Growing chickpeas

(*Cicer arietinum* L.)
Information provided by
ARC-Grain Crops Institute
Private Bag X1251, Potchefstroom 2520
Tel: 018 299 6100 • Fax: 018 294 7146
Soil requirements

Chickpeas prefer a well-drained, clayey to loamy soil with a pH of 5 to 9 (KCl).

They do not tolerate waterlogging.

Climate

Chickpeas do well where the rainfall is high during the early growth stages and pod filling.

When chickpeas are sown during winter in summer rainfall areas, irrigation should be applied. The crop should only be sown during spring (September) in areas where the rainfall is 400 to 600 mm annually.

Chickpeas are susceptible to frost damage during flowering.

The crop is tolerant to high temperatures during flowering.

Rainfall during harvest may cause pod shedding and yield loss.

Varieties

Varieties are divided into two main groups:

- **Desi type**: smaller seed, more drought tolerant, adapted to low-rainfall areas.
- **Kabuli type**: later maturing, higher-rainfall areas.

  ☀ Seed should be available from seed merchants in small quantities.

  ☀ Desi plants are shorter, while Kabuli types grow taller.
Seeds of the Desi type are usually dark and odd shaped. Kabuli-type seeds are cream coloured.

**Crop production**

- If sown during winter under irrigation (in summer rainfall areas) it should only be during the early period when conditions are still warm.
- Sowing rates vary with seed size. Optimum plant densities should be 45 plants/m² in rows 30 to 45 cm apart. Calculation of seedling rates (kg/ha) can be done as follows:

  \[
  \text{number of plants/m}^2 \times \text{pods/plant} \times 1000 \times \text{seed mass (g)} \div \text{germination (\%)}
  \]

- Seeds should be sown 50 to 80 mm deep.
- Chickpeas can either be inoculated or given 50 kg N/ha (180 kg LAN/ha) and superphosphate (single) at a rate of 50 to 100 kg/ha.

**Harvesting**

- Timely harvesting is essential.
- Grain moisture should be 13 % to minimise cracking and yield loss.
- Rainfall during harvesting can cause yield loss.

**Yield potential**

- Average yields are 1 200 kg/ha and can be up to 2 000 kg/ha.
- Yield estimation (t/ha) can be calculated as follows:

  \[
  \text{number of plants/m}^2 \times \text{pods/plant} \times \text{seeds/pod} \times \text{seed mass (g)} \div 100
  \]
Weed control

- Chickpeas are susceptible to weed competition, a weed-free field is therefore essential.

- It should be noted that no herbicide is registered on chickpeas in South Africa.

- Chickpeas may be susceptible to sulphonylurea residue.
Plant diseases

*Fusarium* root rot may occur as a serious disease and could be avoided by treating the seed with a fungicide.

Insect pests

Bollworm may appear during pod setting and filling and should be sprayed immediately.

Marketing

Contracts should be negotiated prior to planting if grain is to be sold and not utilised directly.