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

Crop details

Roses (cut flower)

Rosa hybrida (hybrid tea/spray types)

Family: Rosaceae

Categories

Oil & Industrial

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Quick stats

Family	Rosaceae
Typical harvest	12.0 t/ha
Varieties	3
Pests and diseases	9
Seasons	3

Crop profile

Growth habit	perennial
Days to harvest	365
Main uses	Cut flowers for export and local markets; buds and blooms for bouquets, decoration and essential oils in some systems.
Pollination	insect
Origin and where it grows	Grown in temperate and tropical highland regions, often under greenhouse or plastic tunnels with controlled irrigation and fertigation.

Weather, soil and spacing

Best temperature	15 - 26 °C
Rainfall	800 - 1200 mm/yr
Altitude	1200 - 2600 m
Best pH	6 - 6.5
Soil type	Deep, fertile, well-drained loam or sandy loam rich in organic matter; salt-free irrigation water is important for export-quality roses.
Row spacing	60 cm
Plant spacing	20 cm
Planting depth	3 cm
Seed rate	kg/ha (check local recommendation)
Nursery days	60

Simple notes for farmers

About the crop: This crop is perennial; once planted it can keep producing for many years. Harvest typically starts about 365 days after planting.

Main use: Farmers mostly grow this crop for cut flowers for export and local markets; buds and blooms for bouquets, decoration and essential oils in some systems..

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

Where it grows: Grown in temperate and tropical highland regions, often under greenhouse or plastic tunnels with controlled irrigation and fertigation.. Grouped under: Oil & Industrial.

Best climate: 15 - 26 °C; 800 - 1200 mm/yr; up to about 2600 m a.s.l.

Soil: Best at pH 6 - 6.5; deep, fertile, well-drained loam or sandy loam rich in organic matter; salt-free irrigation water is important for export-quality roses..

Farmer guide (Mwongozo wa Mkulima)

Planting	Plant healthy, virus-indexed rose plants (grafted or rooted cuttings) on raised, well-drained beds. Orient rows to maximise light and allow air movement. Water in thoroughly after planting and mulch if open-field.
Transplanting	Handle graft unions/crowns gently, avoid planting too deep. For grafted plants, keep the graft just above soil level and firm soil around roots to eliminate air pockets.
Irrigation	Provide regular, even moisture. Avoid overhead irrigation late in the day to reduce foliar diseases; use drip or micro-sprinklers where possible. Do not allow beds to become soggy.
Fertigation	Under drip, split nutrients into small weekly or even daily doses. Use more N early for vegetative growth, then increase K and Ca/Mg for stem strength, bloom quality and vase life.
Pest scouting	Scout frequently for aphids, thrips, spider mites, whiteflies and caterpillars on buds and foliage. Check for powdery mildew, downy mildew, black spot and botrytis on leaves and flowers.
Pruning and training	Train plants into strong basal shoots and productive flowering stems. Regularly disbud where needed for long-stem cut flowers, remove blind shoots and prune after flushes to maintain vigour.
Harvest	Harvest in early morning when buds are firm and at the correct stage for the market (tight bud to half-open). Cut with sharp secateurs, leaving enough leaves on the plant to support new shoots.
Postharvest	Immediately place stems in clean water or preservative solution in a cool, shaded place. Pre-cool quickly, grade by stem length and quality, sleeve and pack into cartons for cold-chain transport.

Nutrient schedule (Mbolea kwa Hatua)

#	Stage	DAP	Product	Rate	Targets (kg/ha)	Notes
1	Basal at planting	0	NPK 17-17-17 + well-rotted compost	200 kg/ha (plus 8–10 t/ha compost)	N: 34, P?O?: 34, K?O: 34	Broadcast and incorporate into raised beds before planting plants; avoid direct fertilizer contact with roots.
2	Early growth topdress	45	CAN 26% N	120 kg/ha	N: 31, P?O?: 0, K?O: 0	Apply along rows on moist soil and lightly incorporate or irrigate in; helps build strong shoots.
3	Production K boost	90	Sulfate of potash (SOP)	100 kg/ha	N: 0, P?O?: 0, K?O: 50	Supports stem strength, colour and postharvest performance; avoid chloride-rich MOP for sensitive varieties.

