

# Anthills

How to remove an anthill: You need to use a good quality termiticide such as 'Gladiator' which is the number one brand.



1. Pour water over the ant hill so the ants think it is raining
2. Leave overnight
3. Put on protective clothing. Rubber boots, gloves, face mask and overalls
4. Remove the top 2 feet of the anthill using a jembe
5. Mix 100ml of 'Gladiator' with 5 litres of hot water
6. Pour into the top of the anthill
7. Cover the hole up with the anthill mud
8. Within 1-2 months the ants should have gone

## Advantages of 'Gladiator'

- It does not travel across land very far (horizontal reach) so it will not spread into the soil or your water facilities
- It has a good vertical (downwards) reach so will go deep into the anthill and kill the queen
- It will last for more than 10 years.

# Agro-Chemicals

## How to make sure you don't buy fake products

- Buy chemicals from a certified supplier
- Look at the price and make sure it is the market price and not cheaper. Cheaper suggests it is fake
- Make sure you keep the receipt
- Check there is a batch number
- Check the expiry date
- Check there is a security mark on the product
- Check the seal on the lid is secure



Fake and real Gladiator products



Security mark

## Why it is important to check

A fake product means you don't know what is in it and it might be poison and do more harm to your crops!

It might be a useless product and not treat any diseases or pests which will then spread and get worse.

Get a real product the first time by following our tips!

# Shamba Shape Up Series 1: Episode 4

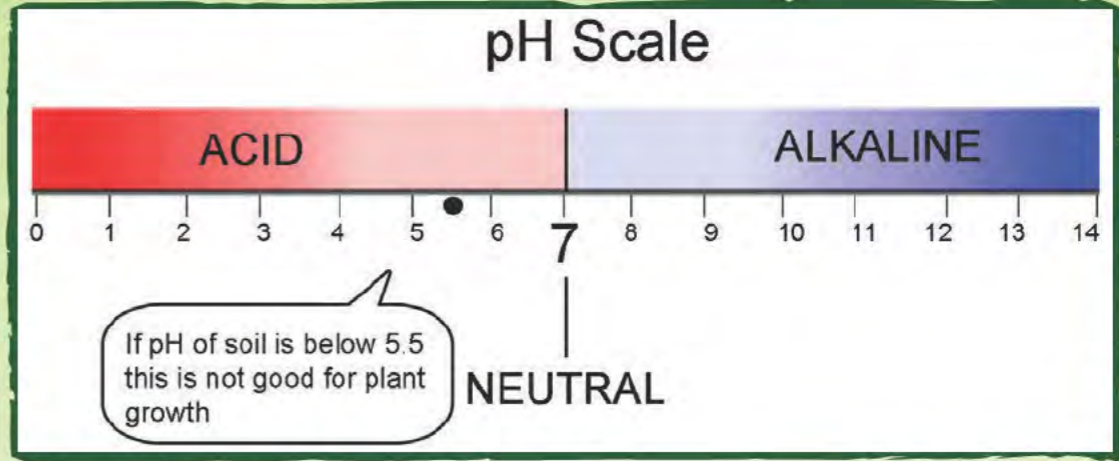
Arthur's Farm - Eshibeye, Kakamega



This leaflet contains information on soil fertility, banana plants, fruit pests, anthills and buying proper agro-chemicals

# Soil Fertility

Soil testing is knowing the health of your soil. Testing should be done every 5 years. Results of a test on Arthur's farm show that his soil had too much acid in it and not enough phosphorus. The level of acid in soil is measured by pH.



# Solution if soil is acidic

Lime increases the pH level of soil by bringing down acid levels. Lime also has calcium in it which helps plants grow.



10-15 bags of 50kg per acre



Repeated about every 2 years

1. Lime should be applied 6-8 weeks before planting
2. Spread lime over soil
3. 10-15 bags of 50kg are needed per acre
4. Work lime into the soil using a forked jembe
5. Gloves and face masks must be worn when using lime
6. Repeat after 2 years
7. The cost of one 50kg bag of lime is about 500 kshs

Manure is also good for reducing acid in soil as it contains calcium and magnesium.

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



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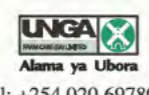
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## Phosphorus

Phosphorus helps plants grow well, especially the plant roots. It is needed for photosynthesis, the process for plants to make their own food for growth. Arthur's soil test showed his soil was low in phosphorus. Organic sources of phosphorus or fertilisers can be used to boost phosphorus levels.

### Organic sources of phosphorus

- Farmyard Manure
- Compost

You need about 4-8 tons of manure or compost for each acre.

### Phosphorus fertilisers

The amount and type of fertiliser you need depends on the health of your soil and the type of crop you are growing.

Examples are:

#### 1. Superphosphates (SSP)

This contains 16% to 20% phosphorous.

#### 2. Triple superphosphate (TSP)

This contains 44% to 49% phosphorous.

#### 3. Ammonium Phosphates

Monoammonium phosphate (MAP) and Diammonium phosphate (DAP) are both Ammonium Phosphates.

#### 4. Compound Fertilisers

Compound fertilisers, often called NPKs contain Nitrogen, Phosphorous and Potassium.

These are the 3 nutrients needed in large amounts by plants.

Examples of such fertilisers are

17:17:17 and 20:20:20 which has 20% Nitrogen, 20% Phosphorous and 20% Potassium.

To find out more about soil testing and knowing which fertiliser to use contact **KARI** or SMS the word KARI to 5606.

