



KAPURIYA ENTERPRISE

IMPORT-EXPORT
SPICES AND OILSEEDS



Physical properties of Sesame Seeds

Abstract.

The chemical and amino acid composition of sesame seeds is presented in the article, as well as the analysis of its consumer properties. The statistical data of the countries of exporters and importers of sesame seeds are given. According to the results of the conducted studies, it is established that sesame seeds have high nutritional and biological value. Therefore, its introduction into the composition of recipes in the manufacture of various food products will enrich the finished products with the necessary macro- and micronutrients.

Introduction

Sesame or sesame is an East Indian flower plant from the family Pedaliaceae and the genus *Sesamum*. The scientific name of sesame is *Sesamum indicum*. Sesame is a tropical, annual herbaceous plant with white and purple flowers. It is famous for its seeds, which are a source of very useful sesame oil, often it is used as a flavouring. It is a direct growing grass that has small, flat seeds of oval shape. Seeds of sesame can have several colours: red, white, black, yellow, etc., depending on the difference in varieties. As a seasoning, sesame seeds have been used since ancient times. Sesame was one of the very first flavours known to man.

Seeds of sesame are believed to have come to us from India, according to international studies. They inspired the catch phrase "open, open" from the "Thousand and One Nights", as the mature pod of this plant opens from a light touch, when it reaches maturity. Seeds of sesame come with or without film in various colours. They contain many nutrients and minerals, including copper, manganese, calcium, and iron, and are used as powders for bread, pasta, vegetables, desserts. Also, from the crushed grains, oil and paste are obtained.

Seeds of sesame are highly valued for the high content of fats, from which sesame oil is extracted, it is very resistant to rancidity. Seeds of sesame are the main ingredients in oriental sweets, such as tahini pasta and halva.

Table 1. – Chemical composition of sesame seeds

[3] Characteristic	Content in sesame seeds
Proteins, g/100 g	19,4
Fats, g/100 g	48,7
Carbohydrates, g/100 g:	
- mono- and disaccharides	2,0
- starch	10,2

Minerals, mg/100 g:	
Na	75
K	497
Ca	1474
P	720
Vitamins, mg/100 g:	
B1	1,27
B2	0,36
Energy value, kcal	605

Use of sesame seeds humanity began very long ago. It was used for therapeutic purposes in Ancient Greece, Rome, and China. Sesame seed in ancient Babylon was the food of the gods. Mentions of sesame oil are reflected in the ancient cultural heritage of many countries, as well as in the Scriptures. The first one who described the maximum number of beneficial properties of sesame and sesame oil was Avicenna, who created a huge work on treatment in the 11th century.

Sesame (*Sesamum indicum* L.) is the oldest indigenous oilseed crop, with the longest history of cultivation in India. Sesame or gingelli is commonly known as til (Hindi, Punjabi, Assamese, Bengali, Marathi), tal (Gujarati), nuvvulu, manchi nuvvulu (Telugu), ellu (Tamil, Malayalam, Kannada), tila/pitratarpa (Sanskrit) and rasi (Odia) in different parts of India. Sesame seed (contains 50% oil, 25% protein and 15% carbohydrate) is used in baking, candy making and other food industries. It is an integral part of rituals, religion and culture. The oil is used in cooking, salad oils and margarine (contains about 40% oleic and 40% linoleic acid). Sesame oil and foods fried in sesame oil have a long shelf life because the oil contains an antioxidant called sesamol. The oil can be used in the manufacture of soaps, paints, perfumes, pharmaceuticals and insecticides. Sesame meal is an excellent high quality protein (40%) feed for poultry and livestock. Sesame seeds are store house of energy and very rich in vitamins E, A, B Complex and minerals viz., calcium, phosphorus, iron, copper, magnesium, zinc and potassium. It is a best substitute for mother's milk especially in case of milk allergies. Sesame seed contains extraordinary quantities of methionine, tryptophan, amino acids with innumerable benefits. The oil is used as the base for Ayurvedic preparations and known as the Queen of oils. Sesame seeds are called as the seed of immortality. Studies showed that lignans found in sesame seed have remarkable antioxidant effect on human body. Til se dil or Til – dil are the ancient Hindi proverbs in India signifying the importance of sesame for heart. Sesame oil is considered as anticholesterol and highly beneficial for heart ailments. Sesame is energy rich crop, ironically however, grown on energy starved condition.

India ranks first in world with 16.73 Lakh ha area and 6.5 Lakh tonnes production. The average yield of sesame (391 kg/ha) in India is low as compared with other countries in the world. The main reasons for low productivity of sesame are its

rainfed cultivation in marginal and submarginal lands under poor management and input starved conditions. However, improved varieties and agro production technologies capable of increasing the productivity levels of sesame are now developed for different agro ecological situations in the country. A well-managed crop of sesame can yield 1200-1500 kg/ha under irrigated and 800-1000 kg/ha under rainfed conditions. The crop is grown in almost all parts of the country. The area, production and the productivity of the important states growing sesame is given in Table 2.

Table 2: Area, Production and Productivity in major states of India

State	Area('000ha)	Productionn ('000tonnes)	Productivity (kg/ha)	State	Area('000 ha)	Production ('000 tonnes)	Productivity (kg/ha)
Andhra Pradesh	67.0	22.0	328	Madhya Pradesh	314.5	157.1	500
Assam	12.0	7.0	583	Maharashtra	31.0	9.0	290
Bihar	2.5	2.2	873	Odisha	23.1	4.4	191
Chhattisgarh	18.8	5.5	293	Punjab	5.1	1.7	133
Gujarat	133.0	34.0	256	Rajasthan	415.2	122.1	294
Haryana	2.8	1.0	357	Tamil Nādu	47.6	20.9	439
Himachal Pradesh	3.0	1.1	357	Uttar Pradesh	345.0	64.0	186
Jammu Kashmir	4.8	2.1	437	Uttarakhand	2.0	1.0	500
Jharkhand	8.0	2.9	356	West Bengal	187.5	176.5	941
Karnataka	40.0	13.0	325	Others	9.9	6.1	616
				All India	1673.0	653.6	391

SESAME SEEDS













