agriculture
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Department:
Agriculture and Rural Development
PROVINCE OF KWAZULU-NATAL

SWEET POTATOES PRODUCTION

TOGETHER WE HAVE MADE KZN A BETTER PROVINCE TO LIVE IN

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SWEET POTATOES PRODUCTION

TOGETHER WE HAVE MADE KZN A BETTER PROVINCE TO LIVE IN

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SWEET POTATOES

The sweet potato is the world's most nutritious vegetable, producing more food per hectare than any other crop. Grown from vine cuttings or rooted slips, not from true seed. A tropical plant needing a frost free growing season of at least 4 to 5 months.

BENEFITS OF SWEET POTATOES:

- High nutritional value
- High yield potential
- Easy to grow
- Low input costs
- Drought tolerant
- Has few diseases

CONSTRAINT:

Lack of readily available virus-free planting material.

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CULTIVARS

A very wide choice of root shapes and colours is available.

Old cultivars were mainly red-skinned and cream fleshed.

New orange fleshed cultivars have better nutritional value.

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PLANTING TIMES

Climatic requirements

The effects of climate, availability of plant material and seasonal price trends will determine the optimal planting time for any area. Cold temperatures cause yellowing & die-back. Frost will kill the vines.

Warm Area (No Frost)

(The green shading on the map)

- Planting can occur throughout the year.
- Usual planting time is from January to March
- This gives a June to August harvest when prices are normally high.

- Vines planted in winter grow slowly.

- Do not plant between May and July.

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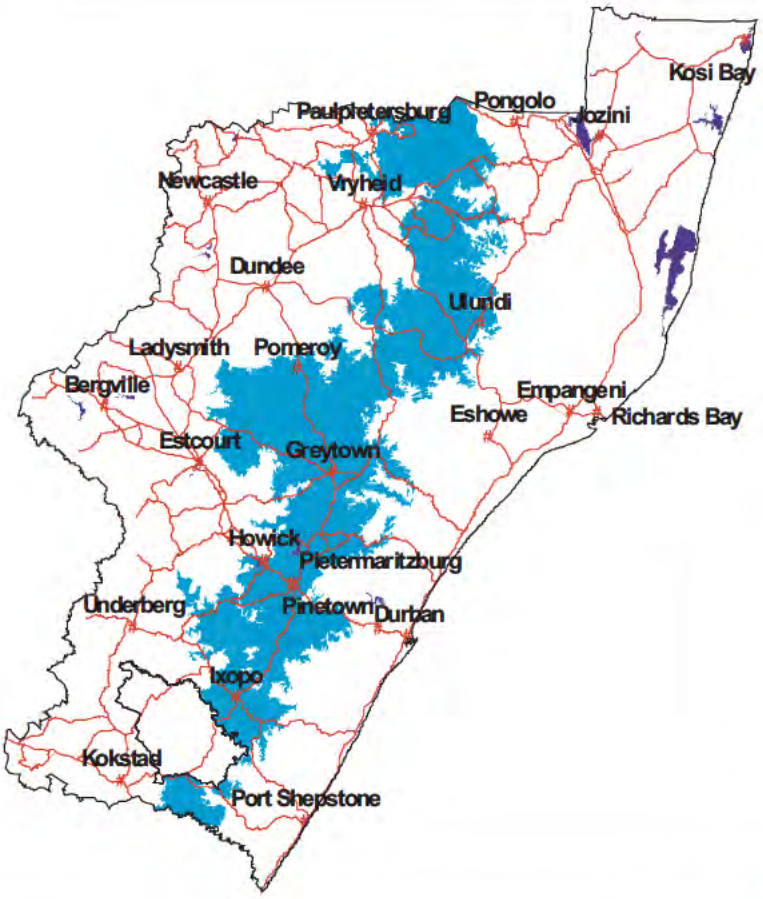
PLANTING TIMES (Cont.)

