magnesium
source



992g salmon as an
Omega-3 source



178g bananas
as a **potassium**
source



NATIONAL ORGANIC PROGRAM



Chia Seed NOP Status

Chia Seed has been granted an exemption under the National Organic Program (*NOP*) and can be used as an Organic Ingredient at 35% to 80% of a blended product.

Reference: U. S. Department of Agriculture Federal Register Volume 72, #93, Tuesday, May 15th, 2007

BENEFICIAL FOR BONE HEALTH



- ❑ high calcium content
- ❑ no other whole grain has significant levels of calcium
- ❑ antioxidants preserve bone mass



OTHER HEALTH BENEFITS



□ Digestive Benefits:

- high in fiber
- results in decreased constipation, bloating, cramping
- aids in detoxification

□ Cardiovascular Benefits:

- one 22 g (2 tbsp) serving delivers 3.8 g of Omega-3 fatty acids
- antioxidant activity similar to fresh blueberries on a per gram basis

□ Cardiovascular Benefits in Diabetic Patients:

- decreases inflammation associated with stroke and heart attack risk
- improves blood viscosity
- decreases systolic and diastolic blood pressure
- raises Omega-3 fatty acids in blood



BENEFITS OF OMEGA-3 FOR YOUR HEALTH

- ❑ Omega-3 is an essential fatty acid which cannot be produced by our body; therefore, it needs to be ingested through our diet.
- ❑ Omega-3 and Omega-6 essential fatty acids play a fundamental role in our metabolism. Due to the drastic evolution in our eating habits, our body genetically requires a correct balance between Omega-3 and Omega-6 fatty acids.
- ❑ Omega-3 provides anti-inflammatory properties; and combined with its complementary action with Omega-6, the Omega-3 fatty acids help protect and improve our body functions.



THE ADVANTAGE OF USING OMEGA-3 FROM CHIA

- The ratio of Omega-3 and Omega-6 found in Chia is 4:1 (*4 parts Omega-3 to one part Omega-6*)
- Studies have shown that returning to healthy cholesterol is a matter of eating fats in a balanced ratio. The Omega-6 intake is far too high versus Omega-3. (*30 Omega-6 to 1 Omega-3*) (*for more information refer to the Columbus Concept – link below*)
- Use of Omega-3 found in Chia for food applications will serve to balance the ratio of Omega-3 to Omega-6.

www.columbus-concept.com/Default.htm



“OMEGA-3” CHIA OIL

- ❑ 100% natural, non-GMO pesticide-free “Omega-3” Chia seed oil
- ❑ cold-press extracted and filtered
- ❑ rich in pure plant-derived Omega-3 essential fatty acids
- ❑ no cholesterol
- ❑ a clear golden oil with a slight nutty taste, no fishy-flavour, and contains no heavy metals (*mercury, lead, cadmium*)
- ❑ blends perfectly into daily meals with no digestive disturbances
- ❑ higher percentage of Omega-3 per gram than other Omega-3 oils

OMEGA 3 CHIA SEED – NATURE’S SUPER FOOD

Advantages of Chia Seed over other Omega-3 sources

2 tablespoons of Omega 3 Chia are equal, in Omega-3 content, to

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17	50	17	2	11	17	8
Soft Gel Caps of Fish Oil (of 1 g.)	Glasses of Milk with Omega-3 (of 200ml.)	Portions of Margarine with Omega-3 (of 7g.)	Slices of Salmon Fish (of 246g.)	Eggs with Omega-3	Portions of Fish Oil (of 10ml.)	Portions of Canola Oil (of 10ml.)

