



*Just the
flax...*
For the Baking Industry

www.ameriflax.com



North Dakota Flaxseed Producers

The Essential Flax

Omega 3 Heavyweight

Typically 40% lipid with at least 55% of its total fatty acid as alpha-linolenic acid (ALA), flax truly is an Omega-3 heavyweight. Flaxseed is one of the highest plant sources of Omega-3 fatty acid available. Consider that each tablespoon of flax has up to 1800mg of ALA. Adding flaxseed to your product is one of the easiest and tastiest ways to give it a hefty and healthy omega-3 punch.

Just the Flax for Heart Health

Large scale studies now confirm that consuming plant derived omega-3's offer some unique heart-healthy benefits. ALA, in particular,

may be even more effective than the EPA and DHA found in fatty fish and fish oils in lowering the risk of some coronary vascular disease problems.

More recent research suggests that ALA plays a crucial anti-inflammatory role in reducing heart disease risk. Its ability to lower blood levels of C-reactive protein (associated with artery inflammation) may be considered as important in preventing heart attacks and strokes as lowering bad (LDL) cholesterol levels.

Recommended by Professional Health Organizations

Up to a 70% reduction in human deaths from coronary heart disease is associated with diets rich in ALA, such as Mediterranean diets, compared with typical western diets low in ALA.

It's why the American Heart Association's Dietary Guidelines now recommend including high ALA sources, such as flaxseed, in healthy diets for the general population. Put your product on the heart-healthy "A" LA list by enriching it with a healthy dose of flaxseed or flax meal.



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Flax for Your Health

Power Punch in a Tiny Package

Yes, it's an Omega-3 heavyweight, but flaxseed also delivers a wallop in other major nutritional arenas. High in fiber, rich in protein and laden with powerful phytochemicals and antioxidants, flax delivers its goodness naturally.

Knock-out Fiber Levels

Flaxseed is stunningly high in dietary fiber (28%) with a perfect range of soluble (20%-40%) and insoluble (60%-80%) fiber.

Soluble fiber, such as that found in flaxseed gum or mucilage, lowers

blood cholesterol levels. Insoluble fiber is deemed ever so important now for its role in good colonic health, reducing the risk of colon cancer and providing constipation relief.

Just an ounce of flaxseed daily provides over 30% of the RDI (Recommended Daily Intake-USDA) for fiber. And flaxseed delivers this satisfying fullness deliciously, resulting in better appetite control and weight loss.

Cancer-fighting Lignans

Flaxseed is literally loaded with lignans shown to prevent hormone-dependent tumors such as colon, breast and prostate cancers. While similar to soy isoflavones, flaxseed provides 75 to 800

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times more of these phytoestrogens than any other plant source.

Amazing Antioxidants

The major lignan in flaxseed, SDG (secoisolarciresinol diglucoside), is a remarkable antioxidant – associated with reducing both Type 1 and Type 2 diabetes as well as lower blood glucose levels. Research is also documenting the unique benefits of other antioxidants, such as flavanoids and phenolic acids that are so plentiful in flaxseed.



Fundamentally Fabulous Nutrition

Beyond the Omega-3's, fiber and lignans, flaxseed possesses an advantage in overall nutrition. High in protein (18%-21%), it has an excellent amino acid profile and is naturally laden with essential vitamins, minerals and unique antioxidants.

Flaxseed Nutritional Analysis

Nutrients	as per 100g
Calories	492.0kcal
Total Fat	34.0 - 42.0g
Saturated Fat	3.2 - 4.0g
Polyunsaturated Fat	22.4 - 30.0g
Linoleic	4.3 - 6.0g
Alpha-Linolenic	18.1 - 24.0g
Monounsatur. Fat as Oleic	6.9 - 8.0g
Trans Fat	0.0g
Total Carbohydrate	30.0 - 38.0g
Dietary Fiber	28.0g
Protein	18.0 - 21.0g



For a complete nutritional analysis, visit ameriflax.com



Excellent Functionality

Taste

Flaxseed has a pleasant, nutty flavor with a depth that intensifies with increased amounts used. This feature lets flaxseed serve as a primary flavoring agent in many applications.

Texture

Crunchy, especially when roasted, flaxseed satisfies the growing consumer trend for nutritious, but hearty, high-texture foods. Flax meal gives high fiber products a moist, soft mouth feel.

Color

From a rich gold to deep reddish brown, flaxseed has an eye appealing color range that gives a wholesome, whole grain look to a variety of products.

Versatile

Flaxseed delivers its complete goodness whether the formula calls for whole seed or milled flax. And the unique functional aspects of the oil, gum or hull fraction provide even more flexibility when replacing a formula staple with a healthy flax component.

Stable

Baked goods containing flaxseed store well, with both the Omega-3 ALA and lignans remaining stable under common baking temperatures of 350°. For specifics, see "The Science on Storage and Stability" on page 11.



From a rich gold to deep reddish brown, flaxseed has an eye appealing color range that gives a wholesome, whole grain look to a variety of products.



