

FarmLens Ltd

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Crop details

Maize

Zea mays

Family: Poaceae

Categories

Cereals & Pseudocereals

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Quick stats

| | |
|---------------------------|----------|
| Family | Poaceae |
| Typical harvest | 5.3 t/ha |
| Varieties | 3 |
| Pests and diseases | 5 |
| Seasons | 3 |

Crop profile

| | |
|----------------------------------|--|
| Growth habit | annual |
| Days to harvest | 110 |
| Main uses | Food grain, animal feed, green maize, flour and porridge |
| Pollination | wind |
| Origin and where it grows | Widely grown in East Africa in both high and medium rainfall areas |

Weather, soil and spacing

| | |
|-------------------------|--|
| Best temperature | 18 - 30 °C |
| Rainfall | 600 - 1000 mm/yr |
| Altitude | 0 - 2500 m |
| Best pH | 5.8 - 7 |
| Soil type | Wide range; best in well-drained soils |
| Row spacing | 75 cm |
| Plant spacing | 25 cm |
| Planting depth | 5 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 110 days after planting.

Main use: Farmers mostly grow this crop for food grain, animal feed, green maize, flour and porridge.

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

Where it grows: Widely grown in East Africa in both high and medium rainfall areas. Grouped under: Cereals & Pseudocereals.

Best climate: 18 - 30 °C; 600 - 1000 mm/yr; up to about 2500 m a.s.l.

Soil: Best at pH 5.8 - 7; fertile, well-drained soils.

Farmer guide (Mwongozo wa Mkulima)

| | |
|------------------------------------|--|
| <u>Planting</u> | Plant at the start of the rains. Put 1–2 seeds per hole, about one finger joint deep, and cover well. |
| <u>Transplanting</u> | Maize is usually planted directly in the field, not transplanted. |
| <u>Irrigation</u> | Keep soil moist during germination, tasseling and grain filling. Avoid long dry spells at flowering. |
| <u>Fertigation</u> | With drip, give small amounts of fertilizer many times instead of one big dose. |
| <u>Pest scouting</u> | Check the field every week. Look inside the whorl and on young leaves for worms and fresh damage. |
| <u>Pruning and training</u> | Remove only very weak extra shoots if they are too many. Keep the field clean and weed-free. |
| <u>Harvest</u> | For dry grain, harvest when husks are dry and kernels are hard. For green maize, harvest when kernels are milky. |
| <u>Postharvest</u> | Dry cobs on raised, clean platforms. Shell when dry and dry again. 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 | 100 kg/ha | N: 18, P ₂ O ₅ : 46, K ₂ O: 0 | Put fertilizer a short distance from the seed and cover with soil. |
| 2 | Early topdress | 21 | CAN 26% N or urea | 80 kg/ha | N: 21, P ₂ O ₅ : 0, K ₂ O: 0 | Apply when plants have 4–6 leaves; keep fertilizer away from the stem. |
| 3 | Late topdress | 35 | Urea 46% N | 70 kg/ha | N: 32, P ₂ O ₅ : 0, K ₂ O: 0 | Apply before tassels appear and when soil is moist. |

Nutrient requirements

| Nutrient | Stage | Amount | Unit |
|-------------------------------|----------------|--------|-------|
| N | Basal | 60 | kg/ha |
| P ₂ O ₅ | Basal | 40 | kg/ha |
| K ₂ O | Basal | 40 | kg/ha |
| N | Topdress_early | 40 | kg/ha |
| P ₂ O ₅ | Topdress_early | 0 | kg/ha |
| K ₂ O | Topdress_early | 20 | kg/ha |
| N | Topdress_late | 30 | kg/ha |
| P ₂ O ₅ | Topdress_late | 0 | kg/ha |
| K ₂ O | Topdress_late | 20 | kg/ha |
| N | Topdress | 60 | kg/ha |

Field images



Varieties

| <u>Name</u> | <u>Country</u> | <u>Maturity (days)</u> | <u>Traits</u> |
|--------------------|----------------|------------------------|--|
| H614D | KE | 150 | High-yield hybrid for high rainfall areas. |
| Katamani composite | KE | 90 | Early maturing; good for low rainfall areas. |
| Local white maize | KE | 120 | Traditional taste, lower yield than hybrids. |

Fertilizer recommendations

| <u>Stage</u> | <u>Product</u> | <u>Rate</u> | <u>Notes</u> |
|------------------|----------------|-------------|--|
| Basal | DAP 18-46-0 | 100 | Supplies phosphorus and some nitrogen at planting. |
| Topdress (early) | CAN 26% N | 80 | Safer than urea in dry or acidic conditions. |
| Topdress (late) | Urea 46% N | 70 | Apply when rain is expected so it can dissolve and move into the soil. |

Pests and diseases

| <u>Name</u> | <u>Type</u> | <u>Symptoms</u> | <u>Management</u> |
|--------------------|-------------|---|---|
| Fall armyworm | pest | Leaves eaten from the centre (whorl), holes on leaves and brown droppings inside the leaf funnel. | Plant early, scout often, handpick where possible, and use safe biopesticides or recommended sprays when damage is fresh. |
| Maize stem borers | pest | Small holes on leaves, dead heart in young plants, weak stems that break easily. | Destroy stalks after harvest, plant on time and use tolerant varieties or push-pull where available. |
| Cutworms | pest | Seedlings cut near ground level, gaps in the row. | Keep field weed-free before planting and replant missing hills quickly. |
| Maize streak virus | disease | Fine yellow streaks on leaves, stunted plants and small cobs. | Use tolerant varieties and avoid very late planting. |
| Leaf blights | disease | Brown or grey spots on leaves; leaves dry early. | Use clean seed, rotate crops, and plant resistant varieties where possible. |

Yields

| <u>System</u> | <u>Typical</u> | <u>Min</u> | <u>Max</u> | <u>Notes</u> |
|---------------------------------|----------------|------------|------------|---|
| Smallholder rainfed (low input) | 2.5 | 1 | 4 | Local seed, little fertilizer, one or two weedings. |

| <u>System</u> | <u>Typical</u> | <u>Min</u> | <u>Max</u> | <u>Notes</u> |
|---------------------------------------|----------------|------------|------------|---|
| Smallholder rainfed (good management) | 5 | 3 | 7 | Hybrid seed, recommended fertilizer and timely weed control. |
| Irrigated or high-input farms | 9 | 7 | 12 | Good hybrid, irrigation and well-planned fertilizer and pest control. |
| rainfed improved | 4.5 | 3 | 6 | |

Season calendars

| <u>Country</u> | <u>Region</u> | <u>Planting</u> | <u>Harvest</u> |
|----------------|----------------------------------|-----------------|----------------|
| KE | High potential zone (long rains) | Mar–Apr | Aug–Sep |
| KE | Medium altitude (short rains) | Oct–Nov | Feb–Mar |
| TZ | Southern highlands | Nov–Dec | May–Jun |

Region suitability

| <u>Country</u> | <u>Region</u> | <u>Suitability</u> |
|----------------|---|--------------------|
| KE | High potential maize zone (Rift Valley) | High |
| KE | Medium altitude transitional areas | High |
| KE | Semi-arid lowlands | Medium |
| TZ | Southern highlands maize belt | High |
| UG | Lake Victoria crescent | High |

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