

Growing Improved Sweet Potato at Home

A Simple Guide to Get You Started

by Laura Karanja, PhD

“In spite of its name, it is not related to the potato. Unlike the potato – which is a tuber, or thickened stem – the sweet potato is a storage root. Despite a physical similarity, yams are not related either.”

- [Sweet Potato Facts and Figures](#)

Author's Note



Hi, My name is Laura. I'm a Plant Breeder and Virologist.

With over 30 years of training and assistance from farmers, I'm privileged to have gained first hand farming knowledge of the amazing yet affordable sweet potato.

I wish to share with you my knowledge of:

- ◉ The best production regions for different varieties
- ◉ Environmental requirements for planting the crops
- ◉ Planting, growth and management
- ◉ Pest and disease control
- ◉ Harvesting and post harvest handling

Through the farmers' cooperation, I along with my colleagues, develop nutrient-dense improved sweet potatoes that are currently available in orange, yellow, white and purple varieties.

My hope is for the information here to assist your journey in the growth, maintenance and harvesting of the improved sweet potato.

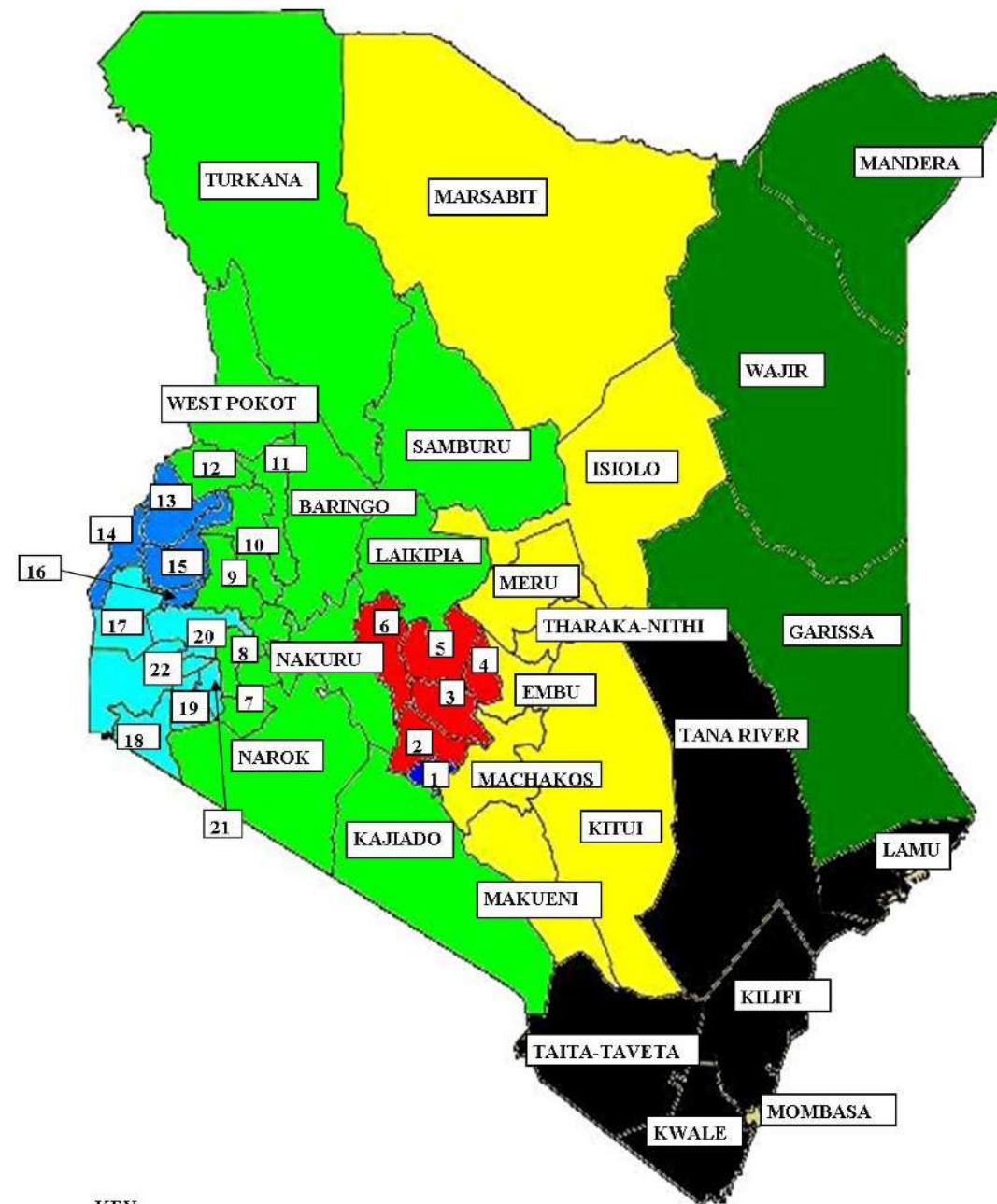
If you encounter any issues, feel free to reach out to me and I will try to see the best way to assist you.

