

- If it is very hot (above 32 degrees Centigrade) and dry, erect a shade over the new vine multiplication bed (remove shade when the first leaves start developing).
- Keep the nursery weed free, especially during the first 5 weeks of growth.
- Cover exposed underground stems with soil, once the crop has covered the ground, weeding may be limited only to hand weeding.
- Remove and destroy all mixtures (off-types) and plants that show signs of viral or other disease to prevent spread of the disease.
- It is important to change the sweetpotato nursery sites at least every two years to avoid build up of pests and diseases.

Harvesting the vines

- After 6-8 weeks (depending on growing conditions and the use of fertilizer), each plant should generate another 15 plants.
- Harvest the top portion (25-35 cm long and 10cm above the soil) and leave the lateral branches on the lower portion to grow. This helps the plant to recover quickly.
- Two additional cuttings can be made each 6-8 weeks apart. Adding urea (40-0-0) at 13 grams per square metre after each cutting will stimulate re-growth.
- If you are selling your vines, make sure that they are correctly labeled with the name of the variety and your name as the farmer multiplier.

Storage of vines

- Sometimes because of lack of rain or other reasons, it is not possible to plant vines immediately. Vine cuttings can be stored for up to seven days if well kept in the right conditions.
- First, find a cool, shady place for keeping the vines.
- Second, remove most of the leaves on the cuttings leaving only a few at the tip.

Then there are two options:

- Cuttings should be tied in bundles with their bases covered with a wet cloth or sack (Figure 4) or,
- Partially bury in a narrow trench under the shade of a tree with the vines spread out along the trench, have two-thirds of each vine under the soil surface

Always make sure that there is sufficient moisture during the storage period. Roots may develop at the base of the cuttings; therefore, they should be carefully planted with the roots.

Packaging and transportation

Careful packaging and transportation is necessary to avoid the following:

- overheating of the vines.
- vines drying out.
- vines of different varieties getting mixed.

Therefore:

- Use jute sacks where possible and not plastic sacks to allow better air movement.
- Do not overfill the sacks.
- Do not stack too many sacks on top of each other.
- Cover the bed of the lorry to avoid the vines drying out.
- Label the different varieties and pack each variety in separate sacks.



Figure 4:
Storage of cuttings in bundles with base covered with a wet cloth.

Healthy
vines

Healthy
crops

Healthy
roots & vines

For more information:

Please contact your nearest
Kenya Agricultural Research Institute (KARI) Centre,
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Rich in Energy & Natural Vitamin A!



QUALITY
Sweetpotato Vine
Multiplication

Healthy Vines for Healthy Plants for High Production

Farmers should have adequate healthy vines for planting at the beginning of the rains; in this way, they can double the amount of sweetpotato roots produced per hectare. This pamphlet is a guide to the selection and multiplication of disease-free planting material for farmers' own use or sale.

Requirements for suitable multiplication sites

- Have easy-to-work, fertile and well-drained soils.
- Be located at least 100 meters away from previous sweetpotato fields to avoid spread of pests and diseases.
- Be near a water source that does not receive water from other fields previously used for sweetpotato production.
- Be protected from livestock.
- Have easy access for those who want to purchase vines.

Nursery bed preparation

- Prepare nursery beds at least 2 weeks before planting.
- The beds should be 1 - 2m wide and at least 20 cm high to allow easy working of the centre while standing in the furrow (the length of the bed depends on the amount of planting material available).
- Apply carbofuran (if available) at the rate of 5 grams per square metre to kill any soil borne pests and diseases .
- Mix in decomposed manure (do not use fresh manure), at a rate of one full wheel-barrow per square meter or use a fertilizer like NPK (17-17-17) at 25 grams per square meter or Urea (46-0-0) at 13 grams per square meter.
- Loosen the soil, mix the compost manure or fertilizer and work the soil to break down large clumps.

Selection of multiplication material

This is the most important step in the whole process:

- Select healthy, vigorous vines from young plants, 2-3 months old (Figure 1).
- Avoid using stunted plants and vines that show symptoms of viral infection (Figure 2).
- Tender and semi-mature parts are best for planting as they sprout better than the older parts.

- To avoid transmitting diseases that you cannot see, first sterilize the sharp knife or blade that you will use to cut the vines by holding it in a flame or dipping it in an insecticide solution.
- The cut should be clean and slanted so that water can slide off and not sit on the wound, cut the top 25-35 cm part of the vine to include at least 3 nodes (Figure 1).
- Avoid the portion of the vine near the base of the plant and older vines from plants at harvest time as they are much more likely to be infested with sweetpotato weevil.

Preparation and planting of vines

- Plant spacing for vine production should be closer than for root production.
- Spacing for multiplication (between plants) should be 20 cm x 20 cm, or 10 cm x 20 cm depending on availability of planting material (Figure 3).
- Each 30 cm cutting may be cut into pieces each of which must have at least three nodes.



Figure 1:
Vine cuttings used for planting, note the nodes.

- One kilogram of sweetpotato vines provides 100-120 cuttings each 15 cm long, this is enough for a one square meter nursery bed when using 10 cm x 20 cm spacing.
- Before planting, dip the cuttings in a solution of the insecticide carbofuran (0.05%) for 20 minutes, if an insecticide is not available, dip the vines in a solution of water and ash (one-half cup ash in 5 liters of



Figure 2:
Stunted plants (left) and vines that show virus symptoms (inset) should be avoided.

water) for 5 minutes to kill those diseases and pests that cannot be seen with the naked eye.

- Two-thirds of the cutting (two nodes) should be planted beneath the surface of the soil in a slanted position.
- After planting, apply NPK (17-17-17) at the rate of 42 grams per square metre (**Note:** the fertilizer rates may need to be adjusted depending on existing levels of soil fertility and local experience).
- Closely spaced vines require more care and attention when watering and during fertilizer application.

Nursery management

- Each plot should be labeled with the name of the variety and date of planting.
- The nursery should be watered early morning and late afternoon with just enough water (avoid water logging) for 2 weeks and thereafter as needed depending on the rains.



Figure 3:
Layout of nursery bed using 10 cm x 20 cm spacing.