FarmLens Ltd
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Crop details

Sesame (simsim)

Sesamum indicum

Family: Pedaliaceae

Categories

Oil & Industrial

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Quick stats

Family	Pedaliaceae
Typical harvest	1.3 t/ha
Varieties	3
Pests and diseases	5
Seasons	3

Crop profile

Growth habit	annual
Days to harvest	100
Main uses	Oilseed for human consumption, paste (tahini/simsim paste), confectionary, flour and cake for feed.
Pollination	self
Origin and where it grows	Ancient oilseed crop grown across semi-arid and sub-humid tropics, particularly in Africa and Asia.

Weather, soil and spacing

Best temperature	22 - 30 °C
Rainfall	400 - 700 mm/yr
Altitude	0 - 1800 m
Best pH	6 - 7.5
Soil type	Light to medium-textured, well-drained sandy loams or loams; performs well on moderately fertile soils.
Row spacing	45 cm
Plant spacing	10 cm
Planting depth	2 cm
Seed rate	4 kg/ha

Simple notes for farmers

About the crop: This crop is annual; it grows and is harvested in one season. Harvest typically starts about 100 days after planting.

Main use: Farmers mostly grow this crop for oilseed for human consumption, paste (tahini/simsim paste), confectionary, flour and cake for feed..

Pollination: Mainly self; healthy flowers and pollinators improve fruit set.

Where it grows: Ancient oilseed crop grown across semi-arid and sub-humid tropics, particularly in Africa and Asia.. Grouped under: Oil & Industrial.

Best climate: 22 - 30 °C; 400 - 700 mm/yr; up to about 1800 m a.s.l.

Soil: Best at pH 6 - 7.5; light to medium-textured, well-drained sandy loams or loams; performs well on moderately fertile soils..

Farmer guide (Mwongozo wa Mkulima)

Planting	Direct seed in rows into a fine, firm seedbed when soils are warm and moist. Thin to desired spacing if broadcasting or drilling thick.
Transplanting	Transplanting is uncommon; aim for even stands from direct seeding.
Irrigation	Where irrigated, keep soil moist (not wet) during establishment and flowering/pod set. Avoid heavy late irrigation near maturity.
Fertigation	Under drip or sprinkler, apply modest N and P in split doses up to flowering. Sesame does not need very high N rates.
Pest scouting	Scout weekly for seedling pests (cutworms), webworms, leaf rollers, wilts and leaf spots. Monitor for pod borers and shattering near maturity.
Pruning and training	No pruning; maintain uniform plant population and good weed control in the first 4–6 weeks.
Harvest	Harvest when lower leaves yellow and most capsules turn yellow-brown but before heavy shattering. Cut plants and stand them to dry upright.
Postharvest	Bundle and dry plants on clean tarpaulins or racks, then thresh gently. Clean and dry seed to ?7–8% moisture for safe storage.

Nutrient schedule (Mbolea kwa Hatua)

#	Stage	DAP	Product	Rate	Targets (kg/ha)	Notes
1	Basal at planting	0	NPK 17-17-17	70 kg/ha	N: 12, P?O?: 12, K?O: 12	Apply in bands 5 cm beside and below the seed row, not in direct contact with seed.
2	Early topdress	20	CAN 26% N	60 kg/ha	N: 16, P?O?: 0, K?O: 0	Side-dress on moist soil when plants are 10–15 cm tall and then lightly ridge or cover.
3	Pre-flowering K boost (optional)	35	MOP (KCl)	40 kg/ha	N: 0, P?O?: 0, K?O: 24	Use mainly on K-deficient soils or higher rainfall/irrigated fields to support pod and seed filling.

Nutrient requirements

Nutrient	Stage	Amount	Unit
N	Basal	20	kg/ha
P?O?	Basal	20	kg/ha
K?O	Basal	20	kg/ha
N	Topdress_early	20	kg/ha
P?O?	Topdress_early	0	kg/ha
K?O	Topdress_early	10	kg/ha
N	Pre_flowering	10	kg/ha
P?O?	Pre_flowering	0	kg/ha

Nutrient	Stage	Amount	Unit
K?O	Pre_flowering	10	kg/ha

Varieties

Name	Country	Maturity (days)	Traits
White-seeded sesame selection	KE	95	White seed coat, good oil content, suited to smallholder rainfed systems.
High-oil sesame type	TZ	100	High oil content with moderate plant height, adapted to semi-arid environments.
Local simsim landrace	UG	105	Farmer-selected type with good adaptation and traditional food uses.

Fertilizer recommendations

Stage	Product	Rate	Notes
Basal	NPK 17-17-17	70	Apply at planting in bands 5 cm away from seed row.
Early vegetative	CAN 26% N	60	Apply 3–4 weeks after emergence when plants are 10–15 cm tall.
Pre-flowering (optional)	MOP (KCl)	40	For K-deficient soils or high-yield fields before flowering.

Pests and diseases

Name	Type	Symptoms	Management
Cutworms	pest	Young seedlings cut at or near soil surface, causing gaps in rows.	Prepare clean fields ahead of planting, destroy weeds early, and replant badly affected patches where necessary.
Sesame webworm / leaf roller	pest	Leaves webbed or rolled and skeletonised by larvae feeding inside.	Scout early, encourage natural enemies, and spot-manage severe infestations where economic.
Gall midge / pod borers (local complexes)	pest	Malformed or damaged capsules, poor seed fill and premature drying.	Rotate crops, avoid continuous sesame, destroy residues and volunteer plants.
Fusarium / Verticillium wilt	disease	Sudden wilting and yellowing of plants, brown discolouration in stem tissues.	Use clean seed, rotate with non-hosts, avoid poorly drained, heavily infested fields.
Leaf spot / blight	disease	Brown or black spots on leaves, premature leaf drop, reduced photosynthetic area.	Improve airflow, avoid overhead irrigation late in the day, and use healthy seed.

Yields

System	Typical	Min	Max	Notes
Low-input rainfed (grain)	0.6	0.3	0.8	Traditional smallholder systems in semi-arid areas with minimal fertilizer.
Managed smallholder (grain)	1.2	0.8	1.8	Improved varieties, timely planting and weeding, modest NPK.

System	Typical	Min	Max	Notes
Intensive improved (grain)	2.2	1.5	3	Well-prepared seedbeds, good fertility, weed and pest control, often with supplementary moisture.

Season calendars

Country	Region	Planting	Harves
KE	Eastern, coastal and drier mid-altitude zones	At onset of main rains or conserved early showers, avoiding very late planting that pushes maturity into heavy rains.	About 3
TZ	Central corridor, Lake zone fringes and coastal drylands	Early in the rainy season so flowering occurs before severe mid-season drought or very heavy rains.	Dry sea
UG	Northern and eastern drier mid-altitude belts	Onset of main rains or early in the first rainy season depending on local pattern.	Around

Region suitability

Country	Region	Suitability
KE	Eastern and coastal lowlands; semi-arid parts of Rift and northern Kenya	High
TZ	Central corridor, coastal and Lake zone dry fringes	High
UG	Northern and eastern drylands with light, well-drained soils	High