

Sesame Seed and its Health Benefits – A Review

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SUMMARY

Sesame (*Sesamum indicum* L.) seeds have been grown in tropical regions throughout the world since prehistoric times. Sesame seed, a rich source of protein, is one of the first crops processed for oil production. Its non-culinary application includes its use as an ingredient in soap, cosmetics, lubricants and medicines. Sesame seeds also contain two unique substances: sesamin and sesamol known to have a cholesterol-lowering effect in humans and to prevent high blood pressure. Sesame, which is known for properties of good health, consists of a plethora of nutrients viz., proteins, carbohydrates, antioxidants, lignans, tocopherols and other micronutrients. Benefits of this enigmatic crop include properties of anticancer, antioxidative, antiimmunoregulation and antihypersensitivity. Covering wide agro ecological regions of the world, different varieties of sesame seeds are available.

INTRODUCTION

India is one of the major producers of many oilseed crops like groundnut, mustard, rapeseed, sesame seed, etc. Traditionally, Indians consume substantial quantity of edible oils mainly as a cooking medium. Among the oilseed crops, sesame has been cultivated for centuries, particularly in Asia and Africa, for its high content of edible oil and protein. It is commonly known as til (Hindi), hu ma (Chinese), sesame (French), goma (Japanese), gergelim (Portuguese) and ajonjoli (Spanish) (Kandangath *et. al.*, 2010). Sesame is cultivated in all seasons namely kharif, pre-rabi, rabi and summer. It is grown in more than one season in some parts and in all the seasons in other parts of the country. It is a short duration crop and fits well in a number of multiple cropping systems either as a catch crop or a sequence crop. The many health benefits of sesame seeds are due to its nutritional content, including vitamins, minerals, natural oils and organic compounds which consist of calcium, iron, magnesium, phosphorus, manganese, copper, zinc, fiber, thiamin, vitamin B₆, folate, %, and tryptophan (Singh *et. al.*, 2016).



Nutritional value of Sesame seed

| Parameter | Nutritive Value | Parameter | Nutritive Value |
|---------------|-----------------|------------|-----------------|
| Energy | 573 Kcal | Pyridoxine | 0.790 mg |
| Carbohydrates | 23.45 g | Thiamin | 0.791 mg |
| Protein | 17.73 g | Riboflavin | 0.247 mg |
| Total Fat | 49.67 g | Vitamin A | 9 IU |
| Dietary Fiber | 11.8 g | Calcium | 975 mg |
| Folates | 97 µg | Copper | 4.082 mg |
| Niacin | 4.515 mg | Magnesium | 351 mg |

(Source – USDA Database)

Pharmacological benefits of sesame seed and oil

- Sesame seed and oil possess immense pharmaceutical applications and have played a prominent role in Chinese and Indian systems of medicine.
- Sesame oil has burn healing effects, when rubbed on the skin soothes a minor burn or sunburn, as well as helps in the healing process.
- Sesame oil is ideal massage oil due to its excellent emollient properties.
- When applied topically, it aids in healing the chronic diseases of the skin.
- In India, it has been used as an antibacterial mouthwash, to relieve anxiety and insomnia and in the treatment of blurred vision, dizziness and headache.
- Sesame oil is naturally antibacterial for common skin pathogens such as *Staphylococcus* and *Streptococcus* as well as common skin fungi such as athlete's foot fungus (Pathak *et al.*, 2014).

Food and industrial uses of sesame

There are many foods with Sesame as a component. Europeans use it as a substitute for olive oil. Sesame oil is an excellent salad oil in Japanese diet for cooking fish. The seeds are also used on bread and then eaten in Sicily. Cakes are made by Greece from Sesame oil, while in Africa the seeds are used as soup flavor enhancing ingredient. Hulled Sesame seed enriches bakery and candles and is also the base for the creamy, sweet wholesome tahini. Sesame seeds contain three times more calcium than a comparable measure of milk. Today, energy demand is increasing while world fossil energy resources are increasingly depleted. (Amandeep *et al.*, 2019).

CONCLUSION

Sesame seed acts as a microcapsule with bioactive components comprising high variability and showing medical importance. Sesame seed is a rich source of biologically active and health promoting phytochemicals such as sesamin, sesamol, tocopherols, PUFA, phytosterols, phytates and other phenolics. Wide variation in nutritional components (lignans, tocopherols and phytosterols) found in the Indian sesame germplasm collections offer a great potential for sesame breeding. The sesame improvement programs in terms of trait enhancement by sesame breeders would help in selecting genotypes with high nutritive value and production. Moreover, sesame is a promising target oilseed crop for biotechnological applications, in that sesame seed contains a large number of bioactive substances that are important for human health and nutrition.

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