

Roof Water Harvesting

Despite John's house being roofed with corrugated iron sheets, the gutters were worn out and the family harvested very little rain water. The family members had to walk very far to the nearest well to get water which they had to pay for.

The Shamba Shape Up team made the following improvements:

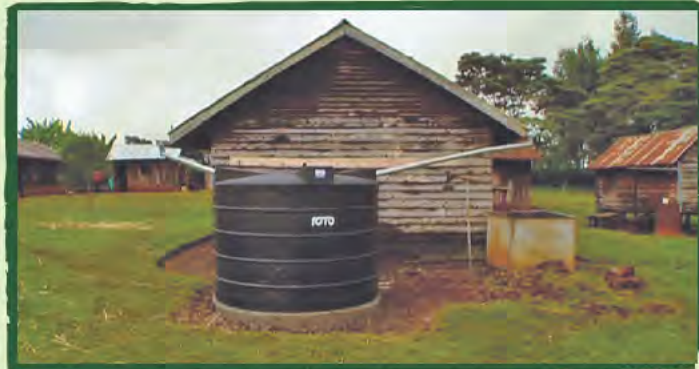
- Replaced the old gutters with new ones
- Constructed a platform to put a new water tank on
- Provided a 4,500 litre plastic water tank

This tank will help the family in several ways:

- More clean water means better health for all the family
- They will spend less time fetching water (time can be used for work on the shamba)
- They will save money that they used to spend on water
- They will be able to provide the dairy cows with enough water and therefore improve production
- They will be able to water the kitchen garden for vegetable growing.



Water tank on concrete base



Finished guttering and tank!



Shamba Shape Up Series 1: Episode 10

John Kinyanjui's Farm, - Njuki (Banana), Limuru

This leaflet contains information on making silage, cow sheds, tissue culture bananas, maize stem borer and water harvesting.

Making Silage

Silage is fermented fodder which you can store and feed to your cows during the dry season. It can be made from Napier grass, Sorghum, Maize stems or Sugar Cane tops.

What you need

- Chopped forage such as Napier grass
- Molasses
- Water
- Silage plastic bag

Chopping Napier Grass

Napier grass can be cut using a **Chaff Cutter**. This saves a lot of time chopping. It is a device that chops Napier grass into small pieces while you turn a handle.

John used to spend 4 hours chopping enough Napier grass to make enough feed for one day. With the chaff cutter this only took ½ hour!



Hand operated Chaff Cutter

How to make silage



1. Collect the Napier grass after it is chopped and put it onto a plastic sheet on the ground. Do this where you plan to store the bags as they will be heavy
2. Mix 1kg of molasses with 3kg of water in a watering can
3. Sprinkle the molasses-water mixture onto the cut Napier grass and mix well
4. Put the mixed Napier and molasses and water into a silage bag
5. Press down to make sure no air is left in the bag. If there is air, then it will not ferment well
6. Tie the top of the silage bag tightly with sisal twine
7. Put stones or rocks on the tied bag to ensure it is pressed down
8. Store somewhere dry and out of the sun
9. Ants, rats and birds will be attracted to the silage so check the bags often
10. It will be ready in 8 weeks but it can be stored for a lot longer and used to feed cows during the dry season.

Produced by Mediae



Watch us on citizen television on
Saturday 1.30 - 2.00pm (English)
Sunday 1.30 - 2.00pm (Kiswahili)



For another leaflet or
more information sms 5606



Tel: +254 0 20 7224450/62
enquiries@cabi.org



Tel: +254 20 8632726
ifdckenya@ifdc.org



Tel: +254 20 4180612/3
0722 209840 0734 440044
hr@coopers.co.ke
for more information,
SMS 'NUTRITION' or
'ANIMAL HEALTH' to 5606



Tel: +254 20 2712627/ 2718814/09
info@fsdkenya.org



Tel: +254 20 2301518/20, 3560102/3
info@kenchic.com



Tel: +254 020 6978000
information@unga.com



Tel: +254 020 3228000
syngenta.east_africa@syngenta.com
for more information,
SMS 'DISEASES' to 5606



Tel: +254 20 2106793, 703 896996
dlightafrica@dlightdesign.com
for more information,
SMS 'DLIGHT' to 5606

Cow Shed

John's cow shed needed a makeover!

The Shamba Shape Up team made the following changes:

1. It was made bigger to fit more cows
2. A new roof was added as the old roof was leaking
3. A sloping concrete floor was added to take water and slurry away from the pens
4. A trench was added to take slurry away
5. A covered wall at the back of the shed was made to protect the cows from the rain, sun and wind
6. A calf pen was made inside the covered area
7. A new feeding trough and water trough were added

Happy cows means more milk!



Before



After!

Tissue Culture Bananas

Tissue culture grows new bananas from a single shoot tip of a similar plant. This means the plant grows free of disease. The plants mature earlier and have bigger bunches. One such variety that has been made using tissue culture technology is **Cavendish**.

Spacing

Correct spacing is important for all crops. For Cavendish bananas holes should be made 60 cms deep (2ft), 60 cms wide (2ft), and 3 metres apart.



