

Series 7, Episode 13

Joseph's Farm, Nakuru, KENYA

This leaflet contains information on: fertilizers, tomatoes, conservation agriculture, ploughs



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

For more information, SMS "FERTILIZERS" to 30606

Fertilizers

Fertilizers add nutrients to the soil so that your crop will grow well. They can also correct **deficiencies**. Using fertilizers correctly will give you a bigger yield.

What is NPK?

Nitrogen (N) – for leaf growth

Phosphorous (P) – for healthy roots and shoots

Potassium (K) – for flowers and fruits

N, P and K are needed in large amounts by crops.

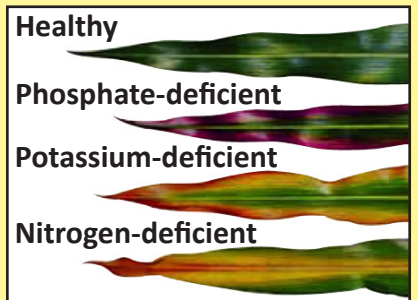
Most fertilizers contain **NPK**. These are known as primary nutrients. The number on the sack tells you the ratio of these nutrients by weight

e.g.

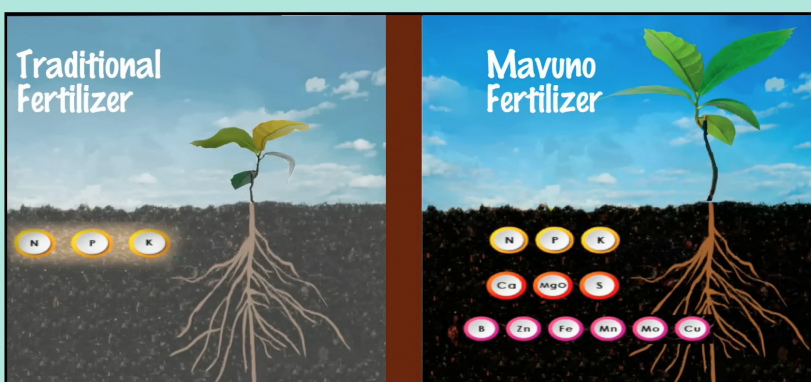
10:26:10 means 10 parts N, 26 parts P and 10 parts K. These numbers show that there is more P than other nutrients.

Does your crop have a deficiency?

Look at the leaves of your crop:



Mavuno Fertilizers



Some fertilizers, like those by **Mavuno**, have more nutrients added to them. These are **secondary nutrients**, like Calcium, Magnesium and Sulphur. Some are **micronutrients**, like Copper, Boron and Zinc. Micronutrients are only needed in small amounts.

These extra nutrients help your crop to grow faster and give you a better yield.

Different crops need different amounts of nutrients. **Mavuno** makes fertilizers that are crop-specific, for example, a fertilizer just for maize. **Mavuno fertilizers** are good for the crop and the soil. They reduce soil **acidity**. If your soil is too acidic, the crop cannot take out the nutrients it needs.

Buy **Mavuno fertilizers** from agrovets. Make sure you ask for the one specific to your crop. They come in different pack sizes.

If planting **maize**, you will need 75 kg of fertilizer per acre. Mix the fertilizer into the planting rows before planting. If you are planting in holes, use 1 bottle-top of fertilizer per hole.



Tomatoes

Plant certified seeds

Always plant certified seeds.

- They grow fast and give high yields of good quality.
- They are resistant to some pests and diseases.
- The fruits will be of the exact variety indicated on seed packet.

Royal Seed sells different varieties of tomato seed. Choose your variety based on your soil test results, climate, and what the market wants.

Before buying and planting, check the date on the packet. Seeds that are past the expiry date will not grow as well.

Royal seed seeds come in pack sizes of 5g, 10g, 25g and 50g.



Rambo F1

- Determinate (harvested for a short time)
- 95-100% germination.
- Matures in 75 days.
- Yields 25-30 tonnes per acre.
- Oval-shaped fruit.
- Firm flesh for a good shelf life.



For more information, SMS “TOMATOES” to 30606

Use drip irrigation

Flood and furrow irrigation both waste water. Water can be expensive and hard to get when it is dry.

Drip irrigation uses pipes with holes (**driplines**) to water your crop. The driplines stay in place during the growing season. When you want to water your crop, just turn on the tap.



Make sure you have a tomato plant by each hole in the dripline. This makes sure the water goes directly to the roots. None will be wasted.



Use drip irrigation because:

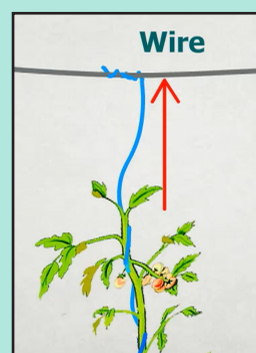
- You will use less water
- You do not waste water on weeds
- The plants do not get wet. Wet plants can get fungal diseases more easily.
- You will save time watering your crop
- You can apply fertilizer with the irrigation water.

