Growing sweet potatoes in Western Australia

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Sweet potatoes are available all year from Western Australian growers and a large volume of produce is also imported from Queensland. They grow best on well-drained sandy loams, although sandy soils produce good crops if well fertilised and watered.

Harvested sweet potatoes store well for one to two months under ambient temperatures but need special treatment for longer storage.

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Introduction

The sweet potato (*Ipomea batatas*) is a member of the morning glory or *Convolvulaceae* family. It is not related to the common potato. The plant has long trailing slender stems and is perennial, but is treated as an annual in cropping.
The tuberous root has high food value, fibre and energy. It is rich in sugar and vitamin C and contains good quantities of vitamin A, vitamin B, calcium and iron.

Climate

The sweet potato is a semitropical plant that grows best between 20 and 30°C. A minimum frost-free growing season of four to six months is needed, with a minimum of cool, cloudy weather. Plant growth is restricted below 10°C and plants are physically damaged at 1°C.

Soils

Sweet potatoes grow best on well-drained sandy loams, although sandy soils produce good crops if well fertilised and watered. Heavy and swampy soils tend to produce rough, misshapen roots.
The pH of the soil measured in calcium chloride should ideally be 5.8 to 7.0.
The yield of roots declines rapidly as salt levels rise. The soil conductivity should be less than 25 to 50mS/m.
Cultivate to provide 20 to 30cm of well worked soil. Deep ripping with a tined implement may improve soil drainage and root shape.
On sandy soils, the crop can be planted on flat or ridged ground. Ridged ground facilitates machine harvesting. On heavier soils and in situations where waterlogging may occur, grow the plants on 20 to 25cm high ridges.

Rotation

Sweet potatoes should be rotated with other crops to prevent build-up of diseases such as scurf and to manage root-knot nematode. Plant sweet potatoes on the same soil only once every two to four years.

2. Space waterways 50 m apart. Make them flat-bottomed, at least 2 m wide, and lower than the surrounding land. Where possible, use natural depressions in the block.
3. Form beds parallel to the top drain so that water can be channelled between the beds into the waterways.
4. Build trafficways beside the waterways.
5. Plant seed or runners of couch, kikuyu or carpet grass in the base of waterways and trafficways. Once these structures are established, they can remain as permanent fixtures.
6. Run beds across the slope, parallel to the contour drain. This lay-out minimises loss of soil between beds and combines good water infiltration and safe removal of runoff.

These layouts can be used safely on all slopes with a fall of up to 8%. Sweetpotatoes should not be grown on steeper slopes.

Crop rotation

A fallow period must follow a crop of sweetpotatoes to prevent the build up of soil-borne pests and diseases and eliminate volunteer plants. Do not re-plant sweetpotatoes back into the same ground for at least three years. Most other crops can be used in a rotation.

Cover crops in rotation with cash crops improve soil structure and productivity, and reduce pest and disease problems. Cover cropping combined with other soil conservation methods, such as contour banks on steeper slopes, will reduce erosion and help maintain your most valuable asset, your soil.

A guide to land preparation

The soil type and cropping history of the block influence soil fertility and land preparation. If you don't have information on the soil's nutrient status, get a soil analysis done. Table 5 shows a suggested land preparation schedule based on the number of weeks before planting.

Table 5. *A suggested land preparation schedule for sweetpotatoes*

Weeks before planting	Activity
20	Cultivate soil, rip and fertilise if necessary. If soil pH is below 5.5 add lime or dolomite. Plant a green manure crop.
10 – 12	Slash or cut with a mulcher to avoid hard fibrous stems.
8	Sample soil for a nutrient analysis.
6	Mulch, then plough in green manure crop. Act on soil nutrient analysis if necessary.
2 – 4	Cultivate soil as necessary to speed break down of green manure crop and bring the soil to a suitable tilth for forming hills.
0 – 1	Apply basal fertiliser and hill up just before planting.
0	Plant the crop.

Initial cultivation. If your land is under grass or weeds, plough or disc-cultivate the block. A hard pan or compaction layer may have formed from regular use of a rotary hoe and other cultivation equip-