Best wishes,

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COUNTIES OF KENYA



Production regions

In Kenya, orange fleshed sweet potatoes are grown mainly in the highland regions of Western, Nyanza, Central, Eastern and South Rift and Coastal Region.

Improved Varieties

Orange fleshed	Common varieties Kenspot 3 Kenspot 4, Kenspot 5, Kabode and Vitaa	
Yellow fleshed	Common varieties Kenspot 1, Bungoma, and Kemb 10	
White fleshed	Common varieties Ex-Simba, Kemb 20, Kemb 36, Mugande, Muibai, KSP 20, and Kenspot 2	
Purple fleshed	Common varieties KC Sweet Purple, Stoke Purple, Okinawan, Murasaki and Charleston	

Climate and Soil Requirements



- Altitude: From 1450-1650 for medium altitude and 1700 -2300 m.a.s.l (Metres Above Sea Level) for high altitude depending on the area
- Rainfall: 750 - 1000 mm per year
- Temperature: Average temperature of 24°C
- Soils: Grow best in moderately fertile sandy loams and does poorly in clay soils. Some varieties are drought resistant they can do well in poor soils but intolerant to water-logging since this cause rotting and reduced growth of the sweet potato.

Sweet Potato Growth and Management

Site

- Do not plant sweet potato where it's been grown in the past two years.
- But if you've had an old crop of sweet potato your site for the newly established crop should be at least 100 m away.
- If the land is small, clear the old sweet potato. The field should be completely cleared of old storage roots and vines.

Land preparation

- Prepare your site two weeks in advance before planting.
- Remove any shrubs and stumps from your site. Plough the land when it's dry to reduce the growth of weeds.
- Deep plough allows for easy penetration and to expand the roots of the crop.
- Ridges or mounds should be made before planting.



Sweet Potato Growth and Management

Prepare the planting material

- Select planting vines that's 'clean', and healthy, disease and pest free from two to three months old plants.
- It's recommended you plant the tip (apical) part of the vine.
- Remove leaves from cuttings to reduce the loss of water.
- Store vines for one to two days in humid conditions to enable rooting at the nodes before planting.
- Vines that have developed roots need to be planted carefully to minimize damage.

Spacing

Plant 3 vines per mound with some space between the vines.

If you use 3 cuttings per mound you require 30,000 cuttings per hectare. Spacing of 1 m x 1 m between mounds is recommended.

On ridges you require 33,333 cuttings to plant a hectare at a spacing of 30 cm between plants and 1 m between ridges.



Sweet Potato Growth and Management

Watering

- Water before ploughing especially in difficult soils like virgin or new lands.
- This ensures the fields are wet enough to make ploughing easier.
- Too much water causes water-logging which eliminates air from the gaps in the soil and can damage the sweet potato roots.
- Thus the soil moisture should be wet to the touch but fully drained.
- For quality and high yields keep the soils evenly moist with one inch of water provided once a week.



Sweet Potato Growth and Management

Fertilizer and Manure

- Two weeks before planting the crop you can use a herbicide like Glyphosate to control perennial weeds for your commercial crop.
- Add composted manure to the soil after ploughing. Unlike fresh manure, it decreases potential disease and any damage to the crop.
- Apply 10 - 15kg of composted manure for every 30 square meters of land.
- Normally, in nutrient rich soils, sweet potato does not require fertiliser application after planting.
- But in extremely poor soils, you may apply compound fertilizer such as NPK 17:17:17 at a 100 Kg per Ha twice, one at planting and the other 2 weeks after planting.



Steps to planting

- Plant vines 25-30 cm in length for the crop to develop better and minimize wastage of planting material.
- Vine cuttings shorter than 25 cm give lower yields.
- Store vines for one to two days in humid conditions to promote rooting at the nodes. Longer storage will affect growth.
- The fields should be ready before cutting the vines to ensure planting within 2–3 days after cutting. This minimises the risk of deterioration from the planting material.
- Strip leaves from the lower portions of the vines, bundle the vines, wrap them in a wet cloth or sack and keep in a cool, shady place away from wind.
- Carefully plant vines which have developed roots to minimize damage.

Planting on ridges: Ridges are made 1.0 m apart from the centre of one ridge to the next. When vines are planted on single rows at the middle of the ridge at 30 cm between plants they may give optimum root yields.

Planting on mounds: Three vine cuttings are planted singly in a triangular pattern below the tip of each mound at equal distance on the mound of 100 cm wide and 60 cm high.

With more than one variety, grow each on a separate ridge so it's easier to record the results separately.

