

Importance of Pumpkin Seeds and Its Health Benefits

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Introduction

Pumpkin seeds are largely regarded as agro-industrial waste. *Cucurbita* species belonging to the *Cucurbitaceae* family are nutraceuticals that have been used in the treatment of various diseases since ancient times. *Cucurbita* spp., which is extremely nutritional, contains many bioactive components. In the current literature, there are many studies on its chemical structure as well as protective and health-improving effects. On the other hand, there are a limited number of studies reporting allergic effects. In addition, in some studies, alternative techniques that can be used for the inclusion of *Cucurbita* spp. in human nutrition more and differences in nutritional characterization caused by pre-treatments applied to obtain maximum yield from the product were examined. (Kaya and turkar2022) The nutritional composition of pumpkin seeds has been investigated in many studies for various species and generally contains around 30-50% protein and around 40% fat. Pumpkin seeds also contain various macro and micronutrients such as carbohydrates, fiber, tocopherol, carotenoid, vitamin B2, vitamin C, phosphorus, zinc, iron, copper, magnesium, potassium, calcium, and selenium. The fatty acid composition of pumpkin seeds mostly consists of palmitic, stearic, oleic, and linoleic acids. In addition, pumpkin seeds contain abundant lignans, such as phospholipids, secoisolariciresinol, and lariciresinol, and phytoestrogens, sterols, flavonoids, anthocyanin and phenolic compounds (Amin *et al.*, 2020; Dong *et al.*, 2021;). Total phenolic substance, flavonoid, carotenoid, and mineral substance contents in the peel, pulp, and seeds of *C. maxima*. In their study, they reported that pumpkin seeds had a higher total phenolic matter and total flavonoids compared to peel and pulp. On the other hand, they reported that there were more K, Na, and Fe in the pulp compared to the seeds and peels (Hussain *et al.*, 2021). Pumpkin seeds contain 446 calories per 100 gm.

Importance of pumpkin Seeds

- Pumpkin seeds are rich in phytochemicals like flavonoids and phenolic acids. They also contain small amounts of vitamin E and carotenoids.
- The high level of carotenoids found in pumpkins has important functions in maintaining heart health and lowers blood pressure and cholesterol (Paul *et. al.*, 2020)
- Pumpkin seeds may help relieve symptoms of prostatic hyperplasia (BPH), a condition in which the prostate gland enlarges, causing problems with urination.
- Whole pumpkin seeds are a good source of fiber.
- Pumpkin seeds are a good source of tryptophan and magnesium, both of which help promote good sleep.
- Pumpkin seeds are highly nutritious and packed with powerful antioxidants.
- The benefits of this super food for women with PCOS are Helps reduce hair loss since they are a rich source of magnesium; they are excellent for bone formation. Decreases the risk of osteoporosis in women after their menopause. Apart from this, they are a natural source of tryptophan, an amino acid that helps to improve sleep patterns.
- Pumpkin seeds are high in magnesium, which most people don't get enough of in their diet. Magnesium content helps regulate blood sugar levels, lowering your diabetes risk. Studies show pumpkin seeds also help people with diabetes maintain blood sugar control to manage the disease.
- Pumpkin seeds can stop the growth of breast and prostate cancer cells. They also induce apoptosis or cancer cell death. These effects are largely attributed to pumpkin seeds' high antioxidant activity, but much more research is needed to study a broader range of cancers.
- Pumpkin seeds are a natural source of tryptophan, an amino acid that promotes sleep. The zinc, copper, and selenium in pumpkin seeds can also affect sleep duration and quality. Finally, studies show that magnesium can help reduce stress and anxiety, contributors to insomnia.
- Pumpkin seeds are rich in vitamins and minerals like manganese and vitamin K, both of which are important in helping wounds heal. They also contain zinc, a mineral that helps the immune system fight bacteria and viruses.

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