Nutrient requirements

Nutrient	Stage	Amount	Unit
N	Basal	60	kg/ha
P?O?	Basal	50	kg/ha
K?O	Basal	80	kg/ha
N	Early_growth	50	kg/ha
P?O?	Early_growth	10	kg/ha
K?O	Early_growth	50	kg/ha
N	Production_flush	40	kg/ha
P?O?	Production_flush	0	kg/ha
K?O	Production_flush	70	kg/ha

Varieties

Name	Country	Maturity (days)	Traits
Red hybrid tea selection (export type)	KE	365	Long stems, high bud count and good vase life for export markets.
Spray rose (mixed colours) selection	TZ	365	Multiple small flowers per stem, suited for bouquet fillers and local markets.
Garden rose / scented type	UG	365	Strong fragrance and decorative form for niche and local florists.

Fertilizer recommendations

Stage	Product	Rate	Notes
Basal	NPK 17-17-17 + compost	200	Incorporate into bed before planting; combine with well-rotted manure/compost for structure and biology.
Vegetative/early production	CAN 26% N	120	Apply in 1–2 splits in the first 2–3 months after planting, depending on growth and soil tests.
Flowering and stem quality	Sulfate of potash (SOP)	100	Apply during main flowering flushes or through fertigation to strengthen stems and improve flower quality.

Pests and diseases

Name	Type	Symptoms	Management
Aphids	pest	Clusters on young shoots and buds, honeydew and sooty mould, distorted leaves and flower buds.	Encourage natural enemies, avoid unnecessary broad-spectrum sprays, and use targeted controls or biocontrols as needed.
Thrips	pest	Brown streaking, flecking and distortion on petals and buds; reduced quality of export stems.	Use blue/yellow sticky traps, good hygiene, weed control, netting on vents and targeted IPM measures.

Name	Type	Symptoms	Management
Spider mites	pest	Fine webbing, speckled and bronzed leaves, premature leaf drop and reduced plant vigour.	Avoid water stress, maintain good humidity balance and introduce predatory mites where possible.
Whiteflies	pest	Small white insects flying up when plants are disturbed, honeydew and sooty mould on lower leaves.	Sticky traps, insect-proofing of greenhouses and IPM-based controls where thresholds are exceeded.
False codling moth (on buds in some regions)	pest	Larvae boring into buds, webbing and internal damage, rejection at export due to quarantine significance.	Field sanitation, pheromone traps, careful bud inspection and strict adherence to export IPM protocols.
Powdery mildew	disease	White powdery growth on leaves and young shoots, leaf curl and reduced flower quality.	Maintain airflow, avoid excessive humidity and lush, shaded growth, and apply protectant measures as needed.
Downy mildew / leaf blights	disease	Purple-brown leaf lesions, leaf drop and dieback, especially under cool, humid conditions.	Good ventilation, avoid prolonged leaf wetness, and maintain sanitation of fallen leaves.
Botrytis (grey mould) on flowers	disease	Brown petal spotting, mouldy blooms, postharvest decay in cold store or transit.	Harvest dry flowers, avoid overhead wetting, cool quickly and maintain good hygiene in grading/packing sheds.
Black spot	disease	Black spots with yellow halos on leaves, defoliation and weakened plants in humid climates.	Use tolerant varieties, improve canopy airflow and remove infected leaves from the crop and floor.

Yields

System	Typical	Min	Max	Notes
Open-field / low-input cut roses	6	4	8	Represents modest stem production; actual performance often tracked as stems/ha (e.g. 150–250k stems/ha).
Greenhouse/plastic house managed	12	8	16	Well-managed fertigation and pest control; roughly 250–400k marketable stems/ha/year depending on variety and system.
Intensive export floriculture (high-tech)	18	12	24	High plant densities, controlled environment and strict quality control; often >400k stems/ha/year.

Season calendars

Country	Region	Planting
KE	High-altitude floriculture belts (e.g. around major lakes and highland plateaus)	Greenhouse roses can be planted almost year-round where irrigation is available; many growers align planting with cooler p

Country	Region	Planting
TZ	Northern and southern highlands suitable for floriculture	Plant in cooler parts of the year with reliable irrigation, or at onset of reliable rains for open-field systems.
UG	Cooler highland and mid-altitude zones with floriculture potential	Establish new beds with the start of reliable rains or under irrigation when temperatures are moderate.

Region suitability

Country	Region	Suitability
KE	Highland floriculture zones with cool nights, abundant light and irrigation	High
TZ	Northern and southern highlands and selected irrigated mid-altitude valleys	High
UG	Highland and mid-altitude regions suited to cool-climate floriculture with good water supply	High