FarmLens Ltd

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Crop details

Sorghum

Sorghum bicolor

Family: Poaceae

Categories

Cereals & Pseudocereals

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Quick stats

Family	Poaceae
Typical harvest	3.2 t/ha
Varieties	3
Pests and diseases	6
Seasons	3

Crop profile

Growth habit	annual
Days to harvest	100
Main uses	Food grain (for ugali and porridge), animal feed, fodder and silage
Pollination	self
Origin and where it grows	Sorghum (mtama) is widely grown in dry and semi-dry areas of East Africa as a drought-tolerant cereal.

Weather, soil and spacing

Best temperature	24 - 32 °C
Rainfall	400 - 800 mm/yr
Altitude	0 - 1800 m
Best pH	5.5 - 7.5
Soil type	Wide range; best in well-drained soils
Row spacing	60 cm
Plant spacing	20 cm
Planting depth	3 cm
Seed rate	8 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 food grain (for ugali and porridge), animal feed, fodder and silage.

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

Where it grows: Sorghum (mtama) is widely grown in dry and semi-dry areas of East Africa as a drought-tolerant cereal.. Grouped under: Cereals & Pseudocereals.

Best climate: 24 - 32 °C; 400 - 800 mm/yr; up to about 1800 m a.s.l.

Soil: Best at pH 5.5 - 7.5; fertile, well-drained soils.

Farmer guide (Mwongozo wa Mkulima)

Planting	Plant Sorghum (mtama) at the start of the rains. Put 2–3 seeds per hole, about a short finger deep, then thin to 1–2 plants when they reach 2–3 leaves.
Transplanting	Sorghum (mtama) is usually planted directly in the field, not transplanted.
Irrigation	Sorghum (mtama) is drought tolerant but still needs moisture at germination, tillering and head filling. Avoid long dry spells at flowering.
Fertigation	With drip, give small amounts of fertilizer many times instead of one big dose, especially nitrogen.
Pest scouting	Check weekly for shoot fly, stem borers and head pests. Look for dead hearts in young plants and damage on the panicle (head).
Pruning and training	Keep weeds low, especially early. Excessive tillers can be removed if plants are too crowded.
Harvest	Harvest when heads turn brown and grains are hard. For fodder, cut when grains are at soft to firm dough stage.
Postharvest	Cut heads, dry them on clean mats or platforms, thresh when dry, then store grain in dry, airtight bags or silos.

Nutrient schedule (Mbolea kwa Hatua)

#	Stage	DAP	Product	Rate	Targets (kg/ha)	Notes
1	Basal at planting	0	DAP 18-46-0 or similar P fertilizer	70 kg/ha	N: 13, P?O?: 32, K?O: 0	Place fertilizer a short distance from the Sorghum (mtama) seed and cover with soil.
2	Early topdress (tillering)	21	CAN 26% N or urea	60 kg/ha	N: 16, P?O?: 0, K?O: 0	Apply when plants have 4–5 leaves; keep fertilizer away from the stem.
3	Late topdress (pre-heading)	35	Urea 46% N (where rainfall is reliable)	40 kg/ha	N: 18, P?O?: 0, K?O: 0	Apply before panicles appear and when soil is moist.

Nutrient requirements

Nutrient	Stage	Amount	Unit
N	Basal	30	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	20	kg/ha
N	Topdress_early	25	kg/ha
P?O?	Topdress_early	0	kg/ha
K?O	Topdress_early	10	kg/ha
N	Topdress_late	15	kg/ha

Nutrient	Stage	Amount	Unit
P?O?	Topdress_late	0	kg/ha
K?O	Topdress_late	10	kg/ha

Field images


Varieties

Name	Country	Maturity (days)	Traits
Serena	KE	95	Early maturing Sorghum (mtama), drought tolerant, suitable for low rainfall areas.
Seredo	KE	105	Good grain and fodder, adapted to semi-arid zones.
Gadam	KE	90	Sweet stalk Sorghum (mtama), good for grain and fodder.

Fertilizer recommendations

Stage	Product	Rate	Notes
Basal	DAP 18-46-0	70	Supplies phosphorus and some nitrogen at planting.
Topdress (tillering)	CAN 26% N	60	Apply when Sorghum (mtama) plants are 3–4 weeks old.
Topdress (pre-heading)	Urea 46% N	40	Apply when rain is expected so it can dissolve into the soil.

Pests and diseases

Name	Type	Symptoms	Management
Sorghum shoot fly	pest	Central shoot dries up and forms a “dead heart”; many tillers grow but do not form heads.	Plant Sorghum (mtama) early with the rains, use recommended seed treatments and avoid very late planting.
Stem borers	pest	Shot holes on leaves, dead hearts in young plants, tunneling in stems and weak or broken stems.	Destroy crop residues, rotate crops and use tolerant varieties where available.
Head bugs and midges	pest	Poor grain set, empty or partly filled heads, shriveled grains.	Plant Sorghum (mtama) early and uniformly, use tolerant varieties and harvest promptly.
Bird damage	pest	Grains pecked on top of the panicle, scattered grain on the ground.	Use bird scaring, synchronized planting and early-maturing varieties where bird pressure is high.

Name	Type	Symptoms	Management
Sorghum anthracnose and leaf spots	disease	Dark spots on leaves and panicles, sometimes with reddish borders; premature drying.	Use resistant Sorghum (mtama) varieties, remove crop residues and rotate with non-cereal crops.
Smut diseases	disease	Black, powdery masses replacing grains or entire heads.	Plant clean, treated seed and use resistant varieties.

Yields

System	Typical	Min	Max	Notes
Smallholder rainfed (low input)	1.5	0.8	2.5	Local seed, little or no fertilizer, basic weeding.
Smallholder rainfed (improved management)	3	1.8	4	Improved Sorghum (mtama) varieties, recommended fertilizer and good weed control.
Irrigated / high input	5	3.5	6.5	Good varieties, irrigation and well-timed fertilizer and pest control.

Season calendars

Country	Region	Planting	Harvest
KE	Semi-arid lowlands (long rains)	Mar–Apr	Jul–Aug
KE	Semi-arid lowlands (short rains)	Oct–Nov	Feb–Mar
TZ	Central and northern semi-arid zones	Dec–Jan	May–Jun

Region suitability

Country	Region	Suitability
KE	ASAL (arid and semi-arid lands)	High
KE	High rainfall highlands	Low
KE	Lower eastern and coastal drylands	High
TZ	Central semi-arid plateau	High
UG	Dry cattle corridor areas	Medium

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