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EXTRACTING SOY-MILK AND ANALYSIS

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ABSTRACT

Soymilk is extracted from the soybean. Many choose soymilk because of its versatility and ability to be used as a milk replacement in recipes. It is a good source of protein for those who are lactose intolerant. It is available in chocolate and vanilla flavors. In countries such as China and India, some people also drink salted soymilk.

The health benefits of soymilk include lowering risk of cholesterol, cancer, and obesity. It helps in improving cardiovascular health and reducing the risk of many postmenopausal problems. High-quality protein and vitamin content of soymilk makes it a beneficial supplement for a plant-based diet.

With the cost-effectiveness of soy and its increasing popularity in diets around the world, research studies are beginning to look at the other health benefits of this natural plant product.

Soya bean is readily available at most places and is cost efficient with the amount of nutrients it packs. At the same time extraction of soy milk is a fairly easy process and can be done with basic household equipment with zero requirements of chemicals or industrial equipment.

Keywords: Cardiovascular, Cholesterol, Lactose intolerance, Postmenopausal, Supplement.

I.INTRODUCTION

Soy milk is a great source of macronutrients and is a natural energy drink that is rich in all nine essential amino acids. Your body assembles these amino acids into new proteins, including antibodies essential for immune system function, structural proteins that hold your tissues together, and enzymes that help your cells produce energy. Each cup of unsweetened, plain soy milk provides 7 grams of protein.

People who are allergic to milk products or are lactose intolerant can have soy milk as a healthy alternative. It has a longer shelf life than dairy products and hence once made can be consumed over a longer period of time.

II.SOY MILK NUTRITIONAL FACTS [1]

Drinking soy milk also helps boost your calcium and iron. Your body relies on the calcium from your diet to maintain dense and strong bone tissue. Without it, your body draws on your bones as a source of calcium, which reduces your bone density over time. A cup of unsweetened plain soy milk boasts a calcium content of 299

milligrams, which contributes 30 percent toward your recommended daily calcium intake. The iron in soy milk helps your red blood vessels function properly, helping ensure that all the tissues throughout your body get the oxygen they need. Each serving of soy milk provides 1.1 milligrams of iron -- 14 and 6 percent of the daily iron intakes recommended for men and women, respectively.

Vitamins	***Percentage***
Vitamin A	10%
Vitamin C	0%
Calcium	45%
Iron	6%
Vitamin D	30%
Riboflavin	30%
Folate	15%
Vitamin B12	50%
Phosphorous	25%
Magnesium	15%

Soy milk also helps you consume B-complex vitamins, and serves as an especially rich source of riboflavin, or vitamin B-2, and vitamin B-12. Getting enough vitamin B-12 in your diet helps your cells produce DNA, aids in red blood cell function and also keeps your nerves healthy. A serving of soy milk provides 3 micrograms of vitamin B-12, more than the 2.4 micrograms you need each day. The riboflavin in soy milk helps your cells produce energy, and it also shields your DNA from damage. Drinking a cup of soy milk boosts your riboflavin by 0.51 milligrams -- 39 percent of the recommended daily intake for men and 46 percent for women. Soy-Milk nutritional facts.

Nutrient	***Amount per serving(240mL)***
Calories	110 Kcal (40 of which is fat)
Total Fat	4.5g
Cholesterol	0mg
Sodium	95mg
Potassium	380mg
Total Carbohydrates	9g
Protein	8g

III. ADVANTAGES OF SOY MILK [2]

3.1. Lowers blood pressure and cures hypertension

Soy milk treats hypertension by lowering both systolic and diastolic blood pressure. Drinking soy milk every day has been seen to induce the urinary excretion of a particular flavonoid, which is what reduces blood pressure.

Soy milk also helps diabetics who face kidney-related problems (nephropathy) with better blood pressure control. It contains a good amount of polyphenols, which might increase the bioavailability of nitric oxide and thus influence blood pressure levels.

3.2. Treats Type 2 Diabetes

With its high calcium and low fat content, soy milk is the perfect non-dairy option for your diabetic meal plan. It helps diabetics by lowering cholesterol and preventing cardiovascular issues. Its effect on lipid levels is shown to be beneficial in the treatment of diabetes. However, remember to drink soy milk in moderation as excess protein and carbs can mess up your diet plan.

3.3. Accelerates fat loss

The fiber in soy milk has a considerable effect on the body mass index, LDL cholesterol levels, and body weight, which is useful in the treatment of obesity, hypertension, and excess lipid levels. When combined with a low-fat diet, the soy proteins reduce weight but retain muscle mass in obese individuals.

3.4. Improves Cardiovascular Health

According to the USFDA, soy is one of the products that lowers cholesterol levels in the body and prevents heart-related diseases. Soy products like soy milk improve plasma lipid levels and reduce the risk of cardiovascular disease, especially in those with high cholesterol. The high levels of polyunsaturated fats, vitamins, fiber, and minerals and low saturated fats also assist in keeping your heart healthy.

Your body takes care of the blood flow through vascular reactivity, which alters the build of the blood vessels as and when required. Soy milk improves this reactivity and keeps your heart strong.

IV. PREPARATION OF SOYMILK [3]

4.1 Supplies:

- Container for soaking beans
- Blender
- Butter Muslin or Nut Milk Bag
- Heavy-bottom Pan

4.2.Ingredients:

- ½ cup white soybeans
- 2-3 cups water for soaking
- 4 cups water for blending
- Sugar to taste (optional)

4.3.Instructions:

1. **Soak** soybeans in 2-3 cups of water **overnight.**
2. **Discard** water and **rinse** soybeans.
3. **Remove** skins as best you can.
4. **Add** soybeans and 4 cups water to blender.
5. **Blend** until smooth.
6. **Strain** the blended mixture using butter muslin or a nut milk bag. A tight-weave cloth is preferable, as twisting the top tightly enables you to continue squeezing out more milk.

7. **Heat** the strained milk in a heavy-bottom pan to 212ºF (100ºC). **Hold** this temperature for **20 minutes**, stirring frequently to prevent sticking. **Cool** the milk and store.
8. **Refrigerate** up to 4 days.

V. CONCLUSION

Soy Milk is a cheap and convenient source of major macronutrients and is a great substitute for those who are lactose intolerant and lack industrial equipment.

There are no complications while making soy milk and the process is straightforward and not very time consuming. The Soy Milk having a long shelf life can be used for longer periods without the need to grind daily for it.

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