FarmLens Ltd

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Crop details

African nightshade

Solanum scabrum (S. nigrum complex)

Family: Solanaceae

Categories

Vegetables

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Quick stats

Family	Solanaceae
Typical harvest	9.9 t/ha
Varieties	19
Pests and diseases	73
Seasons	21

Crop profile

Growth habit	annual
Days to harvest	60–120
Main uses	Leafy vegetable; medicinal; cooked greens
Pollination	self
Origin and where it grows	Sub-Saharan Africa; cultivated across East Africa

Weather, soil and spacing

Best temperature	18 - 28 °C
Rainfall	600 - 1200 mm/yr
Altitude	0 - 2400 m
Best pH	5.5 - 6.8
Soil type	Well-drained loam with high organic matter
Row spacing	30 cm
Plant spacing	20 cm
Planting depth	0.5 cm
Seed rate	2 kg/ha
Nursery days	25

Simple notes for farmers

About the crop: This crop is annual; it grows and is harvested in one season. Harvest typically starts about 60–120 days after planting.

Main use: Farmers mostly grow this crop for leafy vegetable; medicinal; cooked greens.

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

Where it grows: Sub-Saharan Africa; cultivated across East Africa. Grouped under: Vegetables.

Best climate: 18 - 28 °C; 600 - 1200 mm/yr; up to about 2400 m a.s.l.

Soil: Best at pH 5.5 - 6.8; well-drained loam with high organic matter.

Farmer guide (Mwongozo wa Mkulima)

Planting	Raise seedlings in a nursery; transplant at 4–6 true leaves. Incorporate compost before transplant; mulch lightly and keep beds weed-free.
Transplanting	Harden 3–5 days; transplant late afternoon; water in well.
Irrigation	Maintain ~25–35 mm/week; increase during hot spells; avoid waterlogging.
Fertigation	Under drip, supply small weekly N doses during active harvest.
Pest scouting	Scout weekly; check underside of leaves for aphids/mites and leaf miner tracks.
Pruning and training	Pinch tips to encourage side shoots and more leaf area.
Harvest	First picking 3–5 weeks post-transplant; harvest young shoots/leaves every 7–14 days.
Postharvest	Shade-cool or hydrocool promptly; bundle and store at 10–12 °C with high RH.

Nutrient schedule (Mbolea kwa Hatua)

#	Stage	DAP	Product	Rate	Targets (kg/ha)	Notes
1	Basal at transplant	0	Compost + NPK 17-17-17	5 t/ha + kg/ha	N: 17, P?O?: 17, K ?O: 17	Incorporate compost; band NPK lightly 5 cm from seedlings
1	Basal	0	NPK 17-17-17	80 kg/ha	N: 17, P?O?: 17, K ?O: 17	Band at transplant
1	Basal	0	NPK 17-17-17	80 kg/ha	N: 17, P?O?: 17, K ?O: 17	Band at transplant
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1	Basal	0	NPK 17-17-17	80 kg/ha	N: 17, P?O?: 17, K ?O: 17	Band at transplant
2	Topdress 1	14	CAN 26% N	60 kg/ha	N: 18, P?O?: N/A, K?O: N/A	Irrigate after application
2	Topdress	25	CAN 26% N	80 kg/ha	N: 18, P?O?: N/A, K?O: N/A	Light topdress; avoid leaf burn
2	Topdress	25	CAN 26% N	80 kg/ha	N: 18, P?O?: N/A, K?O: N/A	Light topdress; avoid leaf burn
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#	Stage	DAP	Product	Rate	Targets (kg/ha)	Notes
3	Topdress 2	28	CAN 26% N + MOP	60 kg/ha + kg/ha	N: N/A, P?O?: N/A, K?O: N/A	Support regrowth prior to first heavy pickings
4	Maintenance (harvest phase)	42	Urea via fertigation (optional)	10 kg N/ha/week	N: N/A, P?O?: N/A, K?O: N/A	Weekly for 3–4 weeks depending on vigor
5	Micronutrient foliar	21	Trace mix (Fe, Zn, B)	0 —	N: N/A, P?O?: N/A, K?O: N/A	Apply early morning/late afternoon

Nutrient requirements

Nutrient	Stage	Amount	Unit
N	Basal	30	kg/ha
P?O?	Basal	30	kg/ha
K?O	Basal	30	kg/ha
N	Topdress	70	kg/ha
N	Basal	50	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha
N	Topdress	30	kg/ha
N	Basal	50	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha
N	Topdress	30	kg/ha
N	Basal	50	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha
N	Topdress	30	kg/ha
N	Basal	50	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha
N	Topdress	30	kg/ha
N	Basal	50	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha

Nutrient	Stage	Amount	Unit
N	Topdress	30	kg/ha
N	Basal	50	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha
N	Topdress	30	kg/ha
N	Basal	50	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha
N	Topdress	30	kg/ha
N	Basal	50	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha
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N	Basal	50	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha
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N	Basal	50	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha
N	Topdress	30	kg/ha
N	Basal	50	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha
N	Topdress	30	kg/ha
N	Basal	50	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha
N	Topdress	30	kg/ha
N	Basal	50	kg/ha

