

Sustainable agriculture for the future

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Producing Sweet Potatoes

Sunette Laurie

Sweet potato plays an important role in food systems of Southern Africa countries, including South Africa. Sweet potato is an important food and poverty relief crop. Orange-fleshed types can be used to combat widespread Vitamin A deficiency that results in blindness to many African children.

Sweet potatoes can be used in different ways:

- Storage roots can be eaten raw, boiled, baked, or cooked
- The tips of shoots (petioles) and young leaves can be eaten as a vegetable
- Crop residues can be used as stock feed
- Storage roots can be used to make starch, alcohol, flour, jam, and juice
- High carbohydrates content makes sweet potato an important energy source
- Orange-fleshed sweet potato is a good source of vitamin A
- Green leaves provide additional proteins, vitamins and minerals.



Soil requirements

Sweet potatoes grow well in sandy-loam, loam, or clayey-loam soil. The crop needs good drainage and is sensitive to waterlogging, salinity, and alkalinity. Optimum pH (H₂O) is 5.6 – 6.5. Stony or clay soil is not good, as it does not allow the formation (development) of good storage roots.

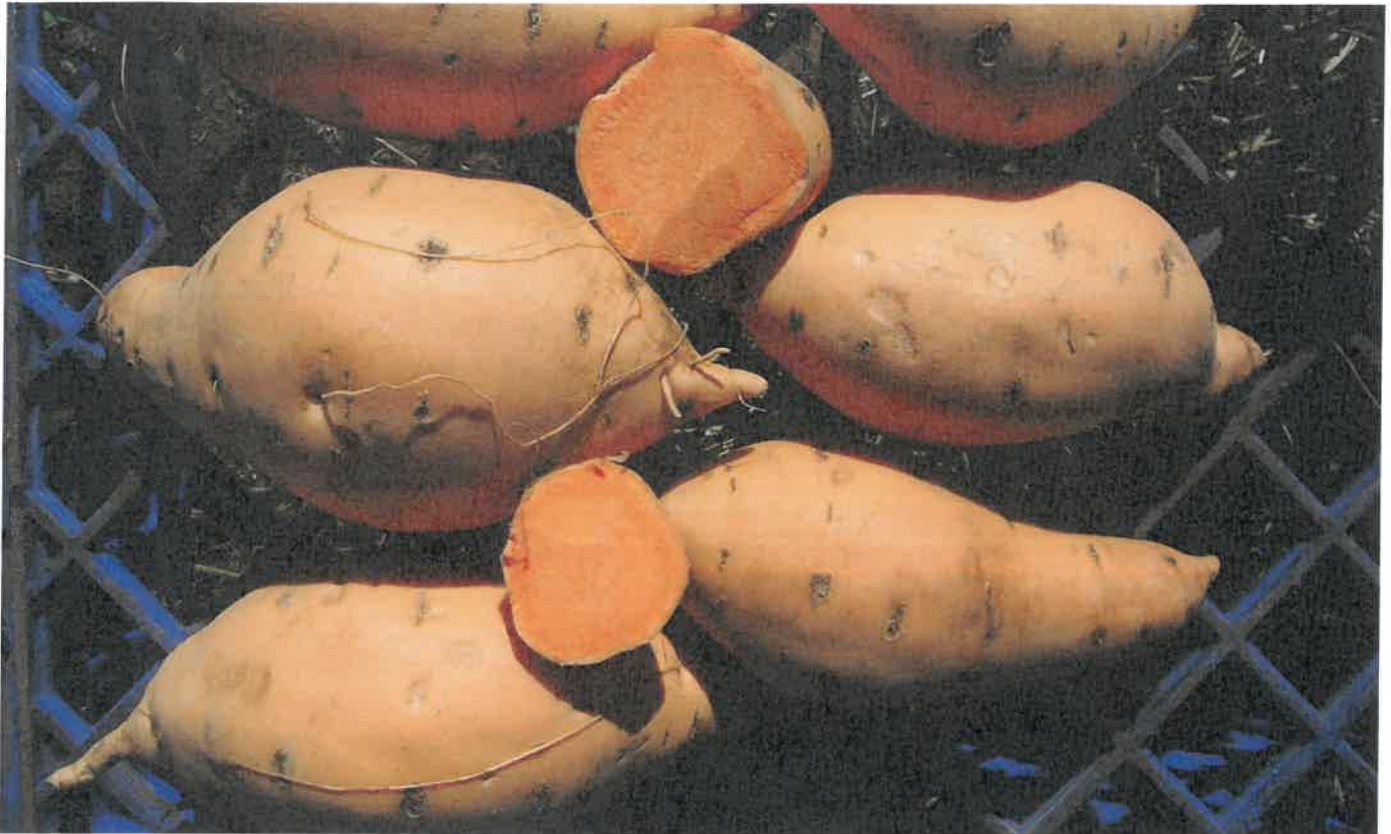
Climate requirements

Sweet potato is a warm season crop. Sweet potatoes are sensitive to low temperatures, especially frost. Sweet potato performs best in the subtropical areas but can be grown in all South African provinces if supplementary irrigation is provided. The plant is somewhat drought tolerant once the storage roots have formed.

Crop rotation

Crop rotation is essential to prevent disease and pest build-up. Sweet potatoes should not be grown more than once every 3 years on the same soil.





Propagation

Propagation is by stem cuttings. Pieces of stem of 20-30 cm long should be taken for cuttings. The leaves may be removed from stem cuttings before planting, but it is not necessary. Top cuttings are more vigorous than cuttings from the other parts of the vine. Use healthy, insect and disease free cuttings. Always cut shoots from a healthy plant. Do not use vines from volunteer sweet potatoes because these might transport pests and diseases.

Soil preparation

Loosen the soil thoroughly by either ploughing or using a fork, hand hoe or spade. Loosen the soil to a depth of 250-300 mm for good root aeration, root penetration and drainage. Remove stones and break hard layers to ensure good root penetration. All clods should be smashed by using a rake or hand tined cultivator until a deep fine bed is obtained.

PLANTING METHOD

Ridging:

The plants are grown on ridges or mounds. The ridges are especially beneficial in areas liable to flooding and also ease harvesting. Cuttings are laid 30 cm apart on the ridge with the basal end planted in the soil. Cuttings are planted vertically with 3 - 4 buds (nodes) under the soil surface or horizontally. Soil must be

pressed down firmly around the cutting so that the soil should come in good contact with the stem.

Flat bed: Some farmers grow sweet potatoes on flat beds in sandy soil with good results

Spacing

Sweet potato can be regarded as a field crop rather than a home garden vegetable. This is because it is a runner and takes large spaces. For the home garden (where space is limited) a row or two could be enough.

Place stem cuttings 25-35 cm apart (or length of spade blade) within the row. Between the centre of ridges can be 80 cm for single rows or 150 cm for double rows. Ridges can be 30-40 cm high.

Planting time

Areas with light mild frost: Beginning of November to mid-December.

Areas with heavy frost: Mid November to beginning of December.

Frost-free areas: August to March. In cooler areas September to February.

Winter rainfall areas: mid-November to beginning of December ; November is optimal.

Fertilization

Soil samples should be taken few months before planting in order to rectify soil fertility problems. General recommendations