

The Organic Farmer

The magazine for sustainable agriculture in Kenya



Nr. 62 July 2010

Peanuts for Kenyan farmer

The new budget allocates agriculture a paltry Ksh 8 billion out of the Ksh 997 billion budget.

The Organic Farmer

Farmers have little to celebrate in this year's budget. At a time when the country is blessed with abundant rains and a bumper harvest, one would have expected the government to allocate additional funds to buy the surplus cereals. Previously, the National Cereals and Produce Board has set the benchmark in pricing against which millers and even middlemen are forced to buy.

This has led to stabilization of prices to the benefit of farmers. If we go by past experience, farmers now will be left at the mercy of middlemen to sell their maize, of course at throwaway prices. To make matters worse, the government reduced import duty on wheat and rice; this will only benefit millers at the expense of local wheat farmers.

Farmers are a neglected lot

We have just emerged from a devastating drought and food shortage.



Despite hard work, farmers are neglected

Luckily, the situation has abruptly changed. A wise government would have taken advantage of this to buy the excess produce, to build its buffer stock and stabilise prices. All of us know very well that all the maize in the strategic reserve was sold by government officials to Sudan and the rest to local millers. The country now does not have adequate maize stocks at NCPB.

By the way, Kenya is a signatory to the Maputo Declaration on Agriculture and Food Security, which stipulates that African countries allocate at least 10 percent of their national budgets to agriculture. The new budget allocates less than 1 percent.



More winners page 6

Advantages of an egg incubator

TOF - Many farmers rely on their hens to incubate eggs. This method is natural but not very efficient. A farmer in Kisii has made his own incubator. He uses his home-made cooker that hatches up to 200 eggs in one incubation cycle, increasing his production and income. *Page 2*



New services from The Organic Farmer

1. Do you want to buy or sell farm products? Beginning this month, TOF will offer free advertising space for farmers on its website.
2. From August this year, you can read some of the most commonly asked questions and answers from other farmers on the TOF website. See page 8.

in this issue

Cattle deworming	3
Using polythene sheeting	4
Seed potato storage	5



Dear farmers,

This year, Kenya has been blessed with abundant rains. Reports from most parts of the country indicate that many areas, especially those that experienced a devastating drought last year, are now expecting a bumper harvest. This state of affairs will improve the food security situation in the country. Moreover, as in previous years, when the agricultural sector improves, so does the economy.

But do we really have the full benefit of this bumper harvest? We doubt! The outcry is loud and clear: We do not have adequate storage capacity. According to the new budget the government is not willing to buy the surplus from farmers and store it (see side story). Farmers as well do not have sufficient and safe storage capacity and facilities; so they are left with no option but to sell their farm produce to middlemen at throwaway prices.

It really baffles us to see how our planners do things. It seems that we do not think ahead. Why do we not learn from past mistakes? Why do we not heed the warning of the UN-agricultural organization FAO, which says about 40 percent of all harvested cereals get spoilt because of lack of good storage? In season of plenty, we are quick to forget what the country has undergone in the past two years: we were forced to import food in order to save the starving population. We know already what will happen when the next drought strikes: We will rush to beg for food from donors and use substantial amount of our foreign exchange reserves to buy food from other countries.

Indeed, it is not only food but also the water that is going to waste. If there was an elaborate plan to harness our water resources especially at a time like now, the same water can be used both for irrigation and even domestic use in times of drought. If the government has no proper plans, at least our farmers should take the initiative and find out how they could utilize the excess water in their shambas.

An oven for both cooking and brooding

An innovative farmer has built an incubator and earns good money selling chickens.

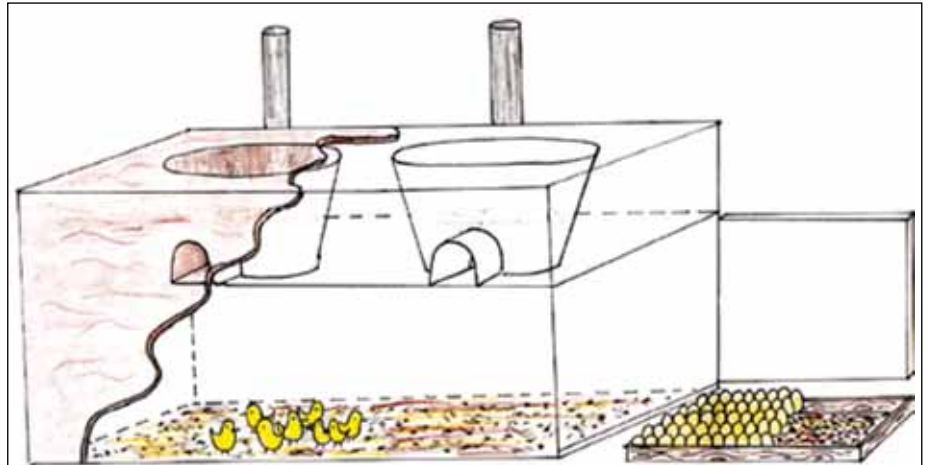
The Organic Farmer

Buying modern egg incubators is an uphill task for most rural farmers. Either they are too expensive or lack of electrical power in most rural areas makes it difficult to use them. However, Ronald Nyagaka, a farmer in Kisii has devised a way to overcome this problem. In October last year, a poultry farmer from Busia showed him how to build an incubator with mud and bricks (see sketch on the right).