Cool Area (Light Frost)

(The blue shading on the map)

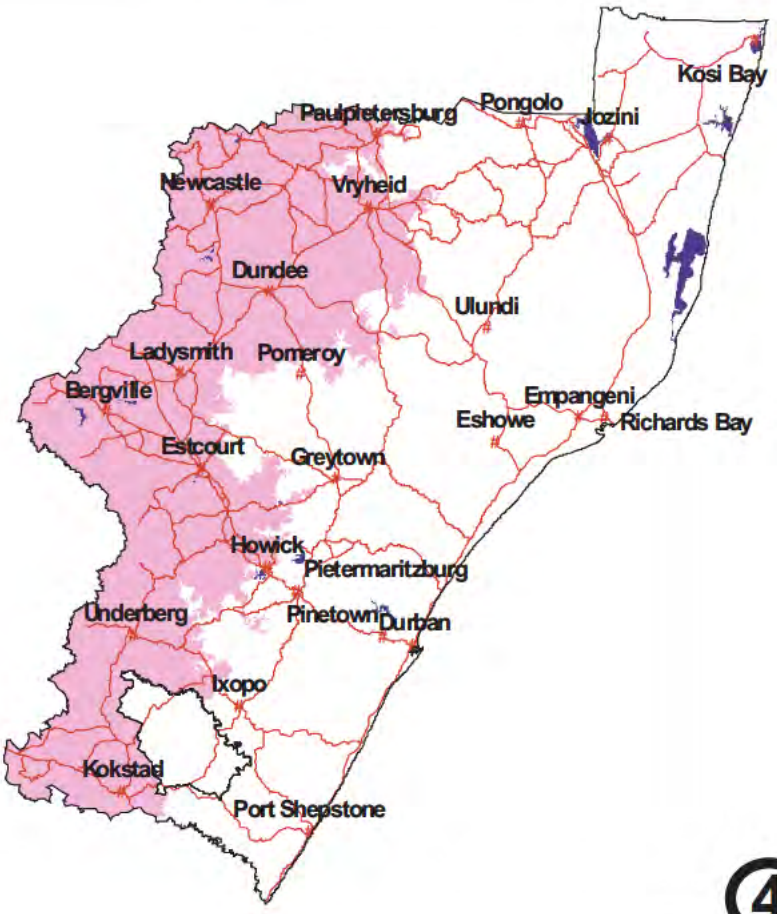
- Plant after the risk of frost. (October to December).
- Crops planted in January give lower yields.
- Frost will kill the vines.



Cold Area (Heavy Frost)

(The pink shading on the map)

- Plant only in October and November
- Otherwise the season is too short and yields are low.



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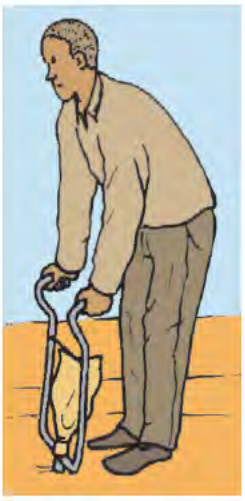
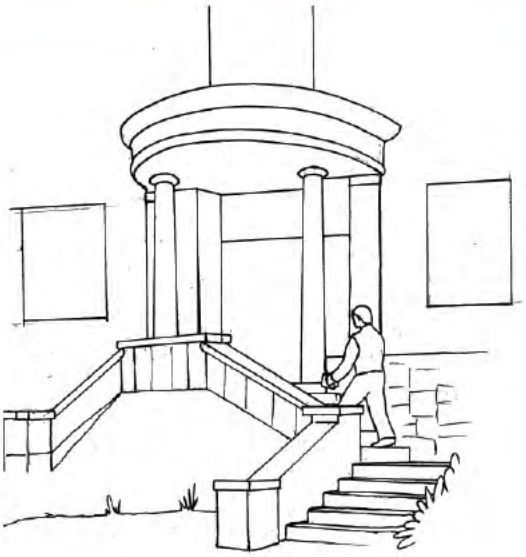
SOIL SAMPLING

1. Take a soil sample at least 2 to 4 months before planting.

2. Consult your local extension officer for help.



3. Submit your sample to Cedara after filling in the form as required.



4. Ask your extension officer to interpret the results of the soil test. Get the fertilizer indicated by your soil analysis results.