Unparalleled Promotion Potential

Recognized Health Food

Tap into flaxseed's potential to give your products a positive image. As the research evidence on its unique health benefits continues to grow, flaxseed is enjoying a renaissance among nutritionists, food processors, chefs and the health conscious public.

An Informed, Cost-effective Choice

Flaxseed is a great value, costing the same or less than many fruits, nuts and seeds. With year-around availability through familiar distribution channels, flaxseed is as easy to order as it is to handle and store.

Product Positioning Power

Whether giving a whole grain product more traditional moisture and mouth feel or aiming to satisfy health conscious palates that expect more wholesome nutrition and natural texture, we're *"just your flax."*

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All About Omega-3 Labeling

Enhancing the nutrition of your product with flaxseed is now something you don't have to keep to yourself. Flaxseed currently qualifies for two different type of label claims – nutrient content and structure/function claims. A qualified health claim for whole and milled flaxseed is also on the radar screen.

Nutrient Content Claim

Make a "Rich," "Excellent" or "High" source of omega-3 label claim when your product contains 260mg of ALA per serving. Flaxseed contains up to 1.8 grams (1800mg) of ALA per tablespoon; flax oil is up to 8 grams ALA.

Structure/Function Claim

Structure/function claims such as "Omega-3's support cardiovascular health" or "Omega-3's support overall health" can also be made on qualifying products.

Consult FDA guidelines for more specific information prior to making label claims.



**Make a "Rich,"
"Excellent" or "High"
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label claim when your
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Flaxseed: A Sum Greater than its Parts

Whole Seed

Slightly larger than a sesame seed, with 150 to 200 seeds per gram, whole flaxseed is smooth, shiny, rich gold to amber brown and flows like water. The seed stores almost indefinitely, yet has a soft crunch, tender meat and a subtle, yet distinctively nutty flavor. And, who would guess that this tiny package could pack such a powerful health punch. For tips on using whole flaxseed to perk up your product, see "A Seed for all Reasons" on page 9.

Flaxseed Meal

Introduce a healthy component to your baking applications by replacing some of the flour or shortening with

milled flax. Milled flax is free-flowing, fine and granular and off-white to light amber in color. Of course, flax meal has all the natural goodness – the omega-3 ALA, lignans, fiber and beneficial antioxidants – found in the whole seed. See "The Golden Opportunity" on page 10 for more details.

Flax Oil

Flaxseed is roughly 40% lipid and all 55% of its beneficial omega-3 ALA is found in the oil fraction. Because 73% of the oil in flaxseed is polyunsaturated, it's less sensitive to oxidation when added as whole milled flax than when fractionized. Incorporating cold pressed flax oil is a perfect way to enhance products such as ice cream with beneficial omega-3's.

Flaxseed Gum

Pass whole flaxseed through hot water and the process naturally separates the soluble mucilage or gum from the seed. This fraction has all the beneficial dietary fiber and none of the lipid component. Target the health market and give products a great texture in the process.

Flaxseed gum binds water, giving high fiber products a moist, soft mouth feel. This excellent water-holding capacity can also improve ice cream texture by preventing ice crystals. Flaxseed gum forms a low viscosity gel that can improve particle suspension so necessary in nutritionally complete beverage product lines.



Flaxseed Hulls

All of the powerful phytoestrogens that inhibit tumor growth are found in flaxseed lignans and the hull fraction is a wonderful way to grab most of them. Add flaxseed hulls to your formula and you'll also get all of the soluble fiber in flax and a healthy dose of the omega-3s (flaxseed hulls are still 18% oil).

If your mission is to put phytoestrogens in a health or granola bar, the hull fraction will naturally provide the daily values needed without the regulatory requirements often associated with purified components.

Whole Flax: A Seed for all Reasons

Flaxseed truly is a food for the ages with the Neolithic people first tapping its potential to deliver improved health some 500 generations ago. Today this ancient seed is finding its way into new and imaginative foods. Bakers have discovered that flaxseed adds nutrients, texture, flavor and health benefits to many products.

Sprinkle On

Give a hearty, old world look and texture to baked goods by adding whole flaxseed to breads, muffins, pie crusts, rolls, bagels, waffles and

pancakes. Adhere whole seed garnishes to products using an egg wash or after soaking seeds in warm water. Retain all the nutrition and functionality aspects when using soaked seeds by adding the slightly viscose water back into your bakery mix.

Fold In

Add eye appeal and crunch by folding whole seeds into bakery doughs. Like nut meats, whole flaxseeds have a high lipid content that will roast and darken when exposed to high temperatures.

Roast

The nutty flavor of flaxseed can be enhanced by roasting a shallow, uniform depth of seed at 356°F (180°C) for 8 minutes. Roasted flaxseed is also commercially available and suppliers can be found at www.ameriflax.com. The product is particularly delicious when sprinkled on smoothies, yogurt, ice cream or salads.



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Flaxseed Meal: The Golden Opportunity

Milled Perfection

Flaxseed meal has enjoyed decades of preference in the baking industry for its taste, comparative stability and functionality. Many food manufacturers also use it as a source of whole grain.

