

Sweet Potato Production Kenya

Sweet potato is an important root crop in the north Rift Valley. It provides food in April and May when there is little other food, and can provide vines for animal feed.

VARIETIES

There are many varieties of sweet potato.

In lower altitude areas like Aror and Ortum, farmers of Marakwet, West Pokot Districts and KARI scientists found that KSP20 and Sandak varieties do well when planted as a single crop.

In medium altitude areas like Kitale where sweet potato is intercropped with maize, Sandak variety is recommended. KSP20 also does well as a monocrop in this region.

Kembl0 and KSP20 produce the best vines, especially where farmers look after the crop well.

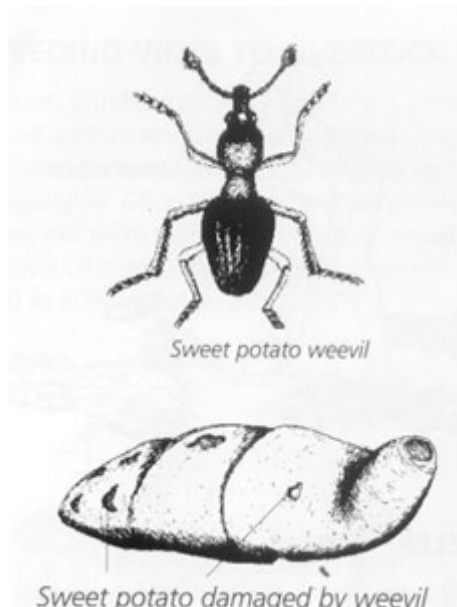


HOW TO PLANT

For sole cropping, prepare the land immediately after the first rains. For intercropping with maize, prepare the land after harvesting beans. Use a jembe to loosen the soil to at least six inches deep and remove all the weeds. Avoid stony soils because they limit tuber expansion. In drier areas, plant when the top 6 inches of soil is wet. In high rainfall areas like Kitale you can plant when the top 3 inches is wet. Cut the vines into 1-2 feet pieces and bury 2/3 in the wet soil. The leaves should point upwards.

You can plant the vines on the flat ground at 2-3 ft by 1-2 ft spacing or on ridges or mounds of soil at 2-4 ft by 1-2 ft. The mounds or ridges should be between 6 to 18' high. Spacing is not very critical as far as yield is concerned.

Correct spacing for mounds and vines



WEEDING

Keep the land free from weeds until the crop covers the ground. The first weeding should be done 3 weeks after planting. Remove occasional weeds by hand after the crop covers the ground.

FERTILIZERS

Very few farmers apply fertilizers on sweet potato. If the soil is very poor, apply 40 to 200 'debes' per acre of farmyard manure or 1/2 bag of DAR. If your major interest is vine production, apply 1/2 bag of DAP per acre.

PESTS

The most important pest of the crop is the sweet potato weevil. Plant sweet potato only on land where the crop has not been grown in the past 2 years. Earth up the soil around the crop every 4 to 6 weeks in order to control weevil build up.

HARVESTING

You can harvest KSP20 and Sandak varieties after 3 1/2 months in the low, hot areas like Arror and Sigor and after 4 months in the cooler higher areas like Kitale. You can harvest the tubers at once or you can leave some in the ground for up to 4 months until you need them. Locate the large tubers by cracks in the ground. Loosen the soil around the tuber with a sharp tool like a fork and lift the tuber from the ground. Use a jembe if you want to harvest the whole plot at once.

YIELD

KSP20 and Sandak can produce 6 to 20 t per acre (18,000 - 60,000 tubers). Kembl 0 can produce 6 to 15 t of tubers and 12 to 20 t of vines per acre. Farmers in Arror, Sigor and Kitale areas found that for every shilling spent on labour to plant, weed, earth up and harvest, they could get 7 to 13 shillings profit (1997 prices).

FEEDING VINES TO LIVESTOCK

Sweet potato vines are a good dairy animal feed supplement because they have a high protein content (10 to 15%) and are easily digestible. Chop the vines in small pieces and mix them with Napier grass or maize stover. The mixture should have between 20 to 50% sweet potato vines.

Promising Sweet Potato Varieties In Western Kenya

Where developed and Institutions involved

There are five sweet potato varieties that have shown outstanding yields beyond the local varieties within Kisii regional mandate in the major sweet potato growing areas. These are: -

Kemb 10	Embu selection KARI
Kemb 23	Embu selection KARI
SPK 013	Kakamega selection KARI
SPK 004	Kakamega selection KARI
Japanese 420009 pumpkin	CIP selection

These varieties have been developed through collaborative research breeding between KARI and International Potato Center (CIP) under the national performance trials.

Adaptation

Sweet potatoes are adaptable to different agro ecological zones ranging from 0-2100m above sea level and occasionally are found in altitudes of about 2400m. They thrive at temperatures above 24°C in abundant sunshine. They require rainfall of 750-1000mm per annum and will need a moderate soil pH of 6.0 for optimum production. They also require well drained, free soil to allow root development.

Sweet potatoes have a growing period of 3-6 months depending on the variety. However in the short rains farmers prefer those maturing in 3 months and in the long rains those maturing in 6 months.

Land should be prepared to loosen the soils to make mounds of 80x30cm and 1-3 vines planted per mound or on ridges of 90-1500m by 30-60cm along the ridges.

Establishment

Vines are used for establishment. The shoot vines should be cut 30cm from the growing point before planting.

Cropping systems.

Sweet potato can be relay cropped with maize i.e. when maize has reached physiological maturity, about one month to harvest, mounds/ridges can be made within the rows of maize at 30-60cm apart and the vines planted.

Diseases and pests

The potato mosaic disease caused by a virus is the most common sweet potato disease. It is controlled by using clean planting materials, resistant cultivars, removal and burning of infected plants in the field. In addition chemicals such as 0.1% Carbaryl, 0.1% Tenthion and 1% Heptachlor can be used for disease control. The pests include sweet potato weevils that attack the tubers. The pest is managed by planting resistant varieties, earthing up, using deep rooting varieties, timely harvesting, crop rotation and proper storage.

Maturity, harvesting and storage

Sweet potatoes mature after 3-6 months depending on the varieties. Yellowing and drying of leaves is mostly an indication of maturity. Harvesting can be done by piece meal using sharpened sticks or metal rods or matches. Removal of all the tubers at once is also undertaken using hoes. Care should be taken to avoid damaging the tubers (wounding) during harvesting. Usually sweet potatoes are stored in the field although after harvesting the tuber should be used. Curing can also be done to promote healing of wounds inflicted during harvesting. Tubers are cured by subjecting them to temperatures of 27-29.5°C and relative humidity of 85-90% for 4-7 days and then storing them at 13-16°C and relative humidity of 85-90%. In rural areas, they can be stored in underground pits or platforms, covered with soil.

Potential yields

In Kenya, fresh tuber yields can get to 13 tons per ha.

Utilisation

In Kenya, sweet potatoes are consumed by boiling, baking, frying or roasting the unprocessed tubers and vines. Tubers and vines are also fed to livestock. Vines can be ensiled. Industrially starch can be extracted from tubers.

Seed availability

High yielding vines (seed) can be obtained at KARI RRC-Kisii which has a multiplication nursery. Farmers in Kabondo, Ndhiwa have also started multiplying seed materials of the outstanding five varieties.

Market

Marketing of sweet potato tubers is very good in major producing areas like Kabondo, where some merchants come from as far as Mombasa, Nairobi and Nakuru. They contract the farmers and purchase their tubers at wholesale prices on the farm. There are also in other urban centers where sweet potatoes are used as substitute for bread.