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LAND PREPARATION

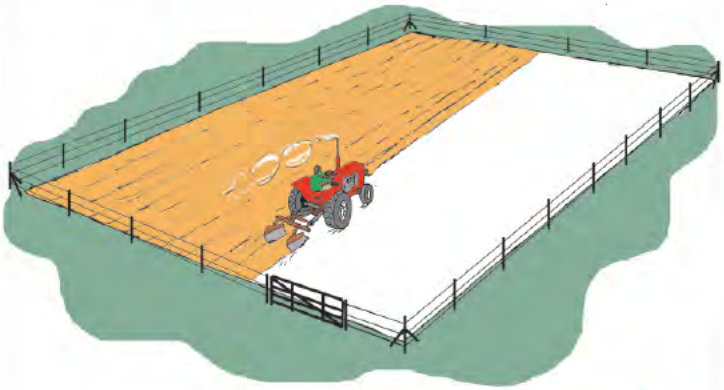
Soil selection

- Best soils are light, sandy loams

- Heavy clay soils cause mis-shapen roots and rotting.

Compost and Manures

- Apply and incorporate four to six weeks before planting.

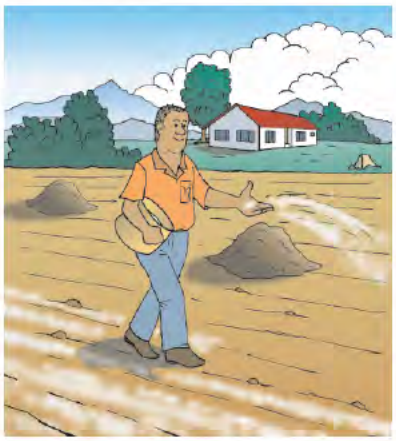


Lime

- If lime is needed, broadcast and incorporate at least four weeks before planting.

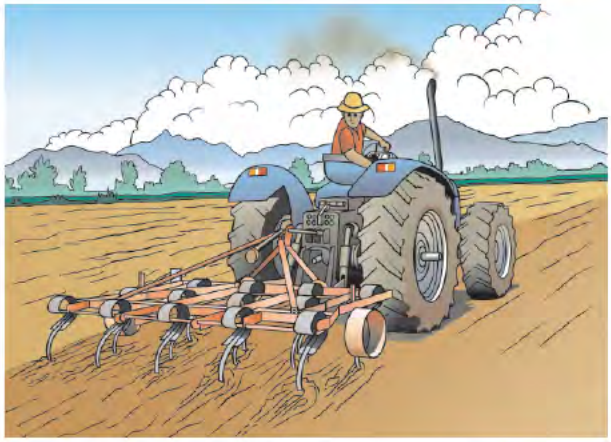
Fertilizer

- Before planting, broadcast fertilizer according to soil test recommendations.
- Apply half the N at planting.
- Apply remainder as 1 or 2 side dressings.



Tillage

- Loosen the soil using a fork, plough or disc.
- To incorporate the fertilizer and prepare the soil for ridging and planting.



