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Sesame

an ancient oilseed in 21st century, routing hunger and malnutrition

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*Sesame (*Sesamum indicum *L.) is arising as an effective oilseed, fighting against hunger and malnutrition. Being one of the first crops processed for oil, it is an oldest condiment and ancient oilseed of the world with 50 to 55% oil (maximum among all oilseeds and exceptionally resistant to rancidity). Its 100 g of seed contain 18 to 20% protein (32% of daily recommended values), 15.6 to 17.5% carbohydrates, 592 calories of energy and 97µg of folic acid (25% of recommended daily intake). Sesame can be consumed in many forms like roasted seeds (25g/day) can be chewed in morning, crushed seeds in sprinkled form in vegetables and salads, as tahini (butter) on bread, in cooking oil, as* Halwa *(Middle-Eastern sweet), as round balls made from palm sugar or jaggery, as milk etc. but only 25 g/day and less than 10 g/day for pregnant ladies should be taken. People from rural and tribal areas can easily cultivate sesame on their lands as sole crop or mixed crop. It can be taken in all 3 seasons. Sesame is a good cattle feed for milch animals and provides N (6%), P (2%) and K (1-1.5%) as manure to soil.*

Key words: Hunger, Malnutrition, Oilseeds, Sesame

IN India sesame is cultivated over an area of 16.73 lakh ha with 6.85 lakh tonne production and 409 kg/ha yield. The major sesame producing states are: West Bengal, Rajasthan, Madhya Pradesh, Gujarat and Uttar Pradesh. Its productivity is quite low (387 kg/ha) in Madhya Pradesh where it is mainly grown in Chhatarpur, Tikamgarh, Sidhi, Shahdol, Morena, Shivpuri, Sagar, Jabalpur, Mandla, East Nimar and Seoni districts. These areas altogether includes 50% of total tribal areas.

Package of practice

Following steps are opted in sesame farming:

Land selection: Well drained soil (particularly sandy loam) is good to take sesame. It can be taken on undulated fallow lands where water drainage is not a problem. Avoid acidic and alkaline soil with water stagnation.

Land preparation: Deep ploughing with *desi* plough and cultivator twice is good for better tilth.

Improved varieties: Some discussed varieties are recommended for Bundelkhand and Madhya Pradesh.

Crop rotation: Sesame can be taken during *kharif*, *rabi* and *zaid* as,

- Rice – sesame
- Sesame – wheat
- Cotton and sesame – wheat

Mixed cropping: Sesame can be grown with following crops in mixed cropping system,

- Sesame + *moong* (in 2:2 or 3:3 rows)
- Sesame + *urd* (in 2:2 or 3:3 rows)
- Sesame + soybean (in 2:2 or 3:3 rows)

Seed treatment: Treat seeds with Thiram @ 3g/kg seeds or Thiram (0.15%) + Bavistin (0.05%) in 1:1 before sowing against fungal diseases. Dip seeds in Agrimycin 100 solution of 0.02% for 30 min. before sowing to prevent the crop from bacterial leaf spot.

Sowing time: kharif- first week of July.

Semi *rabi*- Last week of August to first week of September.

Zaid : Second week of January to second week of February.

Sowing method and seed rate: Hand spreading- 5 to 7 kg/ha

Through seed drill in rows- 2.5 to 3 kg/ha (mix seeds with dry soil or well decomposed farmyard manure in 1:20 before sowing) with planting distance of 30 cm × 10 cm and 3 cm depth.

Mixed cropping: 2.5 kg/ha

Fertilizer management: Apply 10 tonne/ha of farmyard manure before last bukhering. N: S: K should be applied as 40:30:20 kg/ha for rainfed and 60:40:30 kg/ha for irrigated crop. Full dose of sulphur and potash and half nitrogen should be given at sowing and 25 kg/ha $ZnSO_4$ once in 3 years in deficient soils is recommended. Rest nitrogen (N) should be given 30 days after sowing or at flowering.

Irrigation: Under irrigated condition irrigation should be

Table 1. Special features of sesame varieties.

S. No.	Varieties	Duration of maturity (days)	Oil (%)	Yield (kg/ha)	Special features
1.	Kanchan (J.T.7)	-	-	800	For Bundelkhand area
2.	N 32	90-100	53	770	-
3.	T.K.G. 21	75-78	55.9	950	Resistant to *Cercospora* and bacterial leaf spot
4.	T.K.G. 22	76-79	53.3	950	Resistant to *Phytophthora* blight
5.	T.K.G. 55	76-78	53	630	Tolerant to *Phytophthora* blight and *Macrophomina* stem-root rot
6.	J.T.S. 8	80	52	650	Tolerant to *Phytophthora, Alternaria* and bacterial leafspot
7.	P.K.D.S. 99	73-77	43-49	680-739	Initially resistant to leaf and capsure borer
8.	T.K.G. 306	70	50	405	Resistant to *Phytophthora*, *Macrophomina* and *Cercospora* leaf spot
9.	Type 93	90-95	47	400-700	Resistant to bending

provided at critical stages i.e. before sowing and after flowering.

Weeding and hoeing: Perform weeding and hoeing 15 to 20 days after sowing and repeat, if required after 15 to 20 days of first weeding mechanically. For chemical weeding, spray Pendimethlin @ 1.5kg a.i./ ha or Alachlor @ 1.5kg/ha as pre-emergence.

Plant-protection: Spray Endosulfan 0.06% or 0.05% Monocrophos in 650 litre water/ha in standing crop against gall fly, leaf roller, capsule borer and bihar hairy caterpillar. In til howk moth attack, dust Carboryl @ 20 kg/ha. For disease, spray 0.25% Redomil MZ at 10-day interval thrice against-*Phytophthora* leaf spot, Thiram (0.15%) + Captain (0.15%) + Urea (2%) through stem against root rot. Spray Streptomycin 0.05% at 15 days interval twice for bacterial blight. Dimethoate or Monocrotophos 0.03% at 30, 40 and 60 days after sowing, days after sowing if phyllody is seen in the crop.

Harvesting and storage: Harvest manually, beat with sticks for seed removal and dry at 9% moisture for storage.

Yield: Sesame yields 1,000 to 1,200kg/ha in irrigated conditions and 500 to 600 kg/ha in rainfed situations.

SUMMARY

Sesame can be taken by small farmers with low inputs not only to overcome hunger and malnutrition but also to gain good market prices through practicing above recommended practices.

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