Fortify

Naturally fortify processed foods such as breakfast cereal and snack foods like crackers, granola bars and cookies with the healthy concentrations of essential fats, fiber and phytochemicals of milled flax.

Replace Highly Processed Flour

Add milled flaxseed up to 15% on a flour basis in breads without adjusting lipid levels (8% of dry ingredient weight is optimal in most bakery applications). The gum in flaxseed naturally enhances viscosity, improving loaf volume, oven spring and keeping quality. Maintain your formulation's original texture, consistency and proof time by increasing yeast by 25% when replacing flour with milled flax.

Replace Unhealthy Fats

Like the seed, flax meal is typically 40% lipid but has more than three times as much omega-3 as omega-6 fatty acids, giving it an n-6/n-3 ratio of 0.3 to 1. Compare this with an n-6/n-3 ratio of 58:1 for corn oil; 7:1 for soybean oil and 2:1 for canola oil.

Substitute milled flax for the fat in recipes at a 3:1 ratio (1½ cups of milled flax will replace ½ cup of fat source). Baked goods will brown more rapidly because of the high lipid content, so a slight decrease in baking temperature may be warranted. Expect good stability and normal shelf life when adding oil to bread in the form of whole milled flaxseed.

Preserve Naturally

The protein in flaxseed has recently been discovered to have antimicrobial activity. Milled flax is ideally suited to pasta applications and researchers found that any amount over 12% in a noodle will inhibit mold growth.



Just Add Water

Flaxseed's high fiber content (28%) and greater water binding properties will create stiffer dough. Increase water by an amount equal to 75% of flaxseed used (add 75g of water for every 100g of milled flax.) Add water to pastry formulas until a workable dough results.

The Science on Storage and Stability

Whole Seed

Whole flaxseed stores almost indefinitely at room temperature. Roasted flaxseed should generally be refrigerated.

Milled flax

Repeated research on milled flaxseed found it stable at room temperature (73°-75°) for up to four months when packaged appropriately (such as the plastic-

lined, triple layer paper bags supplied to commercial bakers). Studies found no deterioration in flavor, aroma or nutritional value.

Consumer sensory tests found no difference in baked products containing fresh or stored milled flaxseed. Refrigeration is recommended if milled flax containers will repeatedly be exposed to air for extended periods.

Baked Goods

Bakery products store well at room temperature or can be frozen for many months with little deterioration in their functional and nutritional properties. The excellent water binding properties and newly discovered antimicrobial activity of milled flax can help extend shelf life of many products.

Functionality tests show that both the omega-3 ALA and lignans in flaxseed remain stable under baking temperatures of 350°.



Flaxseed Formulas and Recipes

Flaxseed and flax meal are available through your normal distribution channels. For direct suppliers, go to www.ameriflax.com and click on the Flax Handlers list.

Whether golden or amber brown, the color of flaxseed has no effect on its functional attributes or nutritional aspects (such as ALA, lignan, protein and dietary fiber contents).

Make sure you request flax, however. Golden flaxseed closely resembles a flaxseed derivative known as Solin that has very low levels of ALA – less than 5% – and is typically used in frying applications.

Recipes Available

Find these tasty recipes on the following pages.

Flaxseed Hamburger Buns

Flaxseed Petit Pane

Flaxseed Pizza Crust

Flaxseed Trail Mix Cookies

Flaxseed Animal Cookies

Flaxseed Bagels

Flaxseed and Cracked Wheat Hoagies

Flaxseed Oatmeal Bread

Flax-Bran Muffins

Flaxseed Chocolate Chip Cookies

Whole Wheat Bread with Flaxseed

Potato Bread with Flaxseed

Honey and Bran Bread with Flaxseed

Raisin Bran Flax Muffins

Banana-Nut Flax Muffins

Flax Muffins with Chocolate Chips

Flax Squares with Oatmeal-Mallow

Flax Scones with Cinnamon

Pastry Crust with Flaxseed

Cinnamon Buns with Flaxseed



Weight and Calorie Content of Flaxseed (per specific measurement)

Ground Flaxseed

250mL = 1 cup = 130 grams = 4.5 ounces = 585 calories

15mL = 1tbsp = 8 grams = .3 ounces = 36 calories

5mL = 1tsp = 2.7 grams = .1 ounces = 12 calories

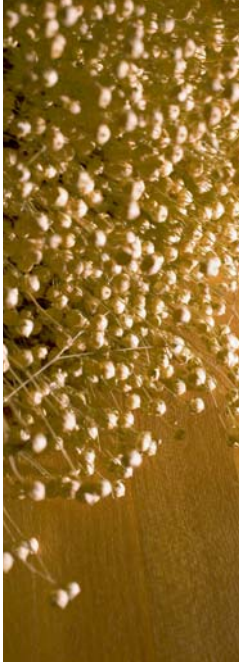
Whole Flaxseed

250mL = 1 cup = 180 grams = 6.3 ounces = 810 calories

15mL = 1tbsp = 11 grams = .4 ounces = 50 calories

5mL = 1tsp = 4 grams = .1 ounces = 18 calories

For More Information Contact:



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North Dakota Flax Producers

Some photos and recipes compliments of:



Flaxseed Hamburger Buns

Ingredient	Amount (Baker's %)
High gluten bread flour	60
White whole wheat flour	40
Water (variable)	62
Milled flax	10
Salt	1.5
Sugar	5
Canola oil	5
Yeast (instant)	2
Nonfat dry milk	6
Reduce 150 ^a	0.7

^aAmerican Ingredients. Contains sodium stearoyl lactylate, calcium sulfate, sodium sulfite.