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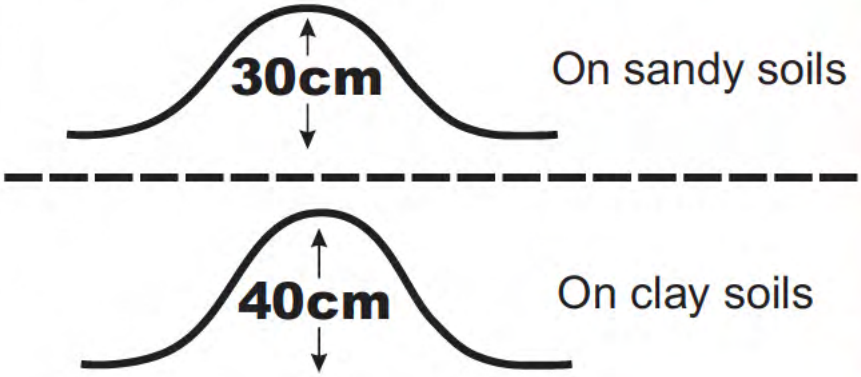
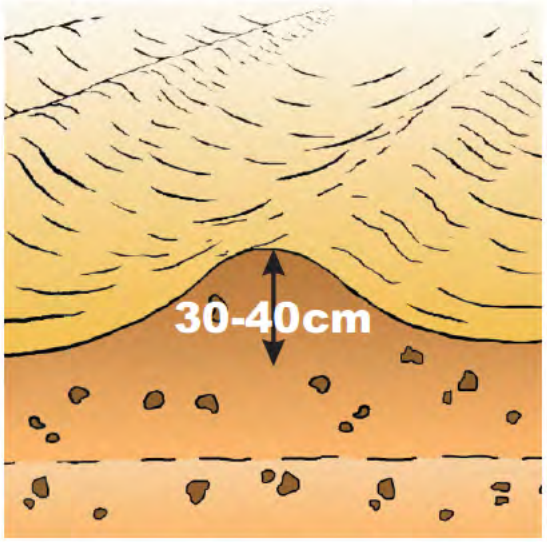
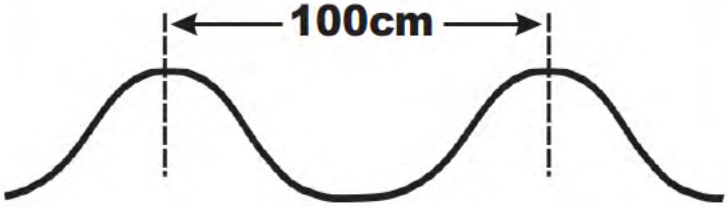
SPACING AND RIDGING

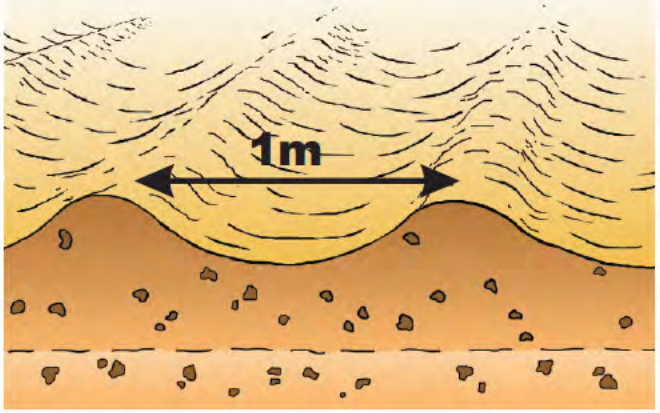
- Plant on top of ridges for better root growth and ease of harvesting.
- Ridges must be 30 to 40cm high.
- In heavy clay soils, ridges should be higher for better drainage.





The ridges are made 100cm (1m) apart.





Ridging can be done by hand, or mechanically using a potato ridger.

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8 SELECTING PLANTING MATERIAL

Sweet potatoes are grown from **vine cuttings,** or **rooted slips** grown in seedling trays and planted like ordinary seedlings.

- Use clean, disease-free planting material from healthy vines .
- Or rooted slips bought from a nursery.

DO NOT USE INFECTED MATERIAL!

- Do not re-use old vines. These can be infected with viruses that cause low yields.
- Symptoms of viruses are mottled, misshapen leaves and stunted growth.
- Viral diseases are spread by infected plant material.
- Destroy.