Support your crop

Use **stakes** and **string** to hold up your tomato plants. Make stakes with wooden poles or long branches from your shamba.

Using stakes keeps the leaves and fruits away from the soil. If the fruits touch the soil they can rot. Rotting fruits bring pests and diseases.

Using stakes reduces production costs. You will need less chemicals as you get better coverage when spraying.



Use both stakes and drip irrigation to boost your yield by up to 50%.

Conservation Agriculture

Conservation Agriculture is a way of farming that looks after the soil to give you a good harvest. Over time, the soil becomes more fertile and you get a better crop. There is less work for the farmer. There is also less cost because you do not need as much fertiliser or chemicals.

Conservation Agriculture is based on 3 principles:

1. Minimum Tillage

When you disturb the soil it loses water. You also bring weed seeds to the surface so you will get more weeds. Weeds take food, water and sunlight away from your crop.

*Stop weeds before planting your crop. Spray with a herbicide eg. **RoundUp** 2-3 days before planting. Always wear protective gear when using chemicals.*



Do not plough your soil, just dig small planting holes. Keeping the soil intact keeps it healthy and saves time.

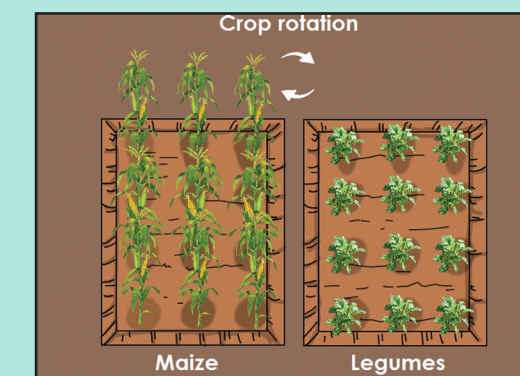
Keep livestock out of your fields. They compact the soil.

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.



If the hard pan develops **less than 30cm** deep, crops will not have enough space to grow well. You need to break the hard pan. Break the hard pan with a **subsoiler**.

2. Crop Rotation



Never plant the same crop on the same patch of land year after year. After a **cereal**, like maize, plant a **legume**, like beans. This stops pests and diseases building up in the soil. It also prevents nutrient deficiencies as different crops need different nutrients.

By rotating your crops, you will get better yields and make more money.

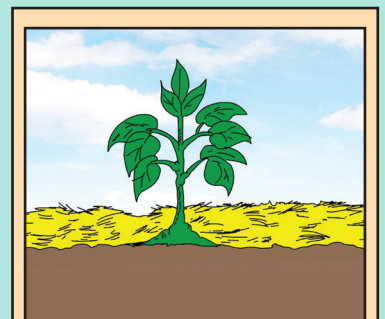
Beans have longer roots than maize. They will bring nutrients from deep in the soil to the surface. They also add nitrogen to the soil. Nitrogen is important for good maize growth.

3. Soil Cover

After harvest, leave the crop remains on top of the soil. Keep soil covered at all times to:



- Reduce soil erosion and loss of soil during heavy rain
- Hold moisture in the soil
- Protect the soil from the hot sun
- Stop weeds growing
- Give the soil extra nutrients from the crop remains when they have rotted
- Encourage the activity of worms which are good for the soil.



If you do not have crop remains to use, use dried grass as a mulch to cover the soil.

For more information, SMS “CONSERVATION AG” to 30606

For more information, SMS "TRANSPORT" to 30606

Using tractors for Conservation Agriculture

Simba Corp sells tractors, such as the **Same Tiger 70**, for a range of uses. The **Same Tiger 70** has 70 horsepower. It uses 8 litres of fuel per hour. It should take 1 hour to plough 1 acre. There are 2 types of ploughs that can be attached:

1. Disc Plough



A disc plough is the more traditional type of plough. It turns over the soil.

2. Chisel Plough



A chisel plough does not turn over the soil. It is better for **Conservation Agriculture**. The seeds will germinate faster and stronger. The soil will not dry out as fast.

Simba Corp Customer Service

Simba Corp has a fleet of service vehicles. If you have a problem, **Simba Corp** will send a service vehicle to your shamba.



How can I afford a tractor?

Buy with your farmers group, cooperative or SACCO.

Talk to **Simba Corp** about their flexible repayment periods. For example, one of their packages allow payment over 60 months. Go into a **Simba Corp** branch and ask to speak to their Asset Finance Manager.

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www.cimmyt.org, +254 20 722 4246



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