Processing:

- Mix slowly to full development (dough temperature: 80°F).
- Cover and ferment 1 1/2 to 2 hours (80°F).
- Scale, round and pan dough pieces (3oz).
- Proof for 1 hour (80°F, 75%RH).
- Apply wash and top each bun with approx. 0.05oz (1.5g) whole flaxseed.
- Bake 15 minutes at 375°F (revolving rack oven) with light steam at the start of baking.

Nutrition Facts

Serving Size 1 bun (75g)
Servings Per Container varies

Amount Per Serving

Calories 230 Calories from Fat 40

% Daily Value*

Total Fat 4.5g **7%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 280mg **12%**

Total Carbohydrate 39g **13%**

Dietary Fiber 4g **16%**

Sugars 4g

Protein 8g

Vitamin A 0% • Vitamin C 0%

Calcium 8% • Iron 10%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

ALA: 1,110mg per bun



Flaxseed Petit Pane

Ingredient	Amount (Baker's %)
High gluten bread flour	60
White whole wheat flour	40
Water (variable)	60
Milled flaxseed	10
Salt	2
Yeast (instant)	1
Ascorbic acid	30ppm
ICS 33 dough conditioner ^a	0.4
Softase 4600 dough conditioner ^b	0.4
Whole flaxseed	4

^aInnovative Cereal Systems. Contains wheat flour, enzymes and processing aid (high oleic canola oil).

^bInnovative Cereal Systems. Contains wheat flour, calcium sulfate, enzymes and processing aid (high oleic canola oil).

Processing:

- Mix slowly to full development, adding the whole flaxseed late in the mixing process (dough temperature: 80°F).
- Scale and round dough pieces (2oz).
- Rest 15 minutes and elongate rounds to petit pane shape.
- Proof 1 hour (80°F, 80%RH).
- Score and bake 20 minutes at 380°F (revolving rack oven) with light steam at the start of baking.

Nutrition Facts	
Serving Size 1 petit pane (48g)	
Servings Per Container varies	
Amount Per Serving	
Calories 140	Calories from Fat 20
% Daily Value*	
Total Fat 2g	3%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 250mg	10%
Total Carbohydrate 26g	9%
Dietary Fiber 3g	12%
Sugars 0g	
Protein 5g	
Vitamin A 0%	• Vitamin C 10%
Calcium 2%	• Iron 8%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories 2,000 2,500
Total Fat	Less Than 65g 80g
Saturated Fat	Less Than 20g 25g
Cholesterol	Less Than 300mg 300mg
Sodium	Less Than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

ALA: 650mg per pane



Flaxseed Pizza Crust

Ingredient	Amount (Baker's %)
High gluten bread flour	65
White whole wheat flour	35
Water	60
Milled flaxseed	15
Salt	2
Sugar	1
Yeast (instant)	1
Reduce 150 ^a	0.7

^aAmerican Ingredients. Contains sodium stearoyl lactylate, calcium sulfate, sodium sulfite.

Processing:

- Mix slowly to full development (dough temperature: 80°F).
- Scale and round. Spray lightly with canola oil.
- Retard overnight or ferment 2 hours.
- Warm-up dough 1 hour before sheeting.
- Sheet and proof 1 hour before topping.

Nutrition Facts

Serving Size 1/8 pizza crust (29g)
Servings Per Container 8

Amount Per Serving

Calories 90 Calories from Fat 15

% Daily Value*

Total Fat 1.5g **2%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 160mg **7%**

Total Carbohydrate 16g **5%**

Dietary Fiber 2g **8%**

Sugars 0g

Protein 3g

Vitamin A 0% • Vitamin C 0%

Calcium 2% • Iron 4%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

ALA: 720mg per slice



Flaxseed Animal Cookies

Ingredient	Amount (Baker's %)
All purpose wheat flour	55.6
Ground roasted flaxseed	16.7
Shortening	4.2
Sucralose (Splenda)	2.5
Sugar	2.5
Baking powder	0.7
Baking soda	0.7
Water	40

Processing:

- Mix to optimum dough development for 3.0-3.5 minutes (850°F).
- Put the dough in freezer for 20 minutes (-180°F).
- Sheet and cut with animal molds onto oiled baking sheets (Serving size: 8 cookies = 25g / 0.88oz).
- Bake 20 minutes at 350°F.