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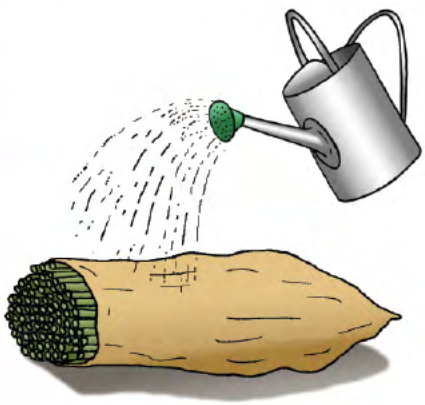
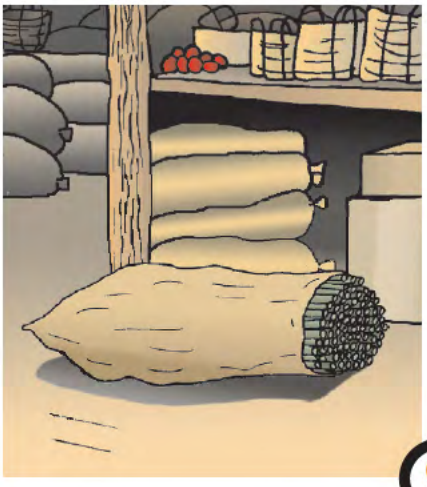
9 PREPARING VINES FOR PLANTING

Cut the whole vine into lengths of approximately 30cm.

Remove lower leaves before planting.

To store or transport, they must be kept cool and damp. Pack vines in woven sacks or mesh bags.





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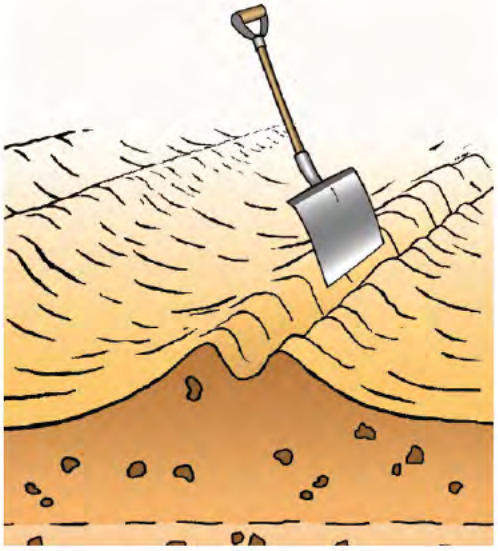
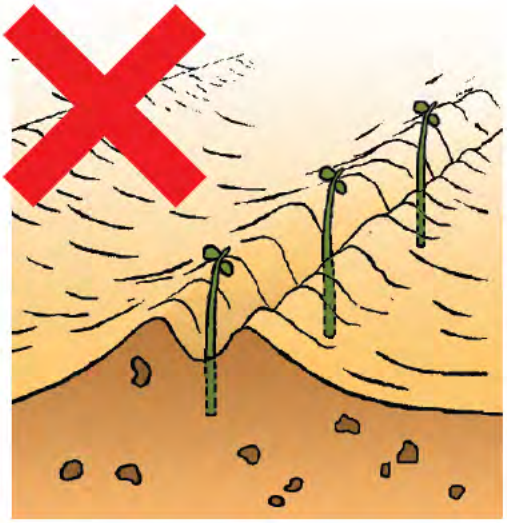
PLANTING VINES

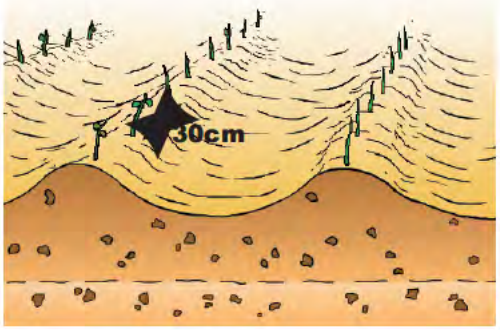
Plant vines on top of the ridge.

