

New early maturing large-seeded green gram variety KAT 00308 for semi-arid Kenya

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Introduction

Green gram (mung bean) is a relatively drought tolerant, low-input crop and a major income earner in eastern Kenya. It causes less flatulence than other legumes. Kenya produces 125,000 tonnes against a domestic demand of 3.4 million tonnes. Green gram matures in 65-75 days under frost-free conditions and temperature range of 27-30°C.

Rainfall

Adequate rainfall (300-700 mm) is required from flowering to late pod fill for purposes of ensuring good pod filling and yield. However, high humidity and rainfall close to maturity may result in diseases.

Characteristics

- It is a semi-determinate plant.
- Pods are cream
- Grains are shiny green
- Large seed size (8-10 g/100 seeds)
- Flowers in 40-45 days
- Matures in 65-75 days
- Yields 1800-2100 kg/ha (8-9 bags/acre)
- Tolerant to aphids, resistant to yellow mosaic and moderately resistant to powdery mildew
- Cool conditions in May to July predispose the variety to powdery mildew attack

Target areas of production

- KAT 00301 performs well in well-drained sandy loam soils in semi-arid and well-watered areas at 500-1600m above sea level.
- The variety does well in lower Machakos, Kitui, Mwingi, Tharaka, Mbeere and Makueni due to its earliness.

Land preparation

The field should be ploughed with a hoe, oxen or tractor to a fine seedbeds. A fine seedbed gives a good crop stand and plant population.

Planting

Always plant certified seed. Early planting is recommended but not before 30 mm of rainfall is received. Varietal purity is essential as mixtures are unacceptable both for market and cooking. Replace planting seed every 2-3 years.

Spacing: Spacing of 50 × 15 cm is recommended. When using oxen, the spacing is 60 × 10 cm. However, under conservation agriculture (no soil tillage) the spacing may be reduced to 45 × 10 cm but in severe moisture stress, wider spacing may be used to reduce plant population.

Seed rate: 29-32 kg/ha (11-14 kg/acre)

Number of plants per hill: At least 2

Depth of planting: 4-5 cm.

Weeding

First weeding should be done 2-3 weeks after emergence and the 2nd one just before flowering. Avoid weeding when plants are damp since this can result in spread of bacterial and fungal diseases.

Fertilizer

Soil analysis should be done to determine nutrient requirements, which should be met by applying fertilizer (phosphorus, potassium calcium, magnesium and sulfur. A starter N and P of 10 kg/ha is recommended (use a phosphate fertilizer like NPK at 50 kg/ha). Fertilizer should be applied when the soil is moist. When dry planted, avoid seed-fertilizer contact. In very poor soils, a combination of manure and fertilizer is recommended.

Crop protection

Green grams are attacked by thrips, bean fly, bean bugs, aphids, pod borers, pod sucking bugs, apion beetles and bruchids. They can be controlled by spraying with the following chemicals at the manufacturer's recommendation:

| Pest | Insecticide |
|----------------------|---|
| Thrips | Thiodan, Sherpa plus, Duduthrin, Thunder, |
| Bean fly | Dimethoate, |
| Hericoverpa armigera | Karate, Thunder |
| Bean bugs | Karate, Dimethoate, Thunder |
| Aphids | Thiodan, Sherpa plus, Karate, Thunder |
| Pod borer | Dimethoate, Sherpa plus, Thunder |
| Pod sucking bugs | Dimethoate, Karate, Thunder |
| Apion beetle | Thiodan, Karate, Thunder |
| Apion beetle | Thiodan, Karate, Thunder |
| Bruchids | Proper sanitation, Super Actellic |



Some mature pods ready for harvest

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Editorial and publication coordinated by:

Knowledge & Information Unit