

FarmLens Ltd

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

Crop details

Spinach

Spinacia oleracea

Family: Amaranthaceae

Categories

Vegetables

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Quick stats

Family	Amaranthaceae
Typical harvest	18.7 t/ha
Varieties	3
Pests and diseases	6
Seasons	3

Crop profile

Growth habit	annual
Days to harvest	55
Main uses	Tender leaves cooked as vegetables, used in stews, mixed greens and sometimes eaten lightly fried or in soups.
Pollination	wind
Origin and where it grows	Spinach is grown in cool and moderately warm vegetable areas, especially around towns and irrigation schemes in East Africa.

Weather, soil and spacing

Best temperature	10 - 22 °C
Rainfall	500 - 800 mm/yr
Altitude	800 - 2600 m
Best pH	6.2 - 7
Soil type	Fertile, well-drained loam or sandy loam with plenty of compost or manure so Spinach can grow soft, tender leaves.
Row spacing	30 cm
Plant spacing	10 cm
Planting depth	1.5 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 55 days after planting.

Main use: Farmers mostly grow this crop for tender leaves cooked as vegetables, used in stews, mixed greens and sometimes eaten lightly fried or in soups..

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

Where it grows: Spinach is grown in cool and moderately warm vegetable areas, especially around towns and irrigation schemes in East Africa.. Grouped under: Vegetables.

Best climate: 10 - 22 °C; 500 - 800 mm/yr; up to about 2600 m a.s.l.

Soil: Best at pH 6.2 - 7; fertile, well-drained loam or sandy loam with plenty of compost or manure so spinach can grow soft, tender leaves..

Farmer guide (Mwongozo wa Mkulima)

<u>Planting</u>	Prepare a fine seedbed. Sow Spinach seed in shallow rows, cover lightly with soil and keep moist until emergence. Thin crowded seedlings to leave enough space for leaves to expand.
<u>Transplanting</u>	Where seedlings are raised in nursery trays, transplant when they have 3–4 true leaves, handling carefully to avoid root damage.
<u>Irrigation</u>	Keep soil evenly moist so Spinach grows fast and does not get bitter. Avoid long dry spells and heavy watering afterwards, which can stress the crop.
<u>Fertigation</u>	Under drip, give small and frequent doses of nitrogen-rich fertilizer plus some potassium. Too much nitrogen late can cause very soft, watery leaves.
<u>Pest scouting</u>	Check Spinach beds every week for leaf spots, downy mildew, aphids and leaf miners. Look on both sides of leaves and remove very damaged leaves.
<u>Pruning and training</u>	No pruning needed. Harvest outer leaves first and keep the growing point to allow repeated harvests.
<u>Harvest</u>	Start harvesting Spinach when leaves are big enough for bunching but still young and tender. Harvest in the cool hours for best quality.
<u>Postharvest</u>	Cool leaves quickly, keep in the shade and avoid crushing. Pack in clean crates or perforated bags and deliver to market as soon as possible.

Nutrient schedule (Mbolea kwa Hatua)

#	<u>Stage</u>	<u>DAP</u>	<u>Product</u>	<u>Rate</u>	<u>Targets (kg/ha)</u>	<u>Notes</u>
1	Basal before sowing	0	NPK 17-17-17 or 15-15-15	150 kg/ha	N: 25, P?O?: 25, K?O: 25	Broadcast and incorporate into top 10–15 cm of soil before sowing Spinach.
2	Early topdress	14	CAN 26% N	80 kg/ha	N: 21, P?O?: 0, K?O: 0	Apply between rows on moist soil, then water or lightly incorporate.
3	Topdress after first harvest	35	Urea 46% N or CAN	50 kg/ha	N: 23, P?O?: 0, K?O: 0	Apply while Spinach regrows; avoid very heavy nitrogen late in the crop.

