



# Series 7, Episode 16

Gregory and Teresiah's Farm, Machakos, KENYA

*This leaflet contains information on: borehole water for irrigation, conservation agriculture, mangoes, jikos*

If undelivered, please return to The Mediae Company, PO Box 215-00502, Karen.

For more information, SMS "IRRIGATION" to 30606

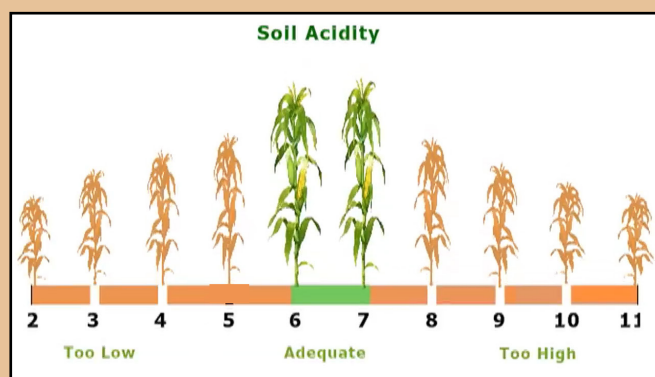
## Borehole Water

Borehole water for irrigation is often high in salts like **sulphates**. High sulphates in water make your soil more acidic (low pH). Your crops will not grow well.

Test both your soil and water every 2 years. It will tell you how salty your water and soil is. It will help you to choose which crops to plant.

**CropNuts** can come to your shamba to test your soil and water.

Your soil test results will tell you what to add to make your soil better. If your soil is too acidic, add lime. You can also use foliar feed fertilizers to assist your crop.



Maize grows best at pH 6-7. The lower the pH, the more acidic the soil, and your crop will not be good.

These crops **can grow** with salty water and soil:



Spinach



Cabbage



Sunflower

These crops **do not grow well** with salty water and soil:



Peas



Onions



Carrots

## Borehole water and your equipment



The sulphates in your borehole water will damage your pipes and driplines over time. They clog the holes in your driplines so that water cannot reach your crop. You may have to replace your driplines every 2 seasons. This is expensive.

**If you can, harvest rainwater. It is better to use rainwater than borehole water. You will save money and get a better crop.**



For more information, SMS “CONSERVATION AG” to 30606

## Conservation Agriculture

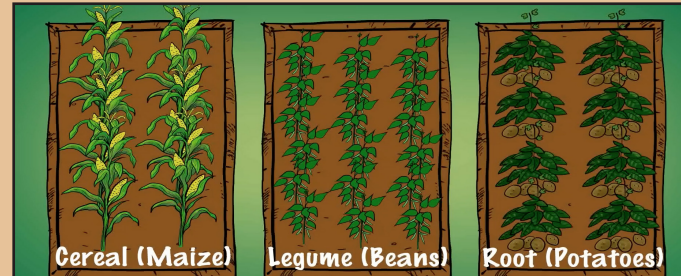
Conservation Agriculture is a way of farming that looks after the soil to give you a better crop. It is based on 3 principles:

### 1. Crop Associations

#### Crop Rotation

Do not plant crops from the same family in the same place for one season after another, instead follow a three season crop rotation.

e.g. plant maize, then cowpeas, then potatoes.



**Stem Borers** are pests that spoil cereals like maize. If you plant maize in the same place two seasons in a row, the stem borers will become more and spoil your second crop.

To prevent stem borers, plant cowpeas or another legume after maize. Then plant a root crop like potatoes. By the time you plant maize again there will be less risk of stem borers.

Maize, cowpeas and potatoes use different nutrients. If you plant the same crop two seasons in a row, the second crop will not be as good as there are less nutrients in the soil.

### 2. Minimum Tillage

Do not dig the soil or use a normal plough. It brings weeds to the surface and makes a **hard pan**. Only disturb the soil where you will plant the seeds.

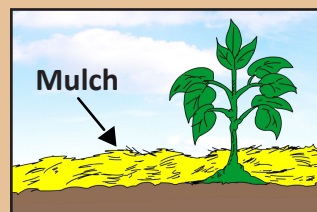
Use a **ripper**. This is a plough with a pointed hook. It cuts the soil where you will plant the seeds. The rest of the soil is left undisturbed.



### 3. Soil Cover

Keep the soil covered with either **mulch** or a **cover crop**. This will stop:

- water loss
- weeds
- pests and diseases
- soil being taken away by wind or rain
- soil getting too hot or too cold.



#### Intercropping

Plant two crops on the same plot at the same time, e.g. beans and maize.



