

# FarmLens Ltd

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



Crop details

## Green Gram

*Vigna radiata*

Family: Fabaceae

Categories

Legumes & Pulses

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### Quick stats

|                           |          |
|---------------------------|----------|
| <b>Family</b>             | Fabaceae |
| <b>Typical harvest</b>    | 1.3 t/ha |
| <b>Varieties</b>          | 48       |
| <b>Pests and diseases</b> | 96       |
| <b>Seasons</b>            | 48       |

### Crop profile

|                                  |   |
|----------------------------------|---|
| <b>Growth habit</b>              | annual  |
| <b>Days to harvest</b>           | 65  |
| <b>Main uses</b>                 | Dry grain for ndengu stew, porridge and flour; young plants and haulms for animal feed.   |
| <b>Pollination</b>               | self  |
| <b>Origin and where it grows</b> | 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

|                         |  |
|-------------------------|--|
| <b>Best temperature</b> | 22 - 30 °C   |
| <b>Rainfall</b>         | 400 - 800 mm/yr  |
| <b>Altitude</b>         | 0 - 1500 m   |
| <b>Best pH</b>          | 6 - 7  |
| <b>Soil type</b>        | Light to medium, well-drained soils. Green gram (ndengu) does well on sandy loams and loams with reasonable fertility. |
| <b>Row spacing</b>      | 45 cm  |
| <b>Plant spacing</b>    | 10 cm  |
| <b>Planting depth</b>   | 3 cm   |
| <b>Seed rate</b>        | 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.



| # | 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. |
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| 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. |
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## Nutrient requirements

| <u>Nutrient</u> | <u>Stage</u>   | <u>Amount</u> | <u>Unit</u> |
|-----------------|----------------|---------------|-------------|
| 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       |
| N               | Basal          | 8             | kg/ha       |
| P?O?            | Basal          | 18            | kg/ha       |
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### Field images



### 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. |
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### **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.            |
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| Topdress (optional K) | Muriate of potash (MOP) or NPK with K | 20          | Used mainly in K-deficient fields and where residues are removed.            |
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## **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. |

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

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## 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.              |
| Smallholder rainfed (low input)           | 0.7            | 0.4        | 1          | Local ndengu, little or no fertilizer, basic weeding.                                  |
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| 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**

| <b>Country</b> | <b>Region</b> | <b>Planting</b> | <b>Harvest</b> |
|----------------|---------------|-----------------|----------------|
|----------------|---------------|-----------------|----------------|

|    |  |         |         |
|----|--|---------|---------|
| 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 |
| 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 |
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| KE | Semi-arid and coastal ndengu zones (short rains) | Oct–Nov | Jan–Feb |

|    |  |         |         |
|----|--|---------|---------|
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| TZ | Central and northern drier areas                 | Dec–Jan | Mar–Apr |

### **Region suitability**

| <b><u>Country</u></b> | <b><u>Region</u></b>                          | <b><u>Suitability</u></b> |
|-----------------------|---|---------------------------|
| 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](http://farmlens.africa) and [app.farmlens.africa](http://app.farmlens.africa). Headquarters: Nairobi, Kenya. This guide was generated from the FarmLens database.