Nutrient	Stage	Amount	Unit
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha
N	Topdress	30	kg/ha
N	Basal	50	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha
N	Topdress	30	kg/ha
N	Basal	50	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha
N	Topdress	30	kg/ha
N	Basal	50	kg/ha
P?O?	Basal	25	kg/ha
K?O	Basal	40	kg/ha
N	Topdress	30	kg/ha

Field images

Varieties

Name	Country	Maturity (days)	Traits
Broadleaf type	KE	45–60	Vigorous; higher leaf yield
Narrowleaf type	UG	50–65	Tolerates heat; mild flavor
Local landrace	TZ	55–70	Good regrowth after harvest
Local Nightshade	KE	70	Broadleaf; tender
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Local Nightshade	KE	70	Broadleaf; tender
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Fertilizer recommendations

Stage	Product	Rate	Notes
Basal	Compost (well-decomposed)	5000	Incorporate before transplant
Basal	NPK 17-17-17	150	Band lightly beside seedlings
Topdress	CAN 26% N	120	Split into two 60 kg/ha doses
Topdress	MOP (KCl)	30	If tissue tests show low K
Foliar	Micronutrient mix	0	Apply as per label

Pests and diseases

Name	Type	Symptoms	Management
Aphids	pest	Curling shoots; sticky honeydew	Scout weekly; remove infested tips; soft soaps/labelled selective insecticides; conserve natural enemies
Spider mites	pest		Maintain humidity; miticides if severe
Leaf spots	disease		Sanitation; avoid overhead irrigation; fungicides if needed
Leaf miners	pest	Serpentine mines in leaves	Remove mined leaves; use traps; rotate actives if spraying
Red spider mites	pest	Stippling; webbing under hot/dry conditions	Maintain humidity; spot-spray oils/acaricides if needed
Flea beetles	pest	Shot holes on young leaves	Mulch; row covers; spot treatments if severe

Name	Type	Symptoms	Management
Bacterial wilt	disease	Sudden wilting; bacterial ooze	Rotate 2–3 years out of solanaceae; rogue infected plants; sanitize tools
Early blight	disease	Target-like leaf spots	Improve airflow; avoid overhead irrigation; fungicide if needed
Powdery mildew	disease	White powdery growth	Scout; sulfur/labelled fungicides; remove heavily infected leaves
Aphids	pest	Leaf curling, honeydew	Soap sprays or registered insecticides; remove weeds hosts
Spider mites	pest	Stippling, webbing	Maintain humidity; miticides if severe
Leaf spots	disease	Brown lesions on leaves	Sanitation; avoid overhead irrigation; fungicides if needed
Leaf miners	pest	Serpentine mines	Remove infested leaves; rotation
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Yields

System	Typical	Min	Max	Notes
rainfed smallholder	10	5	15	Cumulative across repeated pickings (fresh leaves)
irrigated	10	6	15	
open-field	12	8	18	Leafy biomass (fresh)
irrigated / intensive	18	10	25	Good fertility and frequent harvests
rainfed smallholder	7	4	10	Fresh leaves
irrigated	10	6	15	
open-field	12	8	18	Leafy biomass (fresh)
rainfed smallholder	7	4	10	Fresh leaves
irrigated	10	6	15	
open-field	12	8	18	Leafy biomass (fresh)
rainfed smallholder	7	4	10	Fresh leaves
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open-field	12	8	18	Leafy biomass (fresh)
rainfed smallholder	7	4	10	Fresh leaves
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System	Typical	Min	Max	Notes
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open-field	12	8	18	Leafy biomass (fresh)

Season calendars

Country	Region	Planting	Harvest
KE	Highlands (long rains)	Mar–Apr	May–Jul
KE	Highlands (short rains)	Oct–Nov	Dec–Feb
UG	Central/Western (1st)	Mar–Apr	May–Jul
UG	Central/Western (2nd)	Aug–Sep	Oct–Dec
TZ	Northern unimodal	Nov–Dec	Jan–Mar
KE	Highlands/Western	Feb–Apr / Aug–Oct	Apr–Jul / Oct–Dec
KE	Highlands/Western	Feb–Apr / Aug–Oct	Apr–Jul / Oct–Dec
KE	Highlands/Western	Feb–Apr / Aug–Oct	Apr–Jul / Oct–Dec
KE	Highlands/Western	Feb–Apr / Aug–Oct	Apr–Jul / Oct–Dec
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KE	Highlands/Western	Feb–Apr / Aug–Oct	Apr–Jul / Oct–Dec

Region suitability

Country	Region	Suitability
ET	Mid-altitude areas	Medium
KE	Arid/semi-arid	Low

Country	Region	Suitability
KE	Coastal humid	Medium
KE	Highlands & mid-altitudes	High
KE	Highlands/Western	High
KE	Western	N/A
RW	Highland zones	High
TZ	Northern highlands	High
UG	Central & Western	High