- Open a shallow furrow on top of the ridge.
- Lay vines flat in the furrow.
- Leave the last two buds above the top of the ridge.
- Close the furrow firmly, covering the vine with 3 to 5cm of soil.
- Plant vines 30cm apart.





The roots will be more evenly spaced and regular in shape.



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WEED CONTROL

Small-scale Production

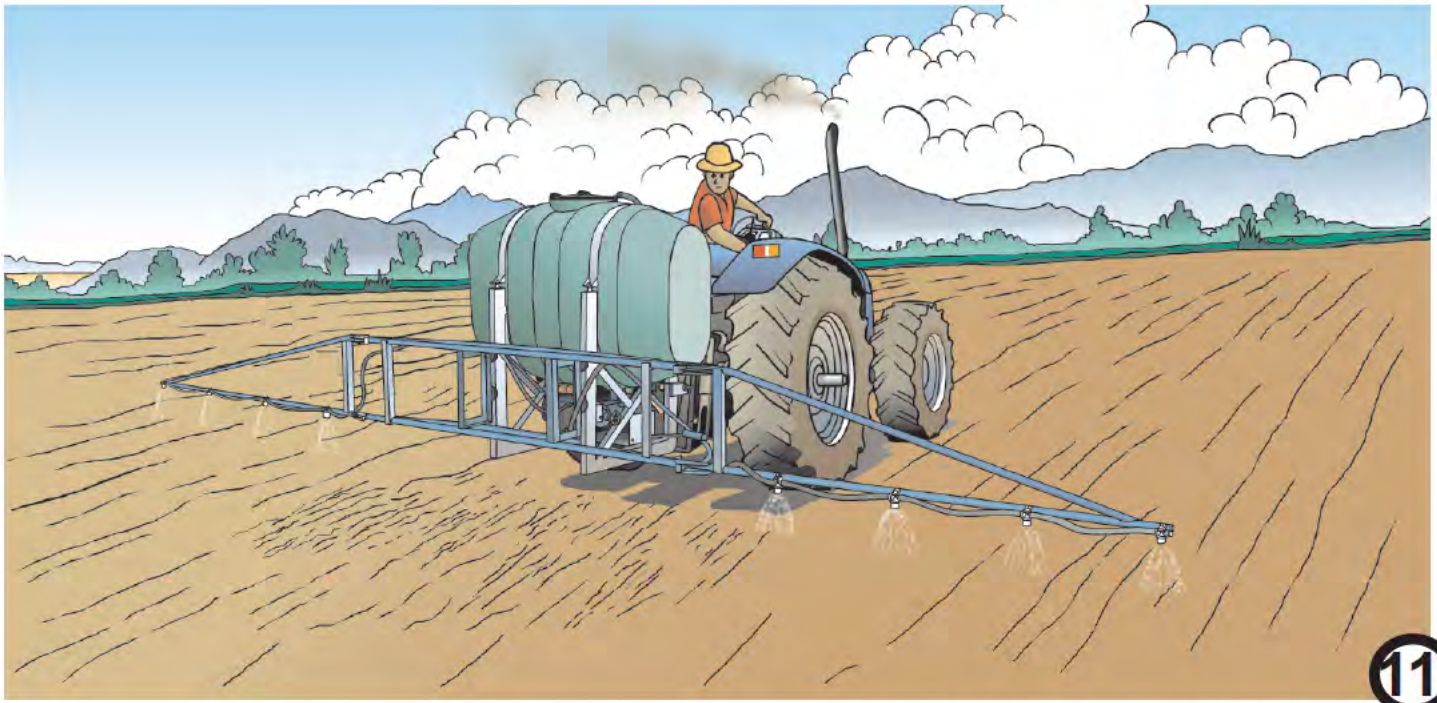
Sweet potatoes grow quickly and soon cover the soil, so weed control is not critical. Hand weeding will be adequate in the first two to three weeks after planting.

