

INTRODUCTION:

Sesame (*Sesamum indicum* L.) is the oldest indigenous oilseed crop, with longest history of cultivation in India. Sesame or gingelli is commonly known as til (Hindi, Punjabi, Assamese, Bengali, Marathi), tal (Gujarati), nuvuvulu, manchi nuvuvulu (Telugu), ellu (Tamil, Malayalam, Kannada), tila/pitratarpana (Sanskrit) and rasi (Odia) in different parts of India. Sesame seed (contain 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.

Climatic requirement:

Sesame is grown in almost all the states in large or small areas. It can be cultivated up to the latitude of 1600m (India 1200 m). Sesame plant needs fairly high temperature during its life cycle. Normally the optimum temperature required during its life cycle is between 25-35°C. If the temperature is more than 40°C with hot winds the oil content reduces. If the temperature goes beyond 45°C or less than 15°C there is a severe reduction in yield. The pollen becomes sterile at aberrant temperatures. The crop is very sensitive to excessive water in the field. Stagnation of water for long period in the standing crop will completely affect the crop. The well distributed rain during kharif season results in the good crop. During the last decade drastic changes in the climate have been experienced in the country. Aberrations in weather conditions, irregular and unevenly distributed rainfall have adverse effect on sesame yield. The abiotic stresses consequently will result in the biotic stresses which are difficult to manage. In order to tackle these problems one should

evolve appropriate varieties to tolerate abrasive weather conditions. Photo and thermo insensitive varieties, responsive to fertilizer application depending on moisture and resistant varieties to insect pests and diseases are the need of the hour.

Land preparation:

One or two ploughings followed by harrowing are recommended for pulverization and fine tilth required for good germination and plant stand. Keep the field weed free and perfectly levelled to avoid water logging to which sesame is highly sensitive.

Seed rate:

A seed rate of 5 kg/ha is needed to achieve the required plant stand. Wherever seed drill is used, the seed rate may be reduced to 2.5 to 3 kg/ha from 5 kg/ha. For easy interculture and to realize higher yield adopt line sowing.

Sowing method:

In order to facilitate easy seeding and even distribution increase the bulk by mixing the seed with either sand or dry soil or well sieved farmyard manure in 1:20 ratio. Use seed drill or deshi plough with suitable attachment for line sowing. The optimum depth for seed placement is 2.5 cm. Avoid deep seeding as it adversely affects germination and plant stand.

Growing seasons:

Sesame is grown in all the crop growing seasons viz, kharif, late kharif, rabi and summer. It is grown in more than one season in some part and in different seasons in other parts of the country.

Sesame growing seasons in India.

Season	Sowing time	Planting time	Harvesting time
Rainy (kharif)	Second fortnight of May	June - July	October - November
Late (Kharif)	Second fortnight of June to First week of July	August - September	December - January

Winter (rabi)	September - October	October - November	February - March
Summer	Second fortnight of January	January - March	April - June
Pre Kharif	Last week of January to first week of February	April - May	July

Normally, the crop is grown in plains but it also comes up successfully up to 1200 m above mean sea level. For maximum yield, sesame requires fairly high temperatures (25-35° C) and evenly distributed rainfall during its growth period.

Soils:

Sesame can be grown on a wide range of soils, however well drained light to medium textured soils are preferred. It does best on sandy loams with adequate moisture. The optimum pH range is 5.5 to 8.0. Acidic or alkaline soils are not suitable.

Cropping system and cropping sequence in sesamum:

Intercropping system	Cropping sequence
Sesame+Groundnut/Black gram (3:3)	Rice-Groundnut-Sesame, Sesame-Horse gram, Finger millet/Sorghum/Horse gram (Early)-Sesame, Sesame- Upland Rice
Sesame+Green gram /Black gram (2:2) Pigeonpea+Sesame (2:2) (In kharif)	Sesame (Early)-Gram/ Rapeseed-Mustard/ Lentil/Pea
Sesame+Pearl millet / Black gram (3:1), Sesame+Pigeonpea(4:2) Sesame+Green gram(3:3), Sesame+Soybean (2:1)	Sesame-Wheat/Green gram/Barley/Mustard Sesame-Pearlmillet/ Green gram/Clusterbean/ Mothbean
Sesame+Groundnut (1:4)	Potato-Sesame, Rice - Sesame