Nutrition Facts

Serving Size 8 cookies (25g)
Servings Per Container about 16

Amount Per Serving

Calories 90 Calories from Fat 25

% Daily Value*

Total Fat 3g **5%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 65mg **3%**

Total Carbohydrate 13g **4%**

Dietary Fiber 1g **4%**

Sugars 1g

Protein 2g

Vitamin A 0% • Vitamin C 0%

Calcium 0% • Iron 4%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

ALA: 850mg per serving



Flaxseed Bagels

Ingredient	Amount (Baker's %)
High gluten flour	100
Milled flaxseed	25
Granulated sugar	3
Salt	2
Water	62.5
Yeast (instant)	0.8

Processing:

- Mix to full development (dough temperature: 85°F).
- Scale, round and shape dough pieces (2.5oz).
- Proof approximately 43 minutes (104°F, 75%RH).
- Boil 30 seconds on each side and allow to dry for 5 minutes.
- Bake 13 minutes at 425°F.

Nutrition Facts

Serving Size 1 bagel (62g)
Servings Per Container varies

Amount Per Serving

Calories 180 **Calories from Fat** 35

% Daily Value*

Total Fat 4g **6%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 290mg **12%**

Total Carbohydrate 31g **10%**

Dietary Fiber 3g **12%**

Sugars 1g

Protein 7g

Vitamin A 0% • Vitamin C 2%

Calcium 0% • Iron 10%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

ALA: 1,860mg per bagel



Flaxseed & Cracked Wheat Hoagies

Ingredient	Amount (Baker's %)
Boiling water	87.0
Cracked wheat	33.3
<i>Bread flour</i>	<i>100.0</i>
Milled flax	15.0
Yeast (instant)	1.9
Granulated sugar	14.7
Salt	1.4

Processing:

- Soak the cracked wheat in boiling water for 5 minutes.
- Add the cracked wheat to the other ingredients and mix slowly to full development.
- Cover and ferment 1 hour (82°F).
- Punch, scale and rest 15 minutes (5oz).
- Mold into hoagie roll shape.
- Proof for 30 minutes (75°F).
- Apply egg wash and score the buns down the middle.
- Bake 17 minutes at 380°F with light steam at the start of baking.

Nutrition Facts

Serving Size 1 hoagie (133g)

Servings Per Container varies

Amount Per Serving

Calories 350 Calories from Fat 35

% Daily Value*

Total Fat 4g **6%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 320mg **13%**

Total Carbohydrate 69g **23%**

Dietary Fiber 6g **24%**

Sugars 9g

Protein 13g

Vitamin A 0% • Vitamin C 4%

Calcium 0% • Iron 20%

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	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

ALA: 1,800mg per roll



Flaxseed Oatmeal Bread

Ingredient	Amount (Baker's %)
Bread flour	100
Milled flaxseed	15
Water	85
Yeast (instant)	1.2
Yeast food	0.25
Salt	2.5
Brown sugar	5
Nonfat dry milk	2
Rolled oats	25

Processing:

- Mix slowly to full development (dough temperature: 80°F).
- Ferment for 1 hour (82°F).
- Punch, scale and pre-shape (18oz). Rest 15 minutes.
- Shape and coat outside with flaxseeds.
- Proof for 1 hour (75°F).
- Bake 20 minutes at 380°F.

Nutrition Facts

Serving Size 1 slice (44g)
Servings Per Container about 11

Amount Per Serving

Calories 100 **Calories from Fat** 15

% Daily Value*

Total Fat 1.5g **2%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 180mg **8%**

Total Carbohydrate 19g **6%**

Dietary Fiber 1g **4%**

Sugars 1g

Protein 4g

Vitamin A 0% • Vitamin C 2%

Calcium 0% • Iron 6%

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	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

ALA: 570mg per slice



Flax-Bran Muffins

Ingredient	Amount (Baker's %)
All purpose flour	74
Bakers bran	26
Milled flaxseed	26
Granulated sugar	32
Baking powder	6
Raisins	26
Salt	1.3
Eggs	32
Milk	84
Canola oil	2
Honey	26
Applesauce	53
Cinnamon	0.6
Nutmeg	0.2

Processing:

- Mix dry ingredients together in mixing bowl.
- Add the liquid ingredients to the dry and mix on low speed until just moistened.
- Gently mix in the raisins.
- Scoop batter into muffin pans (#20 scoop, approximately 2oz).
- Bake for 15 minutes at 400°F.

Nutrition Facts	
Serving Size 1 muffin (51g)	
Servings Per Container varies	
Amount Per Serving	
Calories 130	Calories from Fat 25
% Daily Value*	
Total Fat 2.5g	4%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 20mg	7%
Sodium 180mg	8%
Total Carbohydrate 24g	8%
Dietary Fiber 3g	12%
Sugars 12g	
Protein 4g	
Vitamin A 2%	• Vitamin C 2%
Calcium 4%	• Iron 6%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories 2,000 2,500
Total Fat	Less Than 65g 80g
Saturated Fat	Less Than 20g 25g
Cholesterol	Less Than 300mg 300mg
Sodium	Less Than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

ALA: 800mg per muffin



Flaxseed Chocolate Chip Cookies

Ingredient	Amount (Baker's %)
Brown sugar	50
Granulated sugar	50
Butter	32.5
Shortening	32.5
Salt	2.2
Baking soda	0.9
Vanilla	1.3
Eggs	35
<i>Pastry flour</i>	<i>100</i>
Milled flaxseed	25
Semi sweet chocolate chips	80

Processing:

- Cream the sugars, butter, shortening, salt, soda, and vanilla.
- Add eggs and mix well.
- Add the flour and milled flaxseed and mix until incorporated.
- Add the chocolate chips and mix lightly.
- Scoop onto oiled baking sheets (#30 scoop, approximately 1¹/₂ oz, 40g).
- Bake 13 minutes at 350°F.

