

Sunflower Seeds: Nutritional Value, Processing and Industrial Uses

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Sunflower is an annual plant whose seeds are used for oil extraction. The seeds may be black, white, or striped. In India, sunflower is widely cultivated in states such as Karnataka, Maharashtra, and Andhra Pradesh. Sunflower (*Helianthus annuus*) is an important oilseed crop globally. Sunflower seeds are widely used in edible oil production, snacks, bakery products, and various industrial applications. For M.Tech (Food Processing Technology) students, studying the nutritional value, chemical composition, processing technology, and storage of sunflower seeds is highly important.



Nutritional Value

Sunflower seeds are rich in the following components:

Fat (40–50%) – Mainly unsaturated fatty acids (Linoleic acid, Oleic acid)

Protein (18–22%)

Carbohydrates (20%)

Vitamin E (Tocopherol) – A powerful antioxidant

Minerals – Magnesium, Selenium, Phosphorus, Iron

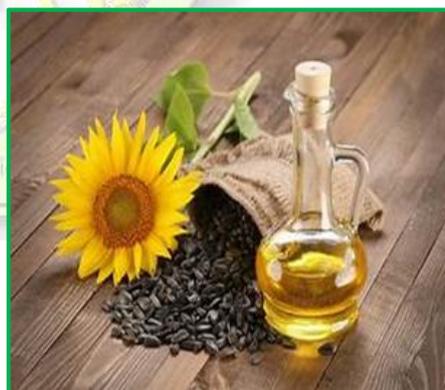
Sunflower oil is cholesterol-free and is considered beneficial in preventing heart diseases.

Chemical Composition

Sunflower oil mainly contains:

- Linoleic acid (PUFA)
- Oleic acid (MUFA)
- Palmitic acid
- Stearic acid

Due to its high linoleic acid content, sunflower oil is prone to oxidation; therefore, proper storage is necessary.



Processing Technology

(a) Primary Processing of Seeds

- Cleaning
- Dehulling
- Crushing

(b) Oil Extraction Methods

- Mechanical method (Expeller pressing)

By-products

Oil Cake – Used as animal feed

Defatted Flour – Protein-rich powder

Lecithin – Used as an emulsifier

Storage and Packaging

Moisture content should be less than 8%

Store in a cool and dry place

Use air-protected packaging to prevent oxidation (HDPE bags, metal containers)

**Industrial and Health Uses**

Edible oil

Bakery products

Snacks

Cosmetic industry

Conclusion

Sunflower seeds are highly nutritious and widely used in the food industry. With proper processing, storage, and quality control, high-quality oil and by-products can be obtained. Therefore, sunflower seeds are an important oilseed crop in the field of food processing technology.