FarmLens Ltd

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Crop details

Cotton

Gossypium spp.

Family: Malvaceae

Categories

Oil & Industrial

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Quick stats

Family	Malvaceae
Typical harvest	2.0 t/ha
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Crop profile

Growth habit	annual
Days to harvest	160
Main uses	Lint for textile fibre, cottonseed for edible oil and cake for livestock feed.
Pollination	self
Origin and where it grows	Grown in warm to hot semi-arid and sub-humid regions worldwide, often under rainfed or irrigated conditions.

Weather, soil and spacing

Best temperature	20 - 32 °C
Rainfall	500 - 750 mm/yr
Altitude	0 - 1600 m
Best pH	6 - 7.5
Soil type	Deep, well-drained loams or clay loams with good water-holding capacity and moderate to high fertility.
Row spacing	90 cm
Plant spacing	30 cm
Planting depth	4 cm
Seed rate	20 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 160 days after planting.

Main use: Farmers mostly grow this crop for lint for textile fibre, cottonseed for edible oil and cake for livestock feed..

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

Where it grows: Grown in warm to hot semi-arid and sub-humid regions worldwide, often under rainfed or irrigated conditions.. Grouped under: Oil & Industrial.

Best climate: 20 - 32 °C; 500 - 750 mm/yr; up to about 1600 m a.s.l.

Soil: Best at pH 6 - 7.5; deep, well-drained loams or clay loams with good water-holding capacity and moderate to high fertility..

Farmer guide (Mwongozo wa Mkulima)

Planting	Direct seed into a well-prepared, firm seedbed at the onset of rains or under irrigation when soil is warm. Aim for 35,000–45,000 plants/ha depending on variety.
Transplanting	Transplanting is uncommon; focus on good seed placement, depth and soil contact at planting.
Irrigation	Maintain adequate moisture during germination, early vegetative growth, squaring and boll formation. Reduce irrigation towards final boll opening to aid picking and fibre quality.
Fertigation	Where drip or sprinkler fertigation is available, split N and K in several doses up to peak flowering; avoid very late N that delays opening.
Pest scouting	Scout regularly for bollworms, sucking pests (aphids, jassids, whiteflies), leaf spots and boll rots. Use IPM combining resistant varieties, natural enemies and targeted sprays.
Pruning and training	No pruning in field crops; maintain uniform stands and manage plant height/density with variety choice and nutrient/water management.
Harvest	Pick when bolls are fully open, white and fluffy, starting with first pick and following with 2–3 pickings at 1–2 week intervals. Avoid harvesting wet bolls.
Postharvest	Keep seed cotton clean and dry, avoid contact with soil and foreign matter. Store in airy, dry places before ginning to maintain fibre quality.

Nutrient schedule (Mbolea kwa Hatua)

#	Stage	DAP	Product	Rate	Targets (kg/ha)	Notes
1	Basal at planting	0	NPK 17-17-17	120 kg/ha	N: 20, P?O?: 20, K?O: 20	Band or place 5–7 cm to the side and below seed to avoid seed burn.
2	Early topdress (squaring)	30	CAN 26% N	100 kg/ha	N: 26, P?O?: 0, K?O: 0	Apply when plants are 25–35 cm tall and first squares appear; side-dress along rows on moist soil.
3	Mid-season K support	50	MOP (KCl)	70 kg/ha	N: 0, P?O?: 0, K?O: 42	Apply before peak flowering in fields with low K or high yield targets to support boll set and fibre quality.

Nutrient requirements

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

Varieties

Name	Country	Maturity (days)	Traits
Medium-maturing cotton variety	KE	160	Good fibre length and strength, suited to irrigated and high-potential rainfed areas.
Drought-tolerant cotton selection	TZ	150	Adapted to semi-arid zones with stable yields under variable rainfall.
Local cotton landrace	UG	165	Farmer-selected type, tolerant to local stresses and used for household and smallholder production.

Fertilizer recommendations

Stage	Product	Rate	Notes
Basal	NPK 17-17-17	120	Apply at planting in bands 5–7 cm away from the seed row.
Early vegetative / squaring	CAN 26% N	100	Apply 3–5 weeks after emergence when plants begin forming squares.
Mid-season (optional)	MOP (KCl)	70	Apply before peak flowering in fields targeting higher yields or with low soil K.

Pests and diseases

Name	Type	Symptoms	Management
Bollworms (heliothis/american bollworm, others)	pest	Feeding on squares, flowers and bolls; damaged or shed squares and stained or destroyed bolls.	Regular scouting, avoid continuous cotton, encourage natural enemies and apply selective insecticides based on thresholds.
Aphids	pest	Clusters on young shoots and underside of leaves, leaf curling, honeydew and sooty mould.	Conserve natural enemies, avoid unnecessary broad-spectrum insecticides, treat only when economic thresholds are exceeded.
Jassids (leafhoppers)	pest	Leaf margins turn yellow and curl downwards (“hopper burn”), stunted plants in heavy infestations.	Use tolerant varieties, monitor early, manage weeds that host jassids and only spray when above threshold.
Whiteflies	pest	White insects on undersides, honeydew and sooty mould, reduced vigour and downgraded lint from sticky honeydew.	Avoid overuse of insecticides that harm natural enemies, use yellow sticky traps and manage weeds and alternate hosts.
Bacterial blight	disease	Angular leaf spots, blackening of veins and lesions on stems and bolls; can lead to defoliation.	Use resistant varieties, clean seed, rotate with non-hosts and avoid overhead irrigation that keeps leaves wet.
Verticillium / Fusarium wilt	disease	Yellowing and wilting of lower leaves, vascular discolouration in stems, plant stunting.	Use tolerant varieties, improve drainage, rotate with non-host crops and avoid stress from waterlogging.

Name	Type	Symptoms	Management
Boll rots	disease	Bolls fail to open, show rot, discoloured lint and bad smell in wet seasons.	Avoid excessive irrigation and lodging, maintain good airflow and pick bolls promptly after opening.

Yields

System	Typical	Min	Max	Notes
Low-input rainfed (seed cotton)	0.8	0.6	1.2	Traditional smallholder systems with limited inputs and variable pest control.
Managed smallholder (seed cotton)	1.8	1.2	2.5	Improved varieties, balanced NPK and better pest and weed control.
Intensive irrigated (seed cotton)	3.5	2.5	4.5	High-yielding varieties, reliable water, good nutrition and strong pest management.

Season calendars

Country	Region	Planting	Harv
KE	Coastal lowlands, lower eastern and drier mid-altitudes	At onset of main rains so that flowering and boll filling occur under reliable moisture, with opening in dry conditions.	First
TZ	Western cotton-growing zone, central corridor and Lake zone fringes	Early in the rainy season as soon as sufficient moisture is available for establishment.	Dry-s
UG	Northern and eastern cotton belts	At onset of main rains, avoiding very late planting that pushes boll opening into heavy rains.	Arou

Region suitability

Country	Region	Suitability
KE	Coastal belt, lower eastern and semi-arid mid-altitudes with irrigation or reliable rains	High
TZ	Western and central cotton zones with warm climates and defined dry season	High
UG	Northern and eastern cotton-growing regions with warm, seasonal rainfall	High

Source: **FarmLens Ltd** - farmlens.africa and app.farmlens.africa. Headquarters: Nairobi, Kenya. This guide was generated from the FarmLens database.