Nutrition Facts	
Serving Size 1 cookie (36g) Servings Per Container varies	
Amount Per Serving	
Calories 180	Calories from Fat 80
% Daily Value*	
Total Fat 9g	14%
Saturated Fat 4g	20%
Trans Fat 1g	
Cholesterol 20mg	7%
Sodium 130mg	5%
Total Carbohydrate 23g	8%
Dietary Fiber 1g	4%
Sugars 14g	
Protein 2g	
Vitamin A 2%	Vitamin C 0%
Calcium 0%	Iron 4%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories 2,000 2,500
Total Fat	Less Than 65g 80g
Saturated Fat	Less Than 20g 25g
Cholesterol	Less Than 300mg 300mg
Sodium	Less Than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9	Carbohydrate 4 Protein 4

ALA: 510mg per cookie



Whole Wheat Bread with Flaxseed

Ingredient	Amount (Baker's %)
Whole wheat flour	85
Milled flaxseed	15
Water	74
Vital wheat gluten	4
Canola oil	1
Salt	2.25
Honey	8
Yeast, compressed	3.75
Ascorbic acid	100 ppm
CSL or SSL (optional) ^b	0.5

^aBased on flour + flaxseed = 100%

^bCalcium or sodium stearoyl lactylate (emulsifiers)

Processing:

- Do not over-mix. Should be slightly under-mixed.
- Thirty minute floor time.
- Scale, round.
- Intermediate proof, 10 minutes.
- Mold
- Do not over-proof, keep on the young side.
- Bake at 360°F for approximately 30 minutes.

Nutrition Facts

Serving Size 1 slice (27g)
Servings Per Container 17

Amount Per Serving

Calories 70 **Calories from Fat** 15

% Daily Value*

Total Fat 1.5g **2%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 135mg **6%**

Total Carbohydrate 12g **4%**

Dietary Fiber 2g **8%**

Sugars 1g

Protein 3g

Vitamin A 0% • Vitamin C 0%

Calcium 0% • Iron 4%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

ALA: 440mg per slice

Yield: Scale at 20oz per loaf for 1 pound loaf.

Potato Bread with Flaxseed

<i>Ingredient</i>	<i>Amount (Baker's %)</i>
Bread flour	85
Flaxseeds (dry weight)	15
Potato flakes	3
Water	50
Sugar solids	6
Nonfat dry milk powder	2
Canola oil	1
Salt	2.25
Yeast (compressed)	3
Vital wheat gluten	3.75
Ascorbic acid	100ppm
CSL or SSL (optional) ^b	0.5

^aBased on flour + flaxseed = 100%

^bCalcium or sodium stearoyl lactylate (emulsifiers)

Processing:

- Soak flaxseed in water (1-1½ times the weight of the flaxseed).
 - Mix to full development.
 - Give 20-30 minutes floor time.
 - Scale, round.
 - Intermediate proof, 5-10 minutes.
 - Mold
 - Full proof.
 - Bake at 380°F -400°F for approximately 25 minutes.
- Yield: Scale at 20oz per loaf for 1 pound loaf.

Nutrition Facts

Serving Size 1 slice (26g)
Servings Per Container 17

Amount Per Serving

Calories 80 Calories from Fat 10

% Daily Value*

Total Fat 1.5g **2%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 160mg **7%**

Total Carbohydrate 13g **4%**

Dietary Fiber 1g **4%**

Sugars 1g

Protein 3g

Vitamin A 0% • Vitamin C 0%

Calcium 0% • Iron 4%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

ALA: 560mg per slice



Honey and Bran Bread with Flaxseed

Ingredient	Amount (Baker's %)
Bread flour	85.5
Wheat bran	4.5
Milled flaxseed	10
Water	63
Honey	15
Salt	2.25
Canola oil	1
Yeast, compressed	4.25
Vital wheat gluten	4
Ascorbic acid	100ppm
CSL or SSL (optional) ^b	0.5

^aBased on flour + bran + flaxseed = 100%

^bCalcium or sodium stearoyl lactylate (emulsifiers)

Processing:

- Mix to full development.
- Give 20-30 minutes floor time.
- Scale, round.
- Intermediate proof, 5-10 minutes.
- Mold.

- Full proof.
- Bake at 380°F - 400°F for approximately 25 minutes.

Yield: Scale at 20oz per loaf for 1 pound loaf.