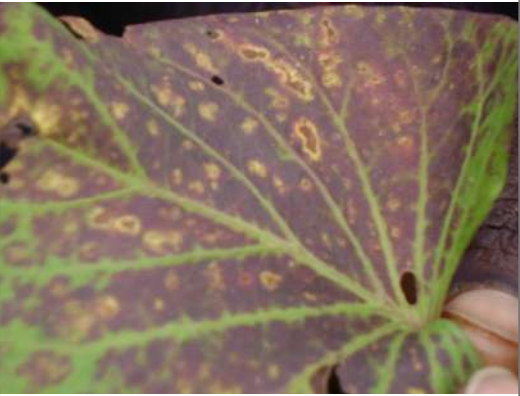
Yields

- Good annual yields depends on favourable growth conditions; management and planting the right variety.
- Meaning with a one acre farm you can get average yields of between 60 to 100 bags.
- Most sweet potato varieties are ready for harvest 4 - 5 months after planting. Longer growing periods that extend to 6 - 7 months will affect the size, taste and appearance of the roots.
- In truly unfavourable growth conditions you'll get lignified pencil roots. These are thin, elongated roots also called pencil roots.



Major Diseases and Pests Control

Type	Description	Control	
Sweet Potato Weevil	• Are beetles with a long pointed snout, a slender body resembling ants with a length between 6 - 8mm. • They are three major ones distinguishable by the colour and size. • The weevils complete their lifecycle in the storage roots (tubers). Adult weevils feed on the vines, leaves, and the underground storage roots of sweet potatoes.	○ Proper control measures are used to prevent the weevils from infecting the vines. ○ Treat planting material by dipping into a solution of half cup of ash into five litres of water for five minutes ○ Incorporate a good amount of fresh <i>lantana camara</i> leaves before planting to improve the organic soil matter and repel the weevils ○ Plant tolerant varieties like Kenspot 1 and Kenspot 4	
Sweet Potato Erinose (hairiness)	• Your sweet potato field infested with mites may result into the vines reacting and forming hairiness. • Leaves and vines are covered with a dense layer of white hairs which provide protection for the mites. • These affected leaves and plants are slightly stunted, thickened, and the yield poorly.	○ Remove and destroy (burn) affected vines to reduce the mites effect ○ Spray miticide to control the mites ○ Remove and destroys the hairy vine tips to allows rapid re-growth of un-infested shoot	

Type	Description	Control	
Sweet Potato Virus	Sweet potato viruses are spread by aphids, white flies and planting infected vines. The main symptoms include: • Dwarfing of plant • Yellowing of vines and young leaves • Sweet potato vines producing a lot of side branches	• Plant resistant or disease tolerant varieties like Kenspot 1, Kenspot 3 and Kenspot 4 or disease free planting material. • Control the white flies and aphids using wasps and beetles • Remove infected plants from your sweet potato field as soon as you spot the aphids or whiteflies	
Alternaria leaf spot	• It is the most important fungal disease in East Africa and can causes total loss of vines. • There are blackened lesions on the stems and leaves. Leaves become shrivelled, blackened, die and fall off in severe cases.	○ Use resistant or disease tolerant varieties of sweet potato such as Kenspot 1, 2, 4 and 5 varieties ○ Destroy or burn infected crop material and replace with clean planting material ○ Practice crop rotation with maize and beans type of crops	
Rodents: (Moles, field rats, squirrels)	Signs of rodents' infestation are small mounds of freshly dug soil, sweetpotato vines being pulled back down into the soil, holes in the sides of ridges or mounds • They dig through the ridges and mounds to feed on the roots. • Rodents spoil more roots than they actually eat lowering your yields.	○ Keep the field and surrounding areas free of vegetation and rubbish to reduce rodent populations. ○ Dig a deep ditch around the field destroying rodent burrows to deter them from digging tunnels straight into the fields. ○ Mix cow dung and pepper and place it in the tunnels, and then burn it to smoke the rodents out.	

It is advisable to rotate sweet potato with other crops, or to have one or more vegetative cycle period without planting crops. It reduces the build-up of diseases and viruses.

Post Harvest Handling

Harvesting

Most sweet potato varieties require a growth season of 4.5 to 5 months with some early maturing varieties like Kemb 10 taking 3 - 4.5 months. And some take as long as 8 months.

Piecemeal harvesting can help with better pest management. It's an option for harvesting the root over a period of months.

Its advantage is you can check the field for cracks or exposed roots and fill cracks and replace the soil over any protruding roots that are not harvested.

Storage

Sweet potato is highly perishable and once harvested can be kept for only 4 - 5 days.

But there are several ways to maintain its freshness for longer periods of time up to 3 months but depends on the variety.

The method of storing depends on its duration which in most cases is dictated by market access, market prices, and even weather conditions.

To store the sweet potato root successfully you should:

- Select only top quality roots without any signs of poor postharvest handling, pest or disease damage
- Have specially designed stores with the right conditions to preserve the freshness
- Check the stores regularly to prevent degenerating and manage pests and environmental conditions.



We sell vines!

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using the contacts below.

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