

# FarmLens Ltd

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



Crop details

## African nightshade

*Solanum scabrum* (*S. nigrum* complex)

Family: Solanaceae

Categories

Vegetables

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### Quick stats

|                           |            |
|---------------------------|------------|
| <b>Family</b>             | Solanaceae |
| <b>Typical harvest</b>    | 9.9 t/ha   |
| <b>Varieties</b>          | 19         |
| <b>Pests and diseases</b> | 73         |
| <b>Seasons</b>            | 21         |

### Crop profile

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

### Weather, soil and spacing

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





| # | 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 <sub>2</sub> O <sub>5</sub> : N/A, K <sub>2</sub> 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 <sub>2</sub> O <sub>5</sub> : N/A, K <sub>2</sub> 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 <sub>2</sub> O <sub>5</sub> : N/A, K <sub>2</sub> O: N/A | Apply early morning/late afternoon             |

### Nutrient requirements

| <u>Nutrient</u>               | <u>Stage</u> | <u>Amount</u> | <u>Unit</u> |
|-------------------------------|--------------|---------------|-------------|
| N                             | Basal        | 30            | kg/ha       |
| P <sub>2</sub> O <sub>5</sub> | Basal        | 30            | kg/ha       |
| K <sub>2</sub> O              | Basal        | 30            | kg/ha       |
| N                             | Topdress     | 70            | kg/ha       |
| N                             | Basal        | 50            | kg/ha       |
| P <sub>2</sub> O <sub>5</sub> | Basal        | 25            | kg/ha       |
| K <sub>2</sub> O              | Basal        | 40            | kg/ha       |
| N                             | Topdress     | 30            | kg/ha       |
| N                             | Basal        | 50            | kg/ha       |
| P <sub>2</sub> O <sub>5</sub> | Basal        | 25            | kg/ha       |
| K <sub>2</sub> O              | Basal        | 40            | kg/ha       |
| N                             | Topdress     | 30            | kg/ha       |
| N                             | Basal        | 50            | kg/ha       |
| P <sub>2</sub> O <sub>5</sub> | Basal        | 25            | kg/ha       |
| K <sub>2</sub> O              | Basal        | 40            | kg/ha       |
| N                             | Topdress     | 30            | kg/ha       |
| N                             | Basal        | 50            | kg/ha       |
| P <sub>2</sub> O <sub>5</sub> | Basal        | 25            | kg/ha       |
| K <sub>2</sub> O              | Basal        | 40            | kg/ha       |
| N                             | Topdress     | 30            | kg/ha       |
| N                             | Basal        | 50            | kg/ha       |
| P <sub>2</sub> O <sub>5</sub> | Basal        | 25            | kg/ha       |
| K <sub>2</sub> O              | Basal        | 40            | kg/ha       |

| <u>Nutrient</u> | <u>Stage</u> | <u>Amount</u> | <u>Unit</u> |
|-----------------|--------------|---------------|-------------|
| 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       |
| 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       |

| <u>Nutrient</u> | <u>Stage</u> | <u>Amount</u> | <u>Unit</u> |
|-----------------|--------------|---------------|-------------|
| 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

| <u>Name</u>      | <u>Country</u> | <u>Maturity (days)</u> | <u>Traits</u>               |
|------------------|----------------|------------------------|-----------------------------|
| 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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| <u>Name</u>      | <u>Country</u> | <u>Maturity (days)</u> | <u>Traits</u>     |
|------------------|----------------|------------------------|-------------------|
| Local Nightshade | KE             | 70                     | Broadleaf; tender |
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### **Fertilizer recommendations**

| <u>Stage</u> | <u>Product</u>            | <u>Rate</u> | <u>Notes</u>                  |
|--------------|---------------------------|-------------|-------------------------------|
| 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**

| <u>Name</u>      | <u>Type</u> | <u>Symptoms</u>                             | <u>Management</u>  |
|------------------|-------------|---|--|
| 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   |

| <u>Name</u>    | <u>Type</u> | <u>Symptoms</u>                | <u>Management</u>   |
|----------------|-------------|--------------------------------|---|
| 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  |
| 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               |
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| Spider mites | pest        | Stippling, webbing      | Maintain humidity; miticides if severe                      |
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## Yields

| <u>System</u>         | <u>Typical</u> | <u>Min</u> | <u>Max</u> | <u>Notes</u>                                       |
|-----------------------|----------------|------------|------------|--|
| 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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| 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                                       |
| 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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| rainfed smallholder | 7              | 4          | 10         | Fresh leaves          |
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| rainfed smallholder | 7              | 4          | 10         | Fresh leaves          |



| <u>Country</u> | <u>Region</u>             | <u>Suitability</u> |
|----------------|---------------------------|--------------------|
| 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               |

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