Nutrition Facts	
Serving Size 1 slice (26g)	
Servings Per Container 17	
Amount Per Serving	
Calories 70	Calories from Fat 10
% Daily Value*	
Total Fat 1g	2%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 140mg	6%
Total Carbohydrate 13g	4%
Dietary Fiber 1g	4%
Sugars 2g	
Protein 3g	
Vitamin A 0%	• Vitamin C 0%
Calcium 0%	• Iron 4%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories 2,000 2,500
Total Fat	Less Than 65g 80g
Saturated Fat	Less Than 20g 25g
Cholesterol	Less Than 300mg 300mg
Sodium	Less Than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9	• Carbohydrate 4 • Protein 4

ALA: 340mg per slice



Raisin Bran Flax Muffins

Ingredient	Amount (Baker's %)
White flour	100
Milled flaxseed	16
Bran cereal	22
Milk or water	122
Baking powder	2
Honey	22
Canola oil	2
Molasses	4.4
Salt	1
Vinegar	2
Vanilla flavor	2
Raisins	40

^aBased on flour = 100%

Processing:

- Combine all dry ingredients and mix well.
- Add liquid ingredients and mix on low speed to incorporate. Do not over-mix.
- Scale.
- Bake at 400°F for approximately 18 to 20 minutes.

Yield: Approximately 14 dozen muffins (3oz each).

Nutrition Facts

Serving Size 1 muffin (69g)

Servings Per Container 1

Amount Per Serving

Calories 150 **Calories from Fat** 20

% Daily Value*

Total Fat 2g **3%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 150mg **6%**

Total Carbohydrate 31g **10%**

Dietary Fiber 3g **12%**

Sugars 11g

Protein 5g

Vitamin A 2% • Vitamin C 0%

Calcium 2% • Iron 10%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

ALA: 710mg per muffin



Banana-Nut Flax Muffins

<i>Ingredient</i>	<i>Amount (Baker's %)</i>
White flour	100
Milled flaxseed	10
Flaxseed	5
Butter or margarine	25
Sugar	50
Whole eggs	20
Banana puree	70
Baking powder	2
Baking soda	1
Salt	0.5
Vanilla	1
Nutmeg	1
Cinnamon	1.5
Nuts	10

^aBased on flour = 100%

Processing:

- Cream butter or margarine, sugar, eggs and vanilla.
- Mix all dry ingredients together and add to creamed mixture.
- Add banana puree and mix well.

Nutrition Facts

Serving Size 1 muffin (69g)
Servings Per Container 1

Amount Per Serving

Calories 270 Calories from Fat 90

% Daily Value*

Total Fat 10g **15%**

Saturated Fat 4g **20%**

Trans Fat 0g

Cholesterol 40mg **13%**

Sodium 250mg **10%**

Total Carbohydrate 42g **14%**

Dietary Fiber 2g **8%**

Sugars 18g

Protein 6g

Vitamin A 4% • Vitamin C 2%

Calcium 2% • Iron 10%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

ALA: 1,116mg per muffin

- Fold in nuts.
 - Scale.
 - Bake at 400°F for approximately 18-20 minutes.
- Yield: Approximately 12 dozen muffins (3oz each).

America's
Flax

Flax Muffins with Chocolate Chips

Ingredient	Amount (Baker's %)
White flour	100
Milled flaxseed	16
Water	65
Honey	33
Baking powder	2.5
Baking soda	2
Salt	1
Canola oil	2
Vinegar	1.5
Chocolate Chips	33.3
Vanilla flavor	2

^aBased on flour = 100%

Processing:

- Combine all dry ingredients and mix well.
 - Add liquid ingredients and mix on low speed to incorporate.
 - Add chocolate chips and mix on low speed to incorporate.
 - Scale.
 - Bake at 400°F for approximately 18 to 20 minutes.
- Yield: Approximately 10 dozen muffins (3oz each).

Nutrition Facts

Serving Size 1 muffin (74g)
Servings Per Container 1

Amount Per Serving

Calories 240 **Calories from Fat** 50

% Daily Value*

Total Fat 6g **9%**

 Saturated Fat 2g **10%**

 Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 400mg **17%**

Total Carbohydrate 42g **14%**

 Dietary Fiber 2g **8%**

 Sugars 14g

Protein 6g

Vitamin A 0% • Vitamin C 0%

Calcium 2% • Iron 8%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

ALA: 1,113mg per muffin



Flax Squares with Oatmeal-Mallow

Ingredient	Amount	
	Pounds	Ounces
Marshmallows	2	4
Butter or margarine	-	10
Vanilla	-	2
Rolled oats	1	2
Coconut, unsweetened	-	14
Milled flaxseed	-	14
Chopped nuts	-	10
Wheat germ	-	10
Bran	-	10
Salt	-	2
Cocoa, unsweetened	-	5

Processing:

- Melt margarine or butter and marshmallows in large saucepan, stirring constantly.
- Remove from heat and add remaining ingredients.
- Press into sheet pan and chill until solid.
- Cut into squares.

Yield: Approximately 65 squares (2oz each).