Commercial Production

Two herbicides are available for sweet potato production:

- EPTC/EPTAM - effective against nut grass and some annual grasses, and -
- LINURON/LINEX for broad-leaf weeds.

Specialist advice is required on how to use these herbicides.



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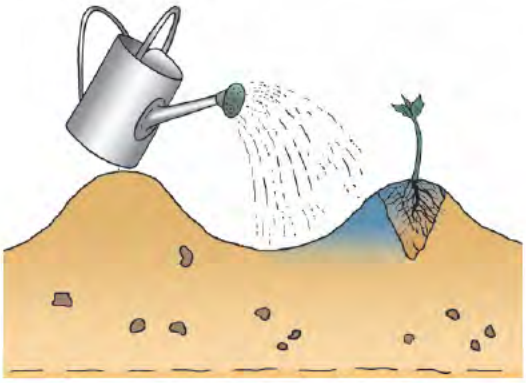
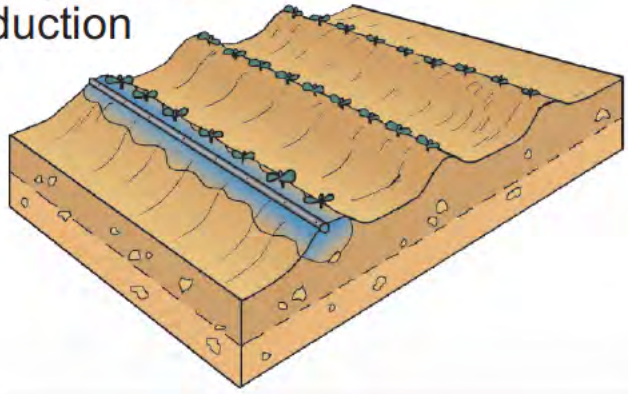
WATER REQUIREMENTS

Sweet potatoes are relatively drought tolerant, but need at least 400mm of water during the growing season for optimum yields. Provided there is sufficient rainfall, sweet potatoes can be grown without supplemental irrigation in KwaZulu-Natal.

Under dry conditions water immediately after planting.



Drip irrigation is the most efficient method of irrigation as It does not destroy the ridge. It is impractical for large scale production



Sprinklers are the most commonly used form of irrigation.

<u>STOP</u> irrigation 2 weeks before harvest to prevent root rot.

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HARVESTING

If left in the soil, the roots will continue to grow while conditions are suitable. Harvest the roots only when they are big enough. Dig up one or two plants to check root size.

- In cool areas, frost will kill vines so the roots will stop growing and can be stored in the soil over winter.
- In cold areas frost will kill roots as well and therefore **must** be lifted.

Cut the vines off to aid harvesting and use healthy vines that have not been frosted:

- to make new cuttings, or
- as IMIFINO or
- as animal feed.

Lift only when the soil is dry.

- Use a garden fork to lift the roots.
- Avoid damaging roots since this can cause rotting.

Yields

Expect yields of between 1 and 2kg/vine (20 - 40tons/ha).

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CURING AND STORAGE

Roots can be cured during warm, dry weather by leaving them in heaps covered with vines in the field. This dries out any cuts from harvesting, and the roots will store longer.

Do not leave roots in the field if it is raining or very cold.

After curing for 10 days, store in a cool dry place.

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15 GROWING VINES FROM ROOTS

If vines are not available, vines for planting can be grown from roots.

These roots can be from:
- the previous crop that was lifted and stored.
- unharvested roots left in the ground.
- roots bought from the store.

In areas with light frost, roots will sprout and produce new vines in spring after the last frost. In frost free areas, roots can be planted all year.

Harvested roots must be planted close together in seed beds or furrows.

Cover with 5cm of soil and keep moist.

Roots will sprout and produce vines which can then be cut for planting.

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