FarmLens Ltd

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Crop details

Sugarcane

Saccharum officinarum

Family: Poaceae

Categories

Oil & Industrial

Generated: 2025-12-16 02:40

Quick stats

Family	Poaceae
Typical harvest	91.7 t/ha
Varieties	3
Pests and diseases	6
Seasons	3

Crop profile

Growth habit	perennial
Days to harvest	360
Main uses	Crushed for sugar, jaggery, syrup and juice; by-products used for feed, fuel and industry.
Pollination	unknown
Origin and where it grows	Tropical and subtropical regions with warm temperatures and reliable moisture or irrigation.

Weather, soil and spacing

Best temperature	20 - 32 °C
Rainfall	1200 - 1800 mm/yr
Altitude	0 - 1900 m
Best pH	6 - 7.5
Soil type	Deep, well-drained loams or clay loams with good water-holding capacity and plenty of organic matter.
Row spacing	120 cm
Plant spacing	30 cm
Planting depth	10 cm
Seed rate	8000 kg/ha

Simple notes for farmers

About the crop: This crop is perennial; once planted it can keep producing for many years. Harvest typically starts about 360 days after planting.

Main use: Farmers mostly grow this crop for crushed for sugar, jaggery, syrup and juice; by-products used for feed, fuel and industry..

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

Where it grows: Tropical and subtropical regions with warm temperatures and reliable moisture or irrigation.. Grouped under: Oil & Industrial.

Best climate: 20 - 32 °C; 1200 - 1800 mm/yr; up to about 1900 m a.s.l.

Soil: Best at pH 6 - 7.5; deep, well-drained loams or clay loams with good water-holding capacity and plenty of organic matter..

Farmer guide (Mwongozo wa Mkulima)

Planting	Use healthy, disease-free seed cane with 2–3 bud setts placed in furrows on well-prepared fields. Cover lightly with soil and mulch where possible.
Transplanting	No nursery; plant setts directly in the main field. Avoid planting very old or dry cane for seed.
Irrigation	Keep soil moist (not waterlogged) during germination, tillering and early grand growth. Reduce irrigation approaching harvest to allow ripening.
Fertigation	Under drip or sprinkler, split N and K into many small doses from early tillering to mid grand growth; reduce towards maturity.
Pest scouting	Scout for shoot borers, stem borers, scale insects, smut and ratoon stunting disease. Remove and burn heavily infested stools in small fields.
Pruning and training	No pruning; maintain good ratoon management by cutting close to the ground and promptly removing dead trash where pests build up.
Harvest	Harvest when stalks are well filled, internodes hard and juice has high sugar (Brix). Tops should be slightly yellowing but still firm.
Postharvest	Cut cleanly at the base, strip leaves, and transport to the mill or crushing point as quickly as possible to avoid sugar losses.

Nutrient schedule (Mbolea kwa Hatua)

#	Stage	DAP	Product	Rate	Targets (kg/ha)	Notes
1	Basal at planting	0	NPK 17-17-17 + organic manure	200 kg/ha (plus 8–10 t/ha manure)	N: 34, P?O?: 34, K?O: 34	Apply along furrows before placing setts or side-band soon after planting; mix lightly with soil.
2	Early tillering topdress	45	CAN 26% N	150 kg/ha	N: 39, P?O?: 0, K?O: 0	Side-dress on moist soil and then earth up lightly to cover fertilizer and support stools.
3	Grand growth K boost	90	MOP (KCl)	120 kg/ha	N: 0, P?O?: 0, K?O: 72	Apply ahead of peak elongation where soils are low in K or high yields are targeted.

Nutrient requirements

Nutrient	Stage	Amount	Unit
N	Basal	60	kg/ha
P?O?	Basal	40	kg/ha
K?O	Basal	40	kg/ha
N	Early_tillering	60	kg/ha
P?O?	Early_tillering	0	kg/ha
K?O	Early_tillering	40	kg/ha

Nutrient	Stage	Amount	Unit
N	Grand_growth	40	kg/ha
P?O?	Grand_growth	0	kg/ha
K?O	Grand_growth	60	kg/ha

Varieties

Name	Country	Maturity (days)	Traits
Early-maturing cane selection	KE	330	Good sucrose content, suited to irrigated and rainfed schemes with 10–12 month harvesting.
Mid-altitude sugarcane variety	TZ	360	Adapted to mid-altitude estates and outgrowers; good ratooning ability.
Local sugarcane (chewing/juice) type	UG	300	Used for chewing and small-scale jaggery and juice extraction; tolerated in mixed systems.

Fertilizer recommendations

Stage	Product	Rate	Notes
Basal	NPK 17-17-17 + manure	200	Apply at planting along furrows, together with 8–10 t/ha well-rotted manure.
Early tillering	CAN 26% N	150	Apply at 4–6 weeks after planting, before strong tillering.
Grand growth	MOP (KCl)	120	Apply 3 months after planting in fields with good moisture and yield potential.

Pests and diseases

Name	Type	Symptoms	Management
Early shoot borer	pest	Dead hearts in young crop, central shoot drying while outer leaves remain green.	Use clean seed cane, destroy crop residues, maintain good field hygiene and monitor early crop stage.
Stem borers	pest	Tunnels in stalks, broken stalks, thin canes and poor juice quality.	Conserve natural enemies, destroy stubble and trash that harbour larvae, and avoid continuous sugarcane without rotation.
Scale insects / mealybugs	pest	Clusters on leaf sheaths and nodes, honeydew and sooty mould, weak stalks.	Avoid water stress, control weeds, encourage natural enemies and remove heavily infested stools in small fields.
Smut	disease	Black whip-like structures emerging from the top of tillers, excessive tillering and stunted clumps.	Plant resistant varieties, use clean seed cane, rogue and destroy infected clumps early.
Ratoon stunting disease	disease	Stunted ratoons with thin, short internodes; difficult to diagnose visually.	Use hot-water treated seed cane where feasible, avoid continuous ratoons, and use clean planting material.
Red rot / stalk rots	disease	Internal reddening and rotting of stalks, foul smell, lodging and poor juice quality.	Use tolerant varieties, avoid waterlogging, remove and destroy diseased stools and rotate crops.

Yields

System	Typical	Min	Max	Notes
Low-input rainfed (plant cane)	55	40	70	Minimal fertilizer and basic weed control; often smallholder outgrower systems.
Managed estate/outgrower (plant cane)	90	70	110	Improved varieties, balanced fertilization, timely weeding and good ratoon management.
Intensive irrigated (plant cane)	130	100	160	High-yielding varieties with drip or furrow irrigation, good drainage and strong nutrition.

Season calendars

Country	Region	Planting	Harvest
KE	Lake region and coastal/mid-altitude sugar belts	At onset of main rains, or throughout the year under irrigation where mills operate year-round.	First harvest 10–14 m
TZ	Kilombero, Kagera and other sugar estates/outgrower zones	With start of reliable rains or under estate irrigation schedules.	Harvest scheduled b
UG	Eastern and central sugarcane-growing belts	Main rains or year-round under irrigation and near factories.	Plant cane harvested

Region suitability

Country	Region	Suitability
KE	Lake Victoria basin, coastal lowlands and irrigated mid-altitudes	High
TZ	Kilombero valley, Kagera basin and other warm, moist valleys	High
UG	Eastern and central sugar belts with warm, moist conditions	High