Nutrition Facts

Serving Size 1 bar (57g)
Servings Per Container 1

Amount Per Serving

Calories 250 **Calories from Fat** 130

% Daily Value*

Total Fat 14g **22%**

Saturated Fat 6g **30%**

Trans Fat 0g

Cholesterol 10mg **3%**

Sodium 380mg **16%**

Total Carbohydrate 28g **9%**

Dietary Fiber 6g **24%**

Sugars 10g

Protein 6g

Vitamin A 2% • Vitamin C 0%

Calcium 2% • Iron 10%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

ALA: 1,650mg per bar



Flax Scones with Cinnamon

Ingredient	Amount (Baker's %)
White flour	100
Milled flaxseed	15
Sugar	20
Baking soda	1
Baking powder	2.5
Salt	1.5
Nutmeg	1.5
Cinnamon	1.25
Butter or shortening	35
Buttermilk	60
Egg wash	As needed

^aBased on flour = 100%

Processing:

- Combine all dry ingredients and mix well.
- Add butter or shortening until a pea sized mealy texture forms.
- Add liquid until just incorporated.
- Roll dough to be about $1/2$ inch thick.
- Cut with 3-inch round cutter.
- Brush with egg wash.
- Bake at 375°F for approximately 25 minutes.

Note: Raisins, nuts or other ingredients may be added for variety.

Yield: Approximately 6 dozen scones (3oz each).

Nutrition Facts	
Serving Size 1 scone (70g)	
Servings Per Container 1	
Amount Per Serving	
Calories 280	Calories from Fat 110
% Daily Value*	
Total Fat 13g	20%
Saturated Fat 7g	35%
Trans Fat 0g	
Cholesterol 30mg	10%
Sodium 500mg	21%
Total Carbohydrate 37g	12%
Dietary Fiber 2g	8%
Sugars 8g	
Protein 7g	
Vitamin A 6%	• Vitamin C 0%
Calcium 4%	• Iron 10%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories 2,000 2,500
Total Fat	Less Than 65g 80g
Saturated Fat	Less Than 20g 25g
Cholesterol	Less Than 300mg 300mg
Sodium	Less Than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
	Fat 9 • Carbohydrate 4 • Protein 4

ALA: 1,113mg per scone



Pastry Crust with Flaxseed

Ingredient	Amount (Baker's %)
White flour	100
Milled flaxseed	15
Salt	1
Sugar	2.5
Shortening (use chilled)	30
Cold water	variable

^aBased on flour = 100%

Processing:

- Combine dry ingredients and mix well.
- Cut in shortening until a small pea-sized mealy texture forms.
- Add small amounts of cold water as needed to form a workable dough. Do not over-mix.
- Roll dough to be approximately $\frac{1}{4}$ inch thick.
- Place in greased tins.

Yield: Depends on size of tins used.

Nutrition Facts

Serving Size 1 slice (30g)
Servings Per Container 8

Amount Per Serving

Calories 130 **Calories from Fat** 60

% Daily Value*

Total Fat 7g **11%**

Saturated Fat 1.5g **8%**

Trans Fat 2g

Cholesterol 0mg **0%**

Sodium 75mg **3%**

Total Carbohydrate 15g **5%**

Dietary Fiber 1g **4%**

Sugars 0g

Protein 3g

Vitamin A 0% • Vitamin C 0%

Calcium 0% • Iron 6%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

ALA: 580mg per slice

Cinnamon Buns with Flaxseed

<i>Ingredient</i>	<i>Amount (Baker's %)</i>
Salt	2
Brown sugar	16.6
Shortening	16.6
Nonfat dry milk	4
Eggs	4
Water	54
Yeast (compressed)	8
Vanilla	0.4
<i>Bread flour</i>	<i>66.6</i>
<i>Whole wheat flour</i>	<i>33.3</i>
Milled flaxseed	15
<i>Filling</i>	
Granulated sugar	54.7
Butter	33.6
Cinnamon	7.7
<i>Icing</i>	
Icing sugar	94.6
Milk	23.6
Vanilla	1.8

Processing:

- Cream the salt, sugar, shortening and nonfat dry milk until light.
- Add the eggs gradually.
- Add the water, yeast and vanilla.
- Add the flours and milled flaxseed and mix until smooth.
- Ferment 30 minutes and sheet the dough.
- Spread the filling, roll up and slice into buns.
- Proof 1 hour (80°F, 80% RH).
- Bake 20 minutes at 375°.

Nutrition Facts

Serving Size 1 roll (72g)
Servings Per Container varies

Amount Per Serving

Calories 260 **Calories from Fat** 100

% Daily Value*

Total Fat 12g **18%**

Saturated Fat 5g **25%**

Trans Fat 1.5g

Cholesterol 20mg **7%**

Sodium 230mg **10%**

Total Carbohydrate 36g **12%**

Dietary Fiber 2g **8%**

Sugars 17g

Protein 5g

Vitamin A 4% • Vitamin C 2%

Calcium 4% • Iron 10%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

ALA: 710mg per bun