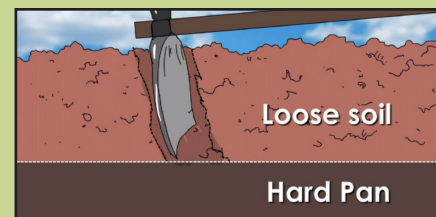
#### Beans

- Add **nitrogen** to the soil. Maize needs nitrogen to grow well.
- **Cover and protect** the soil between the lines of maize.
- Have roots that go deeper than maize roots. They **bring nutrients to the surface** for the maize to use.

#### Maize

Gives the bean plants **shade**.

Crops have different pests and diseases. It is harder for maize pests and diseases to spread through your crop when the rows are separated by beans.



If you dig to the same level over many years, you will get a **hard pan**. This is a hard layer of soil that roots and water cannot pass through.

#### Weeds

Shallow weed by hand or use a herbicide so that you do not disturb the soil.

You can spray a **pre-emergence herbicide** 48 hours after planting. Spray early morning or late evening.

For more information, SMS “MANGOES” to 30606

## Growing Mangoes

You cannot sell mangoes that have damage from pests and diseases. Many pests hide in the leaves under your mango trees. Keep this area clean to reduce pests.

### Mango Seed Weevils



#### How mango seed weevils attack your mangoes:

1. Adult mango seed weevils wait for mango trees to flower.
2. They climb up the trunk of the tree.
3. They lay their eggs on the small growing fruits.
4. The eggs hatch and the larvae burrow into the mango seed.
5. The larvae mature inside the mango seed and become adults.
6. The adults wait for the fruit to be ready, then leave the seed and eat the fruit.

You will not know that your mango has a mango seed weevil inside it until you cut it open. It will still look good on the outside. By the time you see a mango seed weevil, the damage has already been done.

Stop mango seed weevils and other insects, such as fruit flies, by spraying **Betafos**.

### Powdery Mildew



Powdery Mildew looks like a white powder on the buds on your mango tree. It is a fungus which gets inside the buds and stems. It can stop up to 80% of your mangoes from growing.



Stop powdery mildew from coming to your crop by spraying **Control**.

### Improve your mango crop

**EasyGro Flower and Fruit** is a foliar fertilizer. It will improve the colour, shape and taste of your mangoes, and increase your yield. You will get a better price at market.



### Application of Betafos, Control and EasyGro

You can apply fertilizer and stop mango seed weevils and powdery mildew at the same time.

Mix 20ml (4 teaspoons) **Betafos**, 10g (2 teaspoons) **Control** and 40g (4 teaspoons) **EasyGro** into 20L of water in a knapsack. Spray the leaves of your mango trees every 2 weeks.



*Always wear protective gear when spraying chemicals.*

## GeoPoll

The world’s largest real-time mobile survey platform, reaching a growing network of more than 8 million subscribers in Kenya. **GeoPoll** enables organisations to gather quick, accurate and in-depth data insights on anything from consumer preferences to social and development concerns.

For more information, SMS 70555



# Envirofit Jikos

The **Envirofit SuperSaver** jiko will save you time and money.

For more information, SMS "JIKO" to 30606

## Other benefits of Envirofit jikos:

- Gives 80% less smoke. Smoke is harmful to your eyes and lungs.
- They last for at least 5 years. There is a warranty for 2 years. This means that if your jiko has a problem within 2 years of you buying it, **Envirofit** will repair or replace it for free.

To buy your **Envirofit Super Saver** jiko, send the word "JIKO" to 30606.

| Normal Jiko                               | Super Saver                             |
|---|---|
| Uses 2 tins of charcoal per day at 120/-. | Uses 1 tin of charcoal per day at 60/-. |
| x 30 days in a month                      | x 30 days in a month                    |
| = 3,600/- per month.                      | = 1,800/- per month.                    |
|   | <b>A saving of 1,800/-!</b>             |



Easy to light. Burns well after only 5 minutes.



An iron top will last a long time. Grips on the top allows for pots of different sizes.



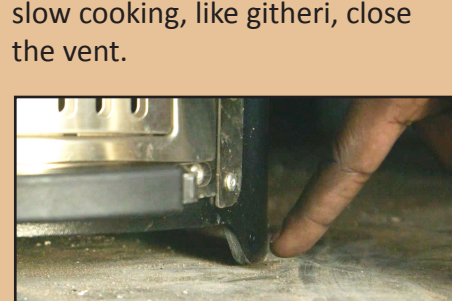
Adjustable vent controls air going into the jiko. For fast cooking, like boiling water, open the vent. For slow cooking, like githeri, close the vent.



Rubber handles let you carry the jiko when it is hot.



A removable ash tray makes it easier to empty the ash.



Rubber feet make it stable and safe.

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