KARI National Agricultural Research Laboratories,  
Waiyaki Way, Nairobi  
020 444029/32

## Banana Pests & Diseases

### Number of suckers per main plant

There should be no more than 4 suckers on each main plant. Arthur had 10 per main plant. This meant there was not enough food (nutrients) in the soil for them all and bananas did not grow well giving small bunches. Prune to leave 4 suckers at different growing stages.

- 1) A mother plant (with a bunch)
- 2) A daughter plant
- 3) A grand-daughter plant and
- 4) A great grand-daughter plant.

### Pests: Banana Weevils

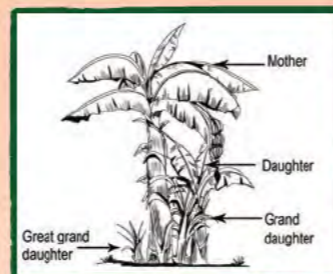
Weevils attack stems and the plant starts to die. The first signs of this are wilting of leaves. Control by removing harvested stems so the larvae cannot attack more stems.

### Diseases: Black Sigatoka

This is a leaf spot disease which leads to small bunches. Infected leaves should be cut off to stop the disease.

### Pests: Nematodes

This pest attacks the roots. Signs are stunted stems with yellow leaves. Use a nematicide spray during planting. Control the pest by removing infected stems. Do not intercrop bananas with maize, cowpeas or sorghum as these attract nematode pests.



4 suckers per main plant



Leaves damaged by Black Sigatoka

## New Poultry House Floor

- Sweep the floor well
- Wash walls and floor
- Use disinfectant on the walls and floor
- **Kenchic** recommends **Omnicide** disinfectant
- Read the instructions carefully!
- Always wear protective clothing when using disinfectant
- Put wood shavings on the floor two inches thick after cleaning



## Making a brooder

A brooder can be made from 2 or 3 sheets of softwood board made into a ring.



Join together using solid pieces of wood.



Place brooder frame inside the poultry house on top of the wood shavings.



Put a jiko, feeders and drinkers inside the brooder.

The best feed for chicks is 'Unga Fast Grow Starter Mash' (until the chick is 3 weeks old) and then 'Unga Fast Grow Finisher Mash' when it is 3 weeks old to 6 weeks old.

## Pawpaw diseases



### Pawpaw fruit rot

This is a fungus disease which comes when the wind blows fungus onto the fruit.

Brown spots are seen on the fruit. These fruit should be cut off. The chemical 'Ortiva' can be used to stop fruit rot on your plants as well as treat it if it does occur. Use 20ml of Ortiva for 1/4 acre. 20ml costs 200 kshs.



### Pawpaw leaf virus mosaic

Oil looking streaks on stems as well as yellow leaves are a sign of this virus. It is spread by insects.

To treat:

- 1) Remove infected plants and leaves
- 2) Use an insecticide like 'Actara'
- 3) Mix 8 grams of Actara with 20 litres of water. This is enough for 1/4 acre. 8 grams costs 160 kshs.



### Leaf Spot & Leaf Rust

This disease means the size of the leaf gets smaller so that it can't make enough food for growth.

Treat with 'Score' a fungicide which controls leaf spots. It can be used to stop leaf rot happening as well as treat it if it does occur. Use 20ml of Score for 1/4 acre. 20 ml costs 190 kshs.

## New Banana Plantation

A banana plantation should be re-planted every 8 years to make sure you always get good bananas. If the plantation is in bad condition, re-plant earlier at 5 years.



2 FEET WIDE AND 2 FEET DEEP



### Planting

1. Dig a hole 2 feet wide by 2 feet deep
2. Remove top soil and put to one side
3. Mix one debe of manure with the top soil
4. Also add a handful (150-200g) of **DAP** fertiliser and 20g (two full match boxes) of a nematicide like **Nemacur** to the top soil
5. Return this mix to the hole



6. Plant sucker 30 cm deep so it is secure
7. Water thoroughly

Tissue Culture (TC) bananas are often promoted because they grow quickly and have higher yields. However, to get high yields enough fertiliser and water is needed. TC bananas are at risk of the diseases listed above as well as cigar rot end so you must control pests and diseases well.

### Spacing

- **2.5m x 3m**  
Short varieties such as Dwarf Cavendish & Giant Cavendish
- **3m x 4m**  
Medium varieties such as Valery & Williams
- **4m x 4m**  
Tall varieties such as Lacatan & Poyo

## Passion Fruit diseases



### Pests

- **Spider mites:** Use 'Dynamec' to control this insect from eating your fruit. You need 10ml for 1/4 acre. 10ml costs 140 kshs
- **Woodiness:** This is a virus spread by insects. 'Actara' can be used to treat it. Mix 8 grams of Actara with 20 litres of water. This is enough for 1/4 acre. 8 grams costs 160 kshs
- **Grasshoppers:** Use 'Actara'.



### Diseases

Passion Fruit can get the same diseases as Pawpaw such as leaf spot. Treat with 'Score' a fungicide which controls leaf spots. It can be used to stop leaf rot happening as well as treat it if it does occur. Use 20ml of Score for 1/4 acre. 20 ml costs 190 kshs.

## All chemicals come with instructions which should be read carefully!

If you spray chemicals you must make sure you do not harvest for a number of days after using. The instructions on each packet will tell you how many days you must wait so that eating the fruit is not harmful and is safe for people to eat.

For more information contact Syngenta or SMS the word 'DISEASES' to 5606.

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