Nutrient requirements

<u>Nutrient</u>	<u>Stage</u>	<u>Amount</u>	<u>Unit</u>
N	Basal	40	kg/ha
P?O?	Basal	50	kg/ha
K?O	Basal	50	kg/ha
N	Topdress_early	30	kg/ha
P?O?	Topdress_early	0	kg/ha
K?O	Topdress_early	20	kg/ha

<u>Nutrient</u>	<u>Stage</u>	<u>Amount</u>	<u>Unit</u>
N	Topdress_after_first_cut	20	kg/ha
P?O?	Topdress_after_first_cut	0	kg/ha
K?O	Topdress_after_first_cut	20	kg/ha

Varieties

<u>Name</u>	<u>Country</u>	<u>Maturity (days)</u>	<u>Traits</u>
Broad-leaf Spinach	KE	45	Broad, dark green leaves and good regrowth after cutting.
Semi-savoy Spinach	KE	45	Slightly crinkled leaves, good for bunching and markets.
Hybrid Spinach (cool season)	TZ	50	Uniform plants, high yield and good quality leaves in cooler areas.

Fertilizer recommendations

<u>Stage</u>	<u>Product</u>	<u>Rate</u>	<u>Notes</u>
Basal	NPK 17-17-17 or 15-15-15	150	Balanced base for early Spinach growth.
Topdress (N source)	CAN 26% N or urea	80	Apply once or twice based on leaf colour and vigour.
Organic	Well-rotted manure or compost	8000	Apply before planting to improve soil structure and water holding.

Pests and diseases

<u>Name</u>	<u>Type</u>	<u>Symptoms</u>	<u>Management</u>
Aphids	pest	Small insects on young Spinach leaves and stems, curled leaves and sticky honeydew.	Encourage natural enemies, avoid too much nitrogen and use selective insecticides/biopesticides when necessary.
Leaf miners	pest	White or pale winding tunnels inside Spinach leaves made by larvae feeding between leaf surfaces.	Remove and destroy heavily infested leaves and use recommended insecticides targeting adults when needed.
Cutworms	pest	Young Spinach plants cut near soil level, causing gaps in the row.	Prepare land early, control weeds and, where severe, use baits or spot treatments.
Downy mildew	disease	Yellow patches on upper Spinach leaf surface with grey or purple mould underneath, especially in cool, wet weather.	Use resistant varieties where available, improve airflow and use protectant fungicides when needed.
Leaf spots (Cercospora and others)	disease	Small brown or grey spots on Spinach leaves that may join together, causing yellowing and leaf death.	Avoid overhead irrigation late in the day, rotate crops and remove heavily diseased leaves.
Root and stem rots	disease	Wilting, yellowing and rotting of Spinach stems or roots in poorly drained, waterlogged soils.	Improve drainage, avoid overwatering and rotate with non-leafy vegetables and cereals.

Yields

<u>System</u>	<u>Typical</u>	<u>Min</u>	<u>Max</u>	<u>Notes</u>
Backyard / small-scale Spinach	8	5	12	Some manure, little fertilizer, irregular harvesting and basic pest control.
Open-field Spinach, improved management	18	12	25	Good varieties, well-timed fertilizer and regular picking.
Irrigated or high-input Spinach	30	20	40	Good seed, drip irrigation or frequent watering, fertigation and careful pest and disease control.

Season calendars

<u>Country</u>	<u>Region</u>	<u>Planting</u>	<u>Harvest</u>
KE	Highland and cool Spinach belts (rainfed)	Cooler months or with good moisture	First harvest about 4–6 weeks after emergence, then repeated pickings.
KE	Irrigated peri-urban Spinach areas	Most of the year with reliable water	Continuous pickings over several weeks to months.
TZ	Highland and mid-altitude vegetable zones	Cooler, moist periods or under irrigation	4–6 weeks after emergence, with multiple harvests.

Region suitability

<u>Country</u>	<u>Region</u>	<u>Suitability</u>
KE	Highland vegetable-growing areas	High
KE	Peri-urban irrigated Spinach belts	High
KE	Very hot lowlands without irrigation	Low
TZ	Highland and mid-altitude vegetable zones	High
UG	Cool mid- to high-altitude vegetable regions	High

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