Based on 25g
Omega 3 Chia Seed

(*)Sources: Circulation 2002, Semoc 2001, Chilean Nutritional Content Table



ALA CONVERSION TO EPA AND DHA

ALA, the omega 3 fatty acid found in chia, shows a very good conversion rate to EPA, a major omega 3 fatty acid found in fish oil. One study showed as much as 60% increase in serum EPA concentrations after 12 weeks of ALA intake. ALA conversion to DHA, another fish oil omega 3 fatty acid, is minimal. *Harper CR, Edwards MJ, DeFilipis AP, Jacobson TA. Flaxseed oil increases the plasma concentrations of cardioprotective (n-3) fatty acids in humans. J Nutr. 2006 Jan;136(1):83-7.*

However, it appears that EPA alone, without DHA, can protect against heart attacks. In a major Japanese study, subjects given EPA had 19% fewer cardiac events over five years, compared to those given a placebo. *Yokoyama M, Origasa H, Matsuzaki M, Matsuzawa Y, Saito Y, Ishikawa Y, Oikawa S, Sasaki J, Hishida H, Itakura H, Kita T, Kitabatake A, Nakaya N, Saktata T, Shimada K, Shirato K, Japan EPA lipid intervention study (JEUS) investigators. Effects of eicosapentaenoic acid on major coronary events in hypercholesterolaemic patients (JELIS): a randomised open-label, blinded endpoint analysis. Lancet. 2007 Mar 31;369(9567):1090-8. Erratum in: Lancet. 2007 Jul 21;370(9583):220.*

Another study showed that EPA protects skin against sunburn and protects against skin damage from the ultraviolet rays of the sun. *Rhodes LE, Shakhbakti H, Azurdia RM, Moison RM, Steenwinkel MJ, Homburg MI, Dean MP, McArdle F, Beijersbergen van Henegougen GM, Epe B, Vink AA. Effect of eicosapentaenoic acid, an omega-3 polyunsaturated fatty acid, on UVR-related cancer risk in humans. An assessment of early genotoxic markers. Carcinogenesis. 2003 May;24(5):919-25.*

More research is needed to reveal all the health effects of ALA, but it appears that chia and other sources of ALA may yield many of the same health benefits as fish oil.

Jack F. Bukowski, MD, PhD

Chief Scientific Officer, NSRI

Assistant Clinical Professor of Medicine

Harvard Medical School



“OMEGA-3” CHIA FLOUR

- ❑ 100% natural pesticide-free, non-GMO, (ISO 9001) certified to preserve the natural nutritional qualities of the fiber, proteins, and minerals
- ❑ excellent source of high quality protein, dietetic fiber, vitamins, minerals and antioxidants in their natural food form
- ❑ incorporates easily into a wide range of recipes without altering the original flavour and texture
- ❑ a slight nutty flavour mixes pleasantly with the aroma's of other ingredients



“OMEGA-3” CHIA FLOUR

Nutritional Contents	100 gr
Calories (Kcal)	67
Proteins (g)	29.3
Total Fat (g)	7
Unsaturated fat (g)	0
Monounsaturated Fat (g)	0.5
Polyunsaturated Fat (g)	5.6
Omega-3 fatty Acids (Alpha-Linolenic) (g)	4.1
Omega-6 Fatty Acids (Linoleic) (g)	1.5
Trans Fat (g)	0
Cholesterol	0
Available Carbohydrates (g)	1.0

Nutritional Contents	100 gr
Total Dietetic Fiber (g)	53.6
Soluble (g)	1.5
Insoluble (g)	52.1
Sodium (mg)	11
Potassium (mg)	10700
Calcium (mg)	8900
Phosphorus (mg)	11300
Magnesium (mg)	5700
Zinc (mg)	3.7

Source: FPT S.A., Analysis Report N°
01903133 Eurofins Analytics 07/07/2006



SPROUTED “OMEGA-3” CHIA SEED FLOUR

Increased bioavailability

Increased vitamins and minerals due to better bioavailability when sprouted

Increased antioxidants ORAC (*Oxygen Radical Absorbance Capacity*) value tripled - potentially increasing free radical protection and product stability, as well as increasing nutrition panel numbers

Increased amino acid content and bioavailability - aminos are now in a pre-digested state

Increase in phytic acid, allowing for increased mineral bioavailability for phytic acid conversion and mineral absorption (*Phytic Acid in its seed state can reduce the uptake of certain essential minerals. The conversion of Omega-3 requires magnesium iron and zinc as co-factors*)



