

Crop details

Categories

Green gram (ndengu)

Legumes & Pulses

Vigna radiata

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Family: Fabaceae

Quick stats

Family	Fabaceae
Typical harvest	1.3 t/ha
Varieties	3
Pests and diseases	6
Seasons	3

Crop profile

Growth habit	annual
Days to harvest	65
Main uses	Dry grain for ndengu stew, porridge and flour; young plants and haulms for animal feed.
Pollination	self
Origin and where it grows	Green gram (ndengu) is widely grown in warm, semi-arid and coastal areas of East Africa, often as an intercrop or rotation after cereals.

Weather, soil and spacing

Best temperature	22 - 32 °C
Rainfall	400 - 700 mm/yr
Altitude	0 - 1600 m
Best pH	5.5 - 7
Soil type	Light to medium, well-drained soils. Green gram (ndengu) does well on sandy loams and loams with reasonable fertility.
Row spacing	45 cm
Plant spacing	10 cm
Planting depth	3 cm
Seed rate	15 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 65 days after planting.

Main use: Farmers mostly grow this crop for dry grain for ndengu stew, porridge and flour; young plants and haulms for animal feed..

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

Where it grows: Green gram (ndengu) is widely grown in warm, semi-arid and coastal areas of East Africa, often as an intercrop or rotation after cereals.. Grouped under: Legumes & Pulses.

Best climate: 22 - 32 °C; 400 - 700 mm/yr; up to about 1600 m a.s.l.

Soil: Best at pH 5.5 - 7; light to medium, well-drained soils. green gram (ndengu) does well on sandy loams and loams with reasonable fertility..

Farmer guide (Mwongozo wa Mkulima)

<u>Planting</u>	Plant Green gram (ndengu) at the onset of the rains. Place 2–3 seeds per hole, cover lightly and thin to 1–2 strong plants per stand.
<u>Transplanting</u>	Ndengu is direct seeded in the field, not transplanted.
<u>Irrigation</u>	Ndengu is drought tolerant but needs moisture for germination, flowering and pod filling. It can still yield on short, well-distributed rains.
<u>Fertigation</u>	Being a legume, Green gram (ndengu) fixes nitrogen. Give a small starter phosphorus dose; extra nitrogen is usually not required.
<u>Pest scouting</u>	Check fields weekly. Look for flower thrips, aphids, pod borers and leaf spots. Also watch for shattering if pods are left too long.
<u>Pruning and training</u>	No pruning needed. Keep weeds low especially in the first month after emergence.
<u>Harvest</u>	Harvest ndengu when most pods turn black or dark brown and rattle when shaken. To reduce shattering, pick in 2–3 rounds or cut the crop and dry under shade.
<u>Postharvest</u>	Dry pods or threshed Green gram (ndengu) grain on clean tarpaulins. Dry until seeds are hard, then store in airtight containers or treated bags to avoid weevils and bruchids.

Nutrient schedule (Mbolea kwa Hatua)

#	Stage	DAP	Product	Rate	Targets (kg/ha)	Notes
1	Basal at planting	0	NPK 10-24-10 or similar starter	35 kg/ha	N: 3.5, P?O?: 8.4, K?O: 3.5	Apply in small bands or spots near ndengu seed, not directly in the planting hole.
2	Optional K topdress (early flowering)	30	Muriate of potash (MOP) or NPK with K	20 kg/ha	N: 0, P?O?: 0, K ?O: 12	Use in fields with repeated Green gram (ndengu) cropping and full residue removal.

Nutrient requirements

Nutrient	Stage	Amount	Unit
N	Basal	8	kg/ha
P?O?	Basal	18	kg/ha
K?O	Basal	12	kg/ha
N	Topdress_early	0	kg/ha
P?O?	Topdress_early	0	kg/ha
K?O	Topdress_early	10	kg/ha

Varieties

<u>Name</u>	<u>Country</u>	<u>Maturity (days)</u>	<u>Traits</u>
Early ndengu – short duration	KE	60	Early Green gram (ndengu) for short rains; escapes end-of-season drought.
Medium-duration Green gram (ndengu)	TZ	70	Good grain size and colour, suited to semi-arid and coastal areas.
Local ndengu landrace	KE	75	Traditional flavour and cooking quality; moderate yield and good adaptation.

Fertilizer recommendations

<u>Stage</u>	<u>Product</u>	<u>Rate</u>	<u>Notes</u>
Basal	NPK 10-24-10 or DAP (small dose)	35	Provides starter phosphorus for roots and nodulation of Green gram (ndengu).
Topdress (optional K)	Muriate of potash (MOP) or NPK with K	20	Used mainly in K-deficient fields and where residues are removed.

Pests and diseases

<u>Name</u>	<u>Type</u>	<u>Symptoms</u>	<u>Management</u>
Flower thrips	pest	Silvery or brown flowers, poor pod set and small pods on Green gram (ndengu).	Plant early, avoid very late planting, and use recommended insecticides only when damage is severe.
Aphids	pest	Clusters of small insects on young shoots of ndengu, curling leaves and sticky honeydew.	Encourage natural enemies and use selective sprays only if populations are very high.
Pod borers	pest	Holes in ndengu pods, webbing inside pods, damaged seeds.	Scout during flowering and early podding; use biopesticides or insecticides early when first damage is seen.
Powdery mildew	disease	White powdery growth on leaves, which later turn yellow and dry.	Use tolerant Green gram (ndengu) varieties and avoid very dense planting.
Leaf spots	disease	Brown or dark spots on ndengu leaves; in severe cases leaves dry prematurely.	Use clean seed, rotate with non-legume crops and avoid planting continuously on the same field.
Storage weevils and bruchids	pest	Small holes and powder in stored Green gram (ndengu) grain.	Dry grain well, cool it, then store in airtight containers or treated bags; clean stores between seasons.

Yields

<u>System</u>	<u>Typical</u>	<u>Min</u>	<u>Max</u>	<u>Notes</u>
Smallholder rainfed (low input)	0.7	0.4	1	Local ndengu, little or no fertilizer, basic weeding.
Smallholder rainfed (improved management)	1.2	0.8	1.8	Improved Green gram (ndengu) varieties, good spacing, timely weeding and pest control.
High input / irrigated	2	1.5	2.5	Reliable moisture, good fertility and strong pest and disease management.

Season calendars

<u>Country</u>	<u>Region</u>	<u>Planting</u>	<u>Harvest</u>
KE	Semi-arid and coastal ndengu zones (short rains)	Oct–Nov	Jan–Feb
KE	Semi-arid and coastal ndengu zones (long rains)	Mar–Apr	Jun–Jul
TZ	Central and northern drier areas	Dec–Jan	Mar–Apr

Region suitability

<u>Country</u>	<u>Region</u>	<u>Suitability</u>
KE	ASAL (arid and semi-arid lands)	High
KE	Eastern and coastal Green gram (ndengu) belt	High
KE	Very wet highland zones	Low
TZ	Central plateau and northern dry zones	High
UG	Drier mixed farming and cattle corridor areas	Medium

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