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POPULAR ARTICLE



Nutritional and Health Beneficial Properties of Walnuts

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Walnut (*Juglans regia*), an edible seed of a drupe, belongs to the family *Juglandaceae* consumed as nut that provides antioxidants, proteins, fat, some vitamins and minerals that provides nourishment. It's botanical structure is compared with human brain due to which it is known as brain nutrient. Walnuts are highly rich in mono unsaturated fatty acids Omega-3 fatty acid and arachidonic acid. Walnuts also contain a good source of many phyto-chemical substances thus they are considered as the food that provides nourishment for healthy life. Walnuts are also known for its medicinal uses such as it helps to treat cancer, asthma, helminthiasis, diarrhea, skin disorders, sinusitis, eczema and other infectious diseases. Walnuts can be consumed raw, roasted, salted and flavored, due to its pleasant taste it can be used as flavor enhancer in biscuits, pizza, cake, walnut ice-cream etc.

Walnut composition:

Walnut contains unsaturated fatty acids such as palmitoleic acid(0.77per100g),oleic acid(25.26 per 100g),linoleic acid(57.10per 100g).They also contain saturated fatty acids like myristic acid(0.24 per 100g),Palmitic acid(4.28 per 100g),stearic acid(1.85 per 100g),archidic acid(0.19per100g)(Muradoglu *et al.*,2010).Walnuts are highly rich in vitamins such as vitaminA(20IUper 100g),vitamin c(1.3mg per 100g),vitamin k(207mcg per 100g) vitamin E(20.8 mg per 100g) , Folate(98mcg per 100 g),Thiamin (0.54mg per 100g).They are also rich in minerals such as potassium(441mg per 100g),calcium(98mg per 100g), iron(2.9 mg per 100g),copper (1.5 mg per 100g), sodium (2mg per 100g).

Nutritional Benefits:

Proteins-Walnuts contain high amount of proteins usually 13.6 to 18.1g crude protein which are used to support physiological processes and a muscle repair.

Fiber-Helps lower cholesterol and improves digestion.

Vitamins and Minerals-Walnuts are an excellent source of several vitamins and minerals such as:

Vitamin E: As compared to other nuts, walnuts contain high level of a special form of Vitamin E called gamma-tocopherol. This gamma-tocopherol has high antioxidant property and plays an important role against oxidation of fats.

Folic acid: It is also known as vitamin B₉, and it plays an important role in biological functions of our body. It is used to reduce the risk of birth defects and anemia.

Phosphorus: About 1 per cent of our body is made up of phosphorus, a mineral that is mainly present in our bones. It has numerous functions in our body.

Vitamin B₆: The vitamin B₆ present in walnuts helps to strengthen the immune system and also support nerve health. The deficiency of vitamin B₆ may cause anemia.

Copper: This mineral helps to maintain healthy bones and blood vessels which helps to prevent osteoporosis and cardiovascular diseases. This mineral helps to maintain immune system function and good heart health.

Manganese: This trace mineral is found in the highest amount in all the nuts including walnuts.

Riboflavin: It helps to treat migraine headaches and reduce the risk of cancer.

Niacin: Walnuts also contain niacin that helps to reduce cholesterol levels, treat type 1 diabetes and boosts brain function.

Ellagic acid: This antioxidant is found in high amount in walnut, along with other related compound like ellagitannins. Ellagic acid may reduce the risk of heart diseases and cancer.

Catechin: It is a flavonoid antioxidant that may have various health benefits including promoting heart health.

Melatonin: A neurohormone which helps to regulate body clock and reduces the risk of heart diseases.

Phytic acid: phytic acid also known as phytate is a very beneficial antioxidant that helps to reduce the chances of cancer and kidney stones.

HEALTH BENEFITS OF WALNUTS

Walnuts have been widely consumed due to its various health benefits and appreciated flavor and medicinal attributes.

Prevent Cancer

Walnuts are a rich source of beneficial plant compounds, so they are effective part of a cancer –preventive diet. They contain several bio active components that have anti cancer properties including phytosterols, gamma-tocopherol, omega-3 fatty acids, ellagic acid and various antioxidant Polyphenols. The regular consumption of walnuts is effective in preventing colon and prostate cancer due to the significant presence of alpha- linoleic acid and tocopherols which both have anti-carcinogenic effects.

Prevent diabetes

Walnuts control blood glucose levels and build resistance for insulin to reduce the risk of developing type-2 diabetes. They also contain dietary fibers that take long to digest which ultimately ensures slow release of sugar in blood stream.

Prevent heart diseases

Due to the presence of polyphenols, they are known to possess a number of properties associated with reducing the risk of developing neurodegenerative diseases and cardiovascular diseases. Many studies showed that eating walnuts may combat risk factors for heart diseases by:

- Lowering LDL(bad) cholesterol.
- Reducing inflammation.
- Improving blood vessel function, thus cutting the risk of plaque buildup in our arteries.

These effects are likely caused by the beneficial fat composition of walnuts, as well as their rich antioxidant content.

Boost immune system

Walnut contains important vitamins such as: riboflavin, niacin, thiamine, pantothenic acid, vitamin B6, and folate that helps to bolster the immune system.

Weight management and satiety

Walnuts contain a good amount of omega-3 fatty acids and plant sterols that suppress hunger and further help in weight loss.

Improve bone health

Walnuts contain manganese, calcium, and copper which help to prevent osteoporosis and help in strengthening of bones.

Lower Blood pressure

Walnuts contain omega-3 and alpha-linolenic acid which helps in reducing blood pressure.

Improve Brain function:

The regular consumption of walnuts plays an important role in significant improvement of memory as well as learning skills and also slow down the progression of Alzheimer's disease. These effects are likely due to the high antioxidant content of walnuts.

CONCLUSION:

Walnuts can be used as a healthy fruit that can be typically used in an effort to maintain or improve human health and can be incorporated in different products to improve flavor and taste. Walnuts are nutrient rich with wide-ranging cardiovascular and metabolic benefits, which can be readily incorporated into healthy diets. As they are rich in antioxidants and omega-3-fatty acids, they can be used in wide range of products

like ice-cream, cakes, biscuits, ready-to-eat snack foods in order to maintain or improve human health.

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