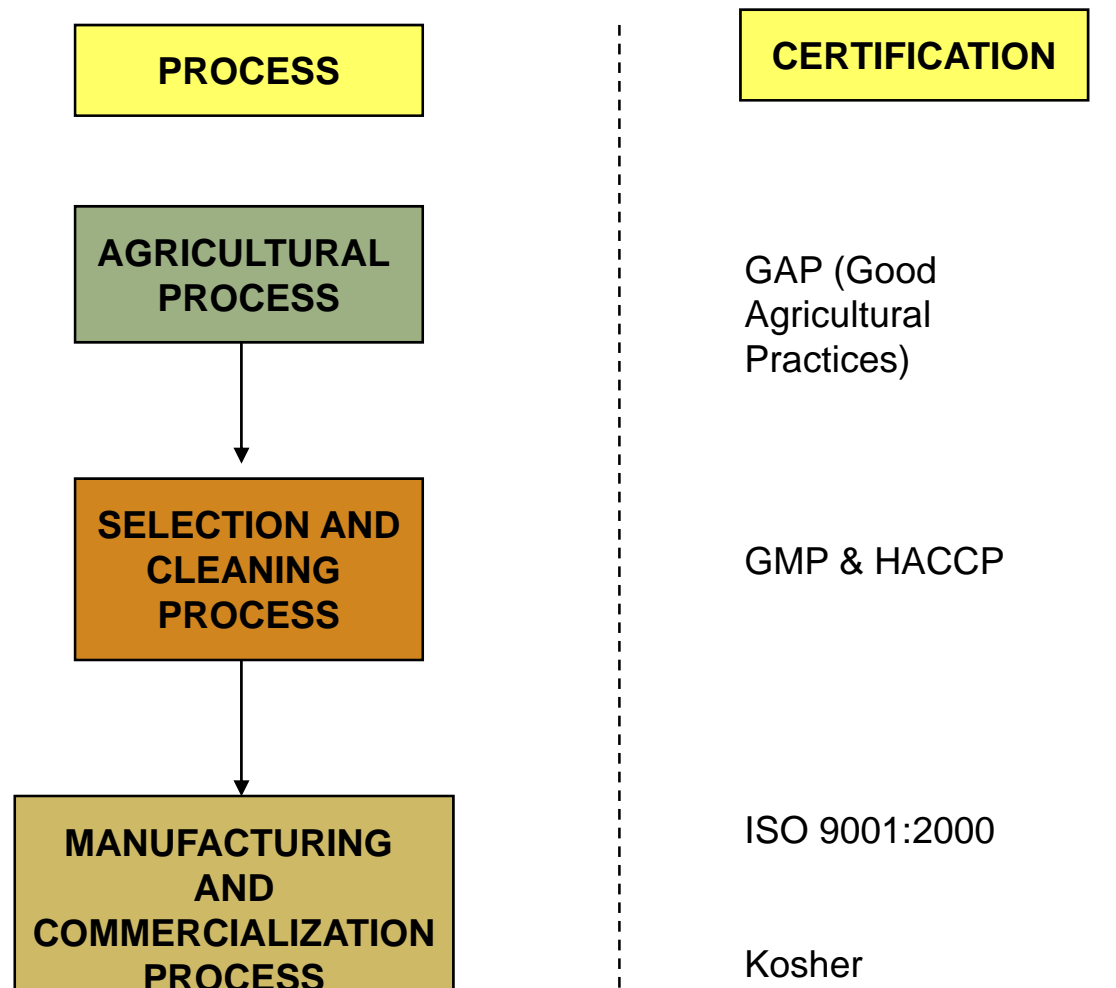
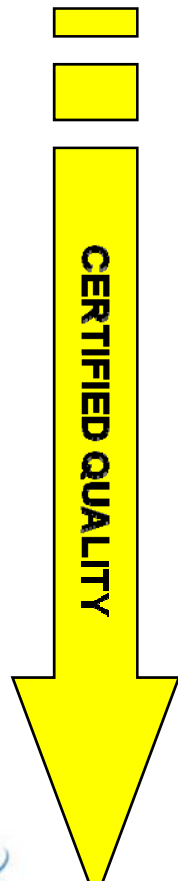
INTERNATIONAL QUALITY STANDARDS

- “Omega-3” Chia is sourced from the only ISO 9001:2000 certified company (FPT S.A.) which produces and markets Omega 3 Chia Seeds. The production of the seed is BPA-certified, and the cleaning and selection processes are GMP and HACCP certified.

