

Chia seed nutrient composition and its relation with human daily nutrient requirements

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Introduction

The following discussion is intended to make it easier to understand the nutritional composition of chia seeds in relation to the nutritional recommendations that are being made and which will contribute to a healthy diet.

Daily value

Percentage of daily value (%DVs) are based on recommendations for a 2,000 calorie diet. For labeling purposes, the U.S. Food and Drug Administration set 2,000 calories as the reference amount to calculate %DVs. The %DV shows the percentage (or how much) of the recommended daily amount of a nutrient is in a serving of food. By using the %DV, you can tell if this amount is high or low. Your actual daily values may be higher or lower depending on your calorie needs, since if you are like most people, may not know how many calories you consume in a day. Still you can still use the %DV as a frame of reference, whether or not you eat more or less than 2,000 calories each day.

Serving size

The size of the serving on the food package affects the nutrient amounts listed on the label. A 25 gr. serving size is based on the daily amount of omega-3 fatty acid recommended by a number of nutrition organizations such as the Food and Agricultural Organization/World Health Organization (2002), British Nutrition Foundation (1999) and Health and Welfare Canada (1990), and on the results of the trial which determined the total cholesterol, LDL, HDL, and triglycerides effects in humans, following chia seed consumption (Coates and Ayerza, 2002).

Serving per container

The number of servings per container, four and ten for 100 and 250 gr. containers, respectively, is based on the chia seed packages already in the market.

Content claims

Nutrient content claims of the Nutritional Facts Panel makes it easy to distinguish one claim from another, when comparing different products. The chia seed content claims were set up using the classification system developed by The National Academy of Science (1999, 2000) and the US Food and Drug Organization (1999). However, as these two organizations have not determined daily recommendations for omega-3 fatty acid values, the values and content claims for these were set up using the officially recommended minimal nutrient intakes established by Health and Welfare Canada (1990).

Nutritional Facts Panel

Chia Seeds				
Nutrition Facts				
Serving size: 25 gr				
Serving per container: 4 (100 gr container); 10 (250 gr container)				
Total calories 134		Calories from fat 73.8		
Amount per serving	25 gr/day	DV gr	% DV	Content claims
Cholesterol	0	300 mg	Free	Free
Sodium	<5 mg	2400 mg	Free	Free
Total fat	8.2 gr	65 gr	12.6	-----
Saturated fat	0.7 gr	20 gr	3.5	Low saturated fat
Trans fatty acids	0	-----	-----	Free
Omega-3 fatty acids	5.2 gr	1.3 gr	400	Source of omega-3
Protein	4.3 gr	50 gr	8.6	
Total carbohydrate	11.0 gr	300 gr	3.7	
Dietary fiber	6.9 gr	25 gr	27.6	High
Niacin	1.6 mg	16 mg	10	Good source
Riboflavin (B ₂)	0.01 mg	1.3 mg	< 1	----
Thiamin (B ₁)	0.05 mg	1.2 mg	4.2	----
Vitamin A	11 I.U.	5000 I.U.	< 1	----
Calcium	205 mg	1000 mg	20.5	High

Phosphorus	231 mg	700 mg	33	High
Magnesium	98 mg	420 mg	23.3	High
Manganese	1.46 mg	2.3 mg	63.5	High
Zinc	1.7 mg	11 mg	15.5	Good source
Copper	0.53 mg	2.0 mg	26.5	High
Potassium	175 mg	3500 mg	5.0	----
Iron	4.1 mg	18 mg	22.8	High
Molybdenum	0.05 mg	0.075 mg	66.7	High
Aluminum	0.5 mg	-----	-----	
Boron	0.35 mg	-----	-----	

Nutrition Fact Comments

The nutrients

Limit these: The nutrients listed first are the ones Americans and other Western Countries people generally eat in adequate amounts, or even too much. They are identified in brown on the chart as Limit these Nutrients. Eating too much fat, saturated fat, trans fatty acids or too much sodium increase your risk of certain chronic diseases, like heart disease, some cancers, or high blood pressure. Eating too many calories is linked to overweight and obesity. Chia seeds are free of sodium, cholesterol, and trans fatty acids, and low in saturated fat content.

Get enough of these: Americans often don't get enough dietary fiber, vitamin A, vitamin C, calcium, and iron in their diets. They are identified in blue on the chart as Get Enough of these Nutrients. Eating enough of these nutrients can improve your health and help reduce the risk of some diseases and conditions. For example, getting enough calcium can reduce the risk of osteoporosis, in which bones become brittle and break as one ages. Chia seed are a high source of dietary fiber, calcium, phosphorus, magnesium, manganese, copper, iron and molybdenum, and a good source of niacin and zinc, and a source of omega-3 fatty acids.

Healthy food

Chia seed is considered a Food Supplement by the FDA, however, it meets the food nutrient content regulations established by this organization, and hence can be claimed as a “healthy food” (FDA, 1999).

References

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