Planting seedling

- Remove top soil when digging hole
- Mix top soil with 2 deces of manure and 200gm of DAP or TSP fertiliser
- Spread 20gm of Nematicide such as Nematicur on the mixture
- Fill back the hole
- Add seedling in the centre of the hole
- Fill with soil
- Water



Intercropping

If you want to, you can add another crop such as sweet potato in between the banana seedlings. You need to make ridges 1 metre apart. Plant on top of the ridge. Sweet potatoes are very popular in the market and have lots of vitamin A in them.



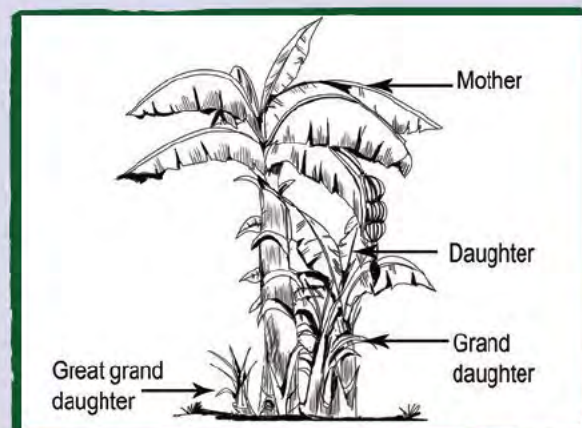
Stems

When banana plants grow, make sure you do not overcrowd them. There should be no more than 4 suckers per main plant.

Where to buy tissue culture bananas

There are many places where you can buy the new Cavendish variety, one place is JKUAT.

Jomo Kenyatta University of Agriculture and Technology,
P.O. Box 62,000 – 00200
NAIROBI, KENYA
Tel: +254-067-52711
Email: pro@jkuat.ac.ke



Maize Stemborer: Push-Pull method

The stemborer insect can do a lot of damage to your maize crop. They also attack other crops such as sorghum, millets and sugarcane. Adult moths lay eggs on the leaves and the larvae (worms) hatch and first feed on young leaves, but soon enter into stems. Damage caused by the stemborer could result into 20 – 40% less grain yields. Damaged stems need to be removed as the maize will stop growing.



Moth on Maize leaf



Maize stem damaged by stemborer

Traditional method of treating stemborer

Normal control of stemborer is done by chemicals. Insecticides are put into the funnel of the maize plant to kill the larvae.

Push-Pull method

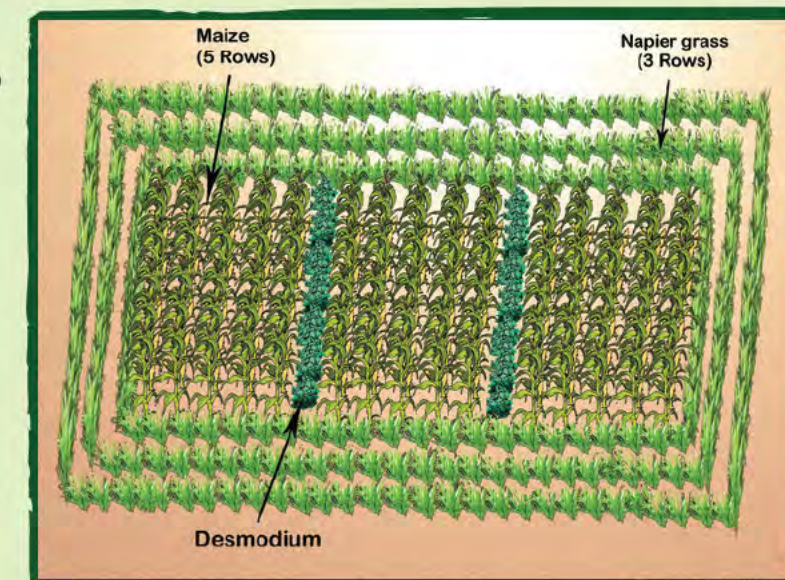
This is a simple and cheap method where farmers use **Napier grass** and **Desmodium legume** for the control of stemborer in maize fields.

Desmodium is planted between the rows of maize. It makes a smell that stemborer moths do not like. The smell **'pushes'** away the moths from the maize crop.

Napier grass is planted around the maize crop as a trap plant. Moths are attracted to Napier grass and it **'pulls'** the moths to lay eggs on it. Napier grass does not allow stemborer larvae to grow on it. When the eggs hatch and the small larvae bore into Napier grass stem, the plant produces a sticky substance like glue, which traps them and they die.

Layout

- Plant the Napier grass first. Planting must be completed before the rains. This allows the Napier to start growing before maize. At least three rows of Napier are planted all around the maize field.
- Desmodium is then planted in between the rows where maize will be planted. Plant a row of Desmodium after every 5 rows of maize.
- Desmodium should be planted with the rains. At 3 weeks and at 6 weeks after planting, trim the Desmodium so that it does not overgrow the maize.
- Napier grass and Desmodium are also good feed for cows and will improve milk yield.



Layout of planting Desmodium and Napier grass in maize field