FarmLens Ltd

Website: farmlens.africa | App: app.farmlens.africa | Headquarters: Nairobi, Kenya

Crop details

Garlic

Allium sativum

Family: Amaryllidaceae

Categories

Vegetables

Generated: 2026-04-11 06:41

Quick stats

Family	Amaryllidaceae
Typical harvest	10.7 t/ha
Varieties	48
Pests and diseases	96
Seasons	48

Crop profile

Growth habit	annual
Days to harvest	130
Main uses	Used fresh or dried as Garlic (saumu) cloves in cooking, seasoning, pickles and traditional medicine.
Pollination	unknown
Origin and where it grows	Garlic (saumu) is grown in cool to warm, relatively dry areas and is expanding in irrigated valleys and peri-urban zones in East Africa.

Weather, soil and spacing

Best temperature	12 - 22 °C
Rainfall	450 - 650 mm/yr
Altitude	500 - 2300 m
Best pH	6.2 - 7
Soil type	Loose, well-drained sandy loam or loam with plenty of organic matter so Garlic (saumu) bulbs can expand easily.
Row spacing	25 cm
Plant spacing	10 cm
Planting depth	3 cm
Seed rate	400 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 130 days after planting.

Main use: Farmers mostly grow this crop for used fresh or dried as garlic (saumu) cloves in cooking, seasoning, pickles and traditional medicine..

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

Where it grows: Garlic (saumu) is grown in cool to warm, relatively dry areas and is expanding in irrigated valleys and peri-urban zones in East Africa.. Grouped under: Vegetables.

Best climate: 12 - 22 °C; 450 - 650 mm/yr; up to about 2300 m a.s.l.

Soil: Best at pH 6.2 - 7; loose, well-drained sandy loam or loam with plenty of organic matter so garlic (saumu) bulbs can expand easily..

Farmer guide (Mwongozo wa Mkulima)

Planting	Break Garlic (saumu) bulbs into single cloves just before planting. Plant only healthy cloves with firm skins. Place each clove upright (pointed end up) about one thumb deep, then cover lightly with soil.
Transplanting	Garlic (saumu) is normally planted directly from cloves, not from a seedling nursery.
Irrigation	Keep the soil moist but not soaked, especially during sprouting and early leaf growth. Reduce watering as bulbs start to fill and stop completely about 1–2 weeks before harvest to improve storage.
Fertigation	Where drip is available, apply small regular doses of NPK early, then increase potassium during bulb development. Avoid heavy late nitrogen which gives soft bulbs with poor keeping quality.
Pest scouting	Check weekly for thrips, onion/garlic maggots, cutworms and leaf diseases. Look at leaf tips and necks and pull up any Garlic (saumu) plants that suddenly yellow and rot.
Pruning and training	No pruning. Keep Garlic (saumu) beds weed-free and avoid covering bulb tops with soil as harvest time approaches.
Harvest	Harvest when about two-thirds of the leaves of Garlic (saumu) have turned yellow-brown and tops start to bend and dry. Do not wait until all leaves are dry, as bulbs may split.
Postharvest	Lift bulbs gently, keep them in bundles and cure in shade in a dry, airy place for 2–3 weeks. After curing, trim roots and tops or braid, remove loose skins and store Garlic (saumu) in cool, well-ventilated rooms.

Nutrient schedule (Mbolea kwa Hatua)

#	Stage	DAP	Product	Rate	Targets (kg/ha)	Notes
1	Basal at planting	0	NPK 17-17-17 or 15-15-15	200 kg/ha	N: 34, P?O?: 34, K?O: 34	Apply along Garlic (saumu) rows and incorporate into topsoil before planting cloves.
1	Basal at planting	0	NPK 17-17-17 or 15-15-15	200 kg/ha	N: 34, P?O?: 34, K?O: 34	Apply along Garlic (saumu) rows and incorporate into topsoil before planting cloves.
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2	Early topdress	25	CAN 26% N	80 kg/ha	N: 21, P?O?: 0, K?O: 0	Apply between Garlic (saumu) rows on moist soil and lightly incorporate or irrigate.
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3	Bulbing topdress (K-focused)	50	NPK 12-6-24 or urea + MOP/SOP	120 kg/ha	N: 14, P?O?: 7, K?O: 29	Supports Garlic (saumu) bulb formation and firmness; avoid very late heavy nitrogen.
3	Bulbing topdress (K-focused)	50	NPK 12-6-24 or urea + MOP/SOP	120 kg/ha	N: 14, P?O?: 7, K?O: 29	Supports Garlic (saumu) bulb formation and firmness; avoid very late heavy nitrogen.
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Nutrient requirements

Nutrient	Stage	Amount	Unit
N	Basal	40	kg/ha
P?O?	Basal	50	kg/ha
K?O	Basal	40	kg/ha
N	Topdress_early	30	kg/ha
P?O?	Topdress_early	0	kg/ha
K?O	Topdress_early	20	kg/ha
N	Topdress_bulbing	20	kg/ha
P?O?	Topdress_bulbing	0	kg/ha
K?O	Topdress_bulbing	40	kg/ha
N	Basal	40	kg/ha