- These certifications guarantee:
 - product traceability
 - controlled and constant quality
 - a high level of purity (99.9%)
 - improved production forecast
 - continual monitoring and improvement of operations

INTERNATIONAL QUALITY STANDARDS

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CHIA





RESEARCH



Glycemic

Research done in diabetic subjects has shown that **Chia** is a low glycemic index food. This means that eating **Chia (*Salvia hispanica L*)** with other food decreases the blood sugar spike an hour after a meal. As such, the subsequent sugar drop an hour later is less intense, and this is known to lead to decreased feelings of hunger.

Blood Pressure/Inflammation

Further research in diabetic subjects shows that about 40 grams of **Chia (*Salvia hispanica L*)** per day results in significantly decreased systolic blood pressure. C-reactive protein (*CRP*), a blood protein that is a measure of chronic inflammation, was also reduced significantly.

Cardiovascular

High blood pressure is a known risk factor for cardiovascular events such as heart attack and stroke. Chronic inflammation has emerged as a cardiovascular risk factor that is more predictive than obesity, smoking, high blood pressure, and even high cholesterol. Statins, drugs that lower cholesterol, also decrease heart attack and stroke. Emerging evidence shows that statins also reduce chronic inflammation, as measured by *CRP*. At present it is not possible to determine if the reduction in cardiovascular risk is due to cholesterol reduction, *CRP* reduction, or both. Other studies showing that tea drinking reduces both *CRP* and cardiovascular risk, suggests that *CRP* reduction may be at least part of why statins lower heart attack and stroke.



RESEARCH (CONTINUED)

Chia (*Salvia hispanica L*) also has a thinning effect on the blood that is likely to be protective against stroke and heart attack.

Ref: Vukson et al: Supplementation of Conventional Therapy with the Novel Grain *Salvia hispanica L*. Improves Major and Emerging Cardiovascular Risk Factors in Type 2 Diabetes. *Diabetes Care*, volume 30, Number 11, November 2007.

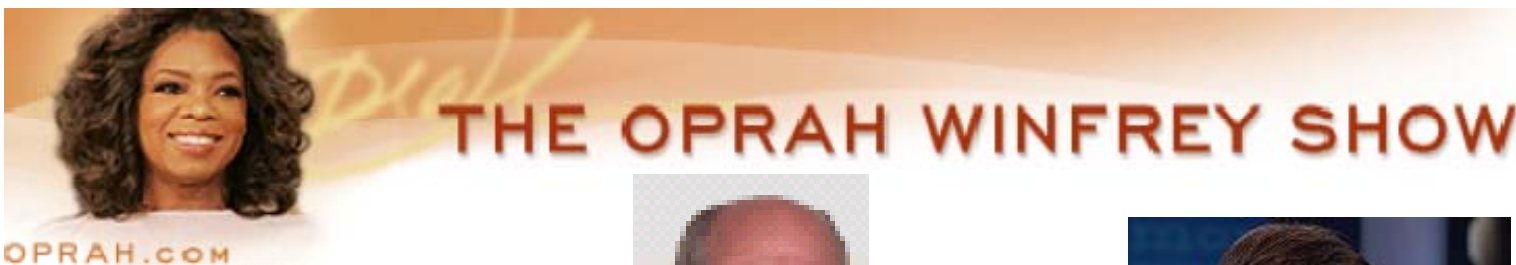
NSRI, in conjunction with Dr. David Nieman of Appalachian State University,

is conducting a randomized, double-blind, placebo-controlled study in healthy, non-diabetic subjects to examine the effects of Chia. The results of these studies will be available in 2008.



CHIA IN THE MEDIA

- “Omega-3” Chia has been on many talk and news shows with numerous doctors promoting it as the only Chia option.
- Dr. Bukowski was interviewed about Chia on the Dr. Oz XM Radio Broadcast
- Chia was presented by Dr. Oz on the Oprah Winfrey Show
- Plans are in place for a National Media program



Dr. Jack F. Bukowski, Md, PhD



Dr. Oz