Cultivating cowpeas
Soil and climatic requirements

- Cowpeas can be planted in soils that vary from sandy to clayey, but soil that is easily waterlogged must be avoided. Nitrogen fixation, which is a characteristic of legumes, is inhibited in waterlogged soils.

- Production is also possible on marginal soils. On less fertile soils cowpeas can produce some protein-rich vegetative material as well as seed.

- Neutral soil pH is optimal for cowpea production. However, cowpeas can also be planted in acid soils where aluminium toxicity occurs.

- Cowpeas can be produced successfully in areas where soil fertility and pH are not suitable for the production of maize.

- For optimal production soils must have a depth of at least 1 m to ensure sufficient root development to maintain the plant during drought.

- Cultivation can begin early in the season as soon as the minimum temperature remains above 10 °C.

- The best vegetative growth is possible with temperatures varying from 21 to 33 °C, while higher temperatures can cause earlier flowering and flower abscission, resulting in poor pod set.

- High night temperatures (above ± 17 °C) can cause flower abscission in some cultivars during flowering.

- It is drought tolerant and can be produced in areas where very few other crops would survive. Well-distributed rainfall of 450 mm per year will be sufficient to produce 1 t seed/ha and 4 t hay/ha.
Planting and planting date

- Well-ploughed soils, in the case of sandy soils, would be suitable for planting cowpeas. Soil preparation is very important, because it can ensure that fewer weeds emerge soon after planting, therefore reducing competition early in the plant’s life, especially where the availability of water is a problem.

- Planting can be done mechanically or by hand. When planting by hand, a hand hoe or a spade can be used to open the soil to plant the seed.

- Interrow width must be adapted according to the growth habit of the variety that is planted. Upright types can be planted in 30 to 90 cm rows, semi-runners in 90 to 150 cm rows and runner types in 150 to 200 cm rows, depending on the rainfall.
In-row spacing must not be more than 75 cm to ensure a good plant population.

Upright types need a plant population of at least 120 000 plants/ha for optimal production and 70 000 plants/ha in the case of semi-runner or runner types.

A planting depth of 5 cm is optimal. Ensure good contact between the seed and the soil.

Cowpeas can be planted without any fertilisation and the crop will still give a good yield if the soil fertility is acceptable. However, it is not advisable because the sustainability of such a practice is questionable.

Cowpeas can benefit from inoculation with *Rhizobium* bacteria.

**Cultivars**

Cultivars varying from runners to erect types are available.

The cultivars can be divided into photosensitive and photoinsensitive types which determine the best planting time for each cultivar. This means that up to flowering the sensitive cultivars will be influenced by daylength. Flowering of the insensitive cultivars will be influenced less by daylength than in the case of the sensitive cultivars.

Most of the indeterminate cultivars such as Bechuana White, Chappy, Encore and Iron Grey are photosensitive. The seed yield of these cultivars could be affected by the planting date. Higher yields would be obtained by early planting of these cultivars.

Upright and semi-determinate cultivars can be planted throughout the growing season with lower seed loss than in the case of sensitive cultivars.
Vegetative growth of both types is not influenced by daylength and growing will therefore continue until the occurrence of the first frost.

**Pest control**

- Weed control by hand or mechanical means is usually sufficient.
- Insects, especially aphids, can cause damage to leaves, flowers and pods. Any registered chemical can be used.
- Viral diseases which are transmitted by aphids can cause severe losses. Aphid control is therefore important. Viral infection can be minimised by early planting when aphid populations are not at a peak.
- The *Alectra* plant parasite can cause yield losses in cowpeas in some regions. Most local cultivars are susceptible to *Alectra* infestation.
- Nematodes cause yield losses if the cowpea plant is infected early in the growing season, but when infection takes place later in the season the effect is not as severe. To avoid severe nematode infestations cowpeas should not be grown as a monoculture crop on the same land for more than two seasons.
- A variety of other diseases can cause damage in abnormally wet seasons and can be controlled chemically.

**Harvesting**

- Harvest time varies according to the product.
- *Hay* is harvested as soon as the first pods start to dry, by hoeing the cowpeas by hand or with a V-blade on a tractor and then left to dry.
- *Seed* is harvested as soon as the pods are dry and harvesting can continue throughout the season.
- The cowpea weevil can cause damage to stored cowpeas as it lays its eggs on the seed. This problem can be overcome by placing the cowpeas in a sealed plastic bag inside an other plastic bag and sealing it tightly.
Utilisation

- Cowpeas can be utilised by humans as well as animals.
- The leaves and growth points can be picked early in the growing season and cooked as vegetables. The leaves can be dried and stored for consumption during the winter months.
- Young green pods can be picked and cooked as green beans.
- Dry seed is used in soups and stews.
- The dry hay is used for feeding animals during the winter when grazing becomes scarce.
- Green vegetative cowpea material can either be used for forage or ploughed in for green manure.