Nutrient	Stage	Amount	Unit
P?O?	Basal	50	kg/ha
K?O	Basal	40	kg/ha
N	Topdress_early	30	kg/ha
P?O?	Topdress_early	0	kg/ha
K?O	Topdress_early	20	kg/ha
N	Topdress_bulbing	20	kg/ha
P?O?	Topdress_bulbing	0	kg/ha
K?O	Topdress_bulbing	40	kg/ha
N	Basal	40	kg/ha
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P?O?	Topdress_bulbing	0	kg/ha
K?O	Topdress_bulbing	40	kg/ha
N	Basal	40	kg/ha
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N	Topdress_early	30	kg/ha
P?O?	Topdress_early	0	kg/ha
K?O	Topdress_early	20	kg/ha
N	Topdress_bulbing	20	kg/ha
P?O?	Topdress_bulbing	0	kg/ha
K?O	Topdress_bulbing	40	kg/ha
N	Basal	40	kg/ha
P?O?	Basal	50	kg/ha
K?O	Basal	40	kg/ha
N	Topdress_early	30	kg/ha

Nutrient	Stage	Amount	Unit
P?O?	Topdress_early	0	kg/ha
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N	Topdress_bulbing	20	kg/ha
P?O?	Topdress_bulbing	0	kg/ha
K?O	Topdress_bulbing	40	kg/ha
N	Basal	40	kg/ha
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N	Topdress_bulbing	20	kg/ha
P?O?	Topdress_bulbing	0	kg/ha
K?O	Topdress_bulbing	40	kg/ha

Field images


Varieties

Name	Country	Maturity (days)	Traits
Local Garlic (saumu) type	KE	135	White to cream bulbs with strong aroma; adapted to local conditions.
Improved large-clove Garlic (saumu)	TZ	130	Larger cloves and bulbs, good for market, moderate storage.
Purple-skinned Garlic (saumu)	UG	130	Purple outer skins, attractive appearance and strong flavour.
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Fertilizer recommendations

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Basal	NPK 17-17-17 or 15-15-15	200	Provides balanced nutrients for early Garlic (saumu) growth.
Topdress (N source)	CAN 26% N	80	Applied once or twice in early growth when plants are small.
Topdress (K source)	Sulfate of potash (SOP) or high-K NPK	100	Improves Garlic (saumu) bulb size, firmness and keeping quality.
Organic	Well-rotted manure or compost	6000	Apply before bed preparation to improve soil structure, moisture holding and biological activity.
Basal	NPK 17-17-17 or 15-15-15	200	Provides balanced nutrients for early Garlic (saumu) growth.
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Pests and diseases

Name	Type	Symptoms	Management
Thrips	pest	Silvery patches and streaks on Garlic (saumu) leaves, curling, drying from the tips and reduced bulb size.	Maintain good field hygiene, avoid very dusty conditions and use selective insecticides/biopesticides based on scouting.
Cutworms	pest	Young Garlic (saumu) plants cut at or near soil level, leaving gaps.	Prepare land early, destroy weeds, and apply baits or targeted treatments in the evening if damage is high.
Bulb and stem maggots	pest	Wilting plants, rotting at the base and presence of small white maggots inside Garlic (saumu) bulbs or roots.	Rotate crops, avoid planting next to recent onion/garlic crops, and remove and destroy infested plants.
Downy mildew / leaf blights	disease	Yellow patches or elongated lesions on Garlic (saumu) leaves, often with grey mould in humid weather, leading to early leaf death.	Use wide spacing, avoid overhead irrigation at night and apply protectant fungicides when conditions are favourable.
White rot and basal rot	disease	Yellowing and wilting of Garlic (saumu) plants, with white mould or brown decay at the base of bulbs.	Avoid infected fields, rotate with non-Allium crops for several years and plant only clean, healthy cloves.
Storage rots	disease	Soft or dry rots of Garlic (saumu) bulbs during storage, unpleasant smell and sunken cloves.	Harvest at correct maturity, cure bulbs thoroughly, avoid mechanical damage and store in dry, cool, well-ventilated rooms.
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Storage rots	disease	Soft or dry rots of Garlic (saumu) bulbs during storage, unpleasant smell and sunken cloves.	Harvest at correct maturity, cure bulbs thoroughly, avoid mechanical damage and store in dry, cool, well-ventilated rooms.

Yields

System	Typical	Min	Max	Notes
Smallholder Garlic (saumu), low input	4	2	6	Local cloves, limited fertilizer and basic irrigation or rainfall.
Irrigated Garlic (saumu), improved management	10	6	15	Good planting cloves, regular irrigation, recommended fertilizer and frequent weeding.
High input Garlic (saumu), good management	18	12	22	Quality seed cloves, drip irrigation and fertigation, careful pest and disease control.
Smallholder Garlic (saumu), low input	4	2	6	Local cloves, limited fertilizer and basic irrigation or rainfall.
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Season calendars

Country	Region	Planting	Harvest
KE	Cool mid- to high-altitude Garlic (saumu) areas (dry season with irrigation)	Feb–Apr	Jun–Aug
KE	Cool highlands (rainfed)	Start of long rains (Mar–Apr)	Jul–Sep
TZ	Highland and irrigated Garlic (saumu) belts	Feb–Apr	Jun–Aug
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Region suitability

Country	Region	Suitability
KE	Cool highlands and mid-altitude irrigated zones	High
KE	Very hot, wet lowlands with heavy soils	Low
TZ	Highland Garlic (saumu) producing areas	High
UG	Cool mid-altitude regions with good drainage	High