FarmLens Ltd

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

Crop details

Onion

Allium cepa

Family: Amaryllidaceae

Categories

Vegetables

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Quick stats

Family	Amaryllidaceae
Typical harvest	26.0 t/ha
Varieties	48
Pests and diseases	96
Seasons	48

Crop profile

Growth habit	biennial
Days to harvest	120
Main uses	Red and bulb Onion (kitunguu) used for cooking, salads, frying, pickles and dried onion flakes.
Pollination	insect
Origin and where it grows	Onion (kitunguu) is widely grown in irrigated and rainfed areas in East Africa, especially in dry, sunny valleys and around towns.

Weather, soil and spacing

Best temperature	15 - 25 °C
Rainfall	500 - 700 mm/yr
Altitude	0 - 2200 m
Best pH	6 - 6.8
Soil type	Loose, well-drained sandy loam or loam with good organic matter. Onion (kitunguu) forms better bulbs in friable soils.
Row spacing	30 cm
Plant spacing	10 cm
Planting depth	1.5 cm
Seed rate	5 kg/ha
Nursery days	45

Simple notes for farmers

About the crop: This crop is biennial; it usually needs two seasons to complete its cycle. Harvest typically starts about 120 days after planting.

Main use: Farmers mostly grow this crop for red and bulb onion (kitunguu) used for cooking, salads, frying, pickles and dried onion flakes..

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

Where it grows: Onion (kitunguu) is widely grown in irrigated and rainfed areas in East Africa, especially in dry, sunny valleys and around towns.. Grouped under: Vegetables.

Best climate: 15 - 25 °C; 500 - 700 mm/yr; up to about 2200 m a.s.l.

Soil: Best at pH 6 - 6.8; loose, well-drained sandy loam or loam with good organic matter. onion (kitunguu) forms better bulbs in friable soils..

Farmer guide (Mwongozo wa Mkulima)

Planting	Sow Onion (kitunguu) seed in raised nursery beds with fine soil and compost. Keep moist but not waterlogged. Transplant strong seedlings (pencil-size) into the main field, trimming leaves and roots slightly and planting shallowly so the bulb can form above the soil line.
Transplanting	Transplant in cool hours. Do not plant Onion (kitunguu) too deep; keep the neck just above the soil surface.
Irrigation	Provide regular, light irrigations to keep the root zone moist. Reduce watering as bulbs start to mature and stop completely 1–2 weeks before harvest to improve keeping quality.
Fertigation	With drip, feed small amounts of balanced NPK frequently, then shift to more potassium as bulbs start to swell. Avoid too much late nitrogen which delays maturity and reduces storability.
Pest scouting	Check fields weekly for thrips, cutworms, onion flies and diseases. Look in the neck and between leaves for thrips, and on leaf tips and bases for spots and rots.
Pruning and training	No pruning; keep Onion (kitunguu) beds weed-free and avoid soil covering the developing bulbs.
Harvest	Harvest when most necks bend over and 70–80% of tops have fallen and dried. Lift Onion (kitunguu) gently to avoid bruising and let bulbs dry in the field or under shade for a few days.
Postharvest	Cure bulbs in a warm, dry, well-ventilated place until necks are dry and outer scales are firm. Then trim tops and roots and store Onion (kitunguu) in cool, dry, airy conditions in nets or slatted crates.

Nutrient schedule (Mbolea kwa Hatua)

#	Stage	DAP	Product	Rate	Targets (kg/ha)	Notes
1	Basal at transplanting	0	NPK 17-17-17 or 15-15-15	200 kg/ha	N: 34, P?O?: 34, K?O: 34	Band fertilizer 5–8 cm away from Onion (kitunguu) seedlings and lightly incorporate.
1	Basal at transplanting	0	NPK 17-17-17 or 15-15-15	200 kg/ha	N: 34, P?O?: 34, K?O: 34	Band fertilizer 5–8 cm away from Onion (kitunguu) seedlings and lightly incorporate.
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2	Early topdress	21	CAN 26% N	100 kg/ha	N: 26, P?O?: 0, K?O: 0	Apply between Onion (kitunguu) rows on moist soil, then water in.
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3	Bulbing topdress (K-focused)	40	NPK 12-6-24 or urea + MOP/SOP	150 kg/ha	N: 18, P?O?: 9, K?O: 36	Supports Onion (kitunguu) bulb swelling and firmness; avoid late heavy nitrogen.
3	Bulbing topdress (K-focused)	40	NPK 12-6-24 or urea + MOP/SOP	150 kg/ha	N: 18, P?O?: 9, K?O: 36	Supports Onion (kitunguu) bulb swelling and firmness; avoid late heavy nitrogen.
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Nutrient requirements

Nutrient	Stage	Amount	Unit
N	Basal	40	kg/ha
P?O?	Basal	60	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	30	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	60	kg/ha
K?O	Basal	40	kg/ha
N	Topdress_early	30	kg/ha
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
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K?O	Basal	40	kg/ha

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N	Topdress_early	30	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
Red bulb Onion (kitunguu) hybrid	KE	110	Deep red bulbs, good size and storability, popular in local markets.
Yellow/brown storage Onion (kitunguu)	TZ	120	Good keeping quality, suitable for longer storage and transport.
Local red Onion (kitunguu)	KE	120	Traditional taste and aroma, lower yield than improved hybrids.
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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 Onion (kitunguu) growth.
Topdress (N source)	CAN 26% N	100	Used once or twice during early vegetative growth.
Topdress (K source)	Sulfate of potash (SOP) or high-K NPK	100	Supports bulb size, skin quality and shelf life.
Organic	Well-rotted farmyard manure or compost	6000	Apply before bed preparation to improve soil structure and moisture holding.
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Pests and diseases

Name	Type	Symptoms	Management
Onion thrips	pest	Silvery streaks and small white patches on Onion (kitunguu) leaves, curling and drying from the tip, reduced bulb size.	Keep fields weed-free, use reflective mulch where possible, and apply selective insecticides or biopesticides based on scouting.
Cutworms	pest	Young Onion (kitunguu) seedlings cut at soil level, gaps in rows.	Prepare land early, destroy weeds, and, if necessary, use bait or targeted evening treatments.
Onion fly / maggots	pest	Plants wilt and die, with soft rotting at the base and small white maggots feeding on roots and bulbs.	Rotate crops, avoid planting new Onion (kitunguu) near old onion fields, and bury or destroy crop residues.
Downy mildew	disease	Pale yellow patches on leaves of Onion (kitunguu) with grey-violet mould in humid weather; leaves then collapse.	Plant in open, well-drained fields, avoid overhead irrigation at night and use protectant fungicides when conditions favour disease.
Purple blotch	disease	Small water-soaked spots on leaves that enlarge into purple-brown lesions with yellow halos, leading to leaf dieback.	Use crop rotation, good spacing and fungicides where needed; avoid prolonged leaf wetness.
Neck rot and storage rots	disease	Soft or dry rots starting at the neck of stored Onion (kitunguu), with internal moulds and collapse.	Harvest at correct maturity, cure bulbs properly, avoid bruising and store in cool, dry, ventilated conditions.
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Yields

System	Typical	Min	Max	Notes
Smallholder rainfed Onion (kitunguu), low input	8	5	12	Local varieties, little fertilizer, some irrigation or rainfall only, basic pest control.
Irrigated Onion (kitunguu), improved management	25	15	35	Good varieties, regular irrigation, recommended fertilizer and timely pest/disease control.
High input irrigated Onion (kitunguu)	45	35	60	Hybrid seed, drip and fertigation, good soils and strong management.
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Season calendars

Country	Region	Planting	Harvest
KE	Irrigated Onion (kitunguu) belts (e.g., dry valleys)	Most months (with good water and disease control)	3–4 months after transplanting
KE	Mid-altitude rainfed Onion (kitunguu) areas (short rains)	Oct–Nov	Feb–Mar
TZ	Central and northern dry-season Onion areas	Feb–Apr (with irrigation)	Jun–Aug
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Region suitability

Country	Region	Suitability
KE	Dry, sunny river valleys and irrigation schemes	High
KE	Peri-urban vegetable belts with irrigation	High
KE	Very wet, poorly drained soils	Low
TZ	Central and northern Onion (kitunguu) zones	High
UG	Mid-altitude dry-season Onion areas	High

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