A lot of labour

Once the desired number of fertilized eggs is attained, Nyagaka carefully places them on a tray with about 3 - 5 cm of loose dry sand and puts them in the incubation chamber. They have to be turned over every 2 hours to get uniformly heated, for about 21 days. Turning also keeps the egg yolk from sticking on the eggshell, which can lead to spoilage during the incubation stage.

During the day, Nyagaka uses only one cooking place three times a day: For tea preparation in the morning, lunch and supper in the evening. Using the cooker's two fire places for cooking would make the incubating chamber too hot for egg incubation. Overnight, it is advisable to turn the eggs with the narrow end pointed upwards. The door to the hatching chamber has to be closed to keep the heat in. In colder cli-



The incubator Ronald Nyagaka built looks like a common oven: The top with two fireplaces is used for cooking. Under these fireplaces is a chamber, the incubator, which retains the heat from the fireplace. The chamber has a door that can be closed overnight. In front of the door lies a tray with eggs. (Graphic by: S. Nganga)

mates than Kisii it may be necessary to get up during the night and check that the temperature does not fall below the recommended range.

The only way a poultry farmer can keep the home-made incubator working properly is to use a thermometer since the temperature in the incubator need to be monitored regularly to ensure it ranges between 38-42°C. Without a thermometer, a brooder cannot determine and keep the right temperature for proper incubation. Thermometers are available in most chemists. In incubators like the one of Nyagaka, the thermometer is positioned at the same level as the top of the incubating eggs.

On average, Nyagaka gets between 180-200 chicks out of 300 eggs he puts in the incubator. Through improving the incubator, he tries to increase the hatching rate. "I still have problems to keep the heat consistent in the incubator", he says. "Nevertheless, it is still much better than when I rely on the hens to hatch the eggs."

Good income

Nyagaka has seen a steady increase in his earnings from poultry rearing since he started using the incubator. He sells a eight-month old hen or a cock at between Ksh 250 - 300. During the festive season, chickens prices go up to between Ksh. 500 - 800. His main customers are hotels in Kisii town and individuals in his home area in Keogoro location in the outskirts of Kisii town. He earns on average Ksh 15,000-20,000 every month from his incubator. About ten farmers from his neighbourhood have copied Nyagaka's home-made incubator, three of whom he says, are quite successful.

How to take care of eggs for incubation

To produce healthy and vigorous chicks, eggs meant for incubation should be carefully selected and cared for. Poultry farmers incubating eggs should keep to the following guidelines:

- Select eggs from hens that are well developed, mature and healthy and which produce a high percentage of fertile eggs. Layers that produce eggs for hatching should also be well fed. Avoid eggs from directly related chicken to avoid inbreeding.
- Select average-sized eggs. Large eggs hatch poorly and small eggs produce small chicks.

- Do not incubate eggs with cracked or thin shells.
- Keep only clean eggs for hatching. Do not wash dirty eggs or wipe them; by so doing, you remove their protective coating and expose them to infection.
- Store eggs in a cool humid place. The narrow end should point upwards.
- Allow cool eggs to warm slightly in room temperature before placing them in the incubator.
- Eggs meant for incubation should not be stored for more than seven days. After 3 weeks, the ability of eggs to hatch reduces considerably.



Ronald Nyagaka feeds his chickens

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Internal parasites are manageable

Prevention of livestock parasites is always far more effective than treatment.

The Organic Farmer

As the rainy seasons sets in, many livestock owners notice increased infestations with internal parasites connected with reduced growth or poor productivity. It is impossible to eradicate parasites completely, but they can be managed in a way that they do not affect the animals severely. The solution is to avoid high infestation and to strengthen the animals' vitality and resistance. Exploit all strategies of prevention! Here we list the essential practices; they are often quite simple.

Parasite life cycles

Understanding the life cycles of internal parasites allows a more effective control. It is important to know that only the adult stages of internal parasites live inside livestock. Coccidia, gut worms, and tapeworms colonize the intestine, lungworms the lungs, liver flukes the liver, and brain worms in sheep and goats the brain. They produce eggs that are passed outside with the dung. With sufficient moisture, they develop into tiny infectious larvae that survive on pastures or in stables until they are consumed by grazing animals.



Good feeding and clean housing

An adequate quantity of good, clean feeds is crucial for the health of all animals. This includes preparing or buying sufficient feed amounts for the dry season. Well fed animals that are kept comfortable can cope with parasites much better!

Good housing provides shelter from the sun and rain and provides enough space for all animals to move freely. Keep it clean and dry to reduce breeding and spreading of parasites and diseases. Droppings must always be removed completely and daily. Ensure permanent access to clean water that is not contaminated with manure.

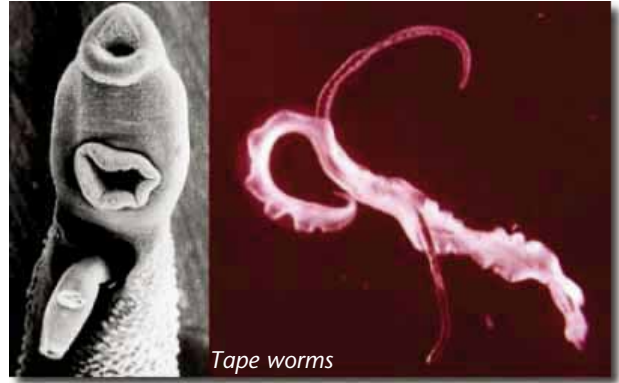
Grazing management

Most internal parasites are taken up on pastures. Without a good grazing management, parasites can not be controlled. The following measures will limit parasite infestation:

- Divide the pasture area into 4 to 5 paddocks and rotate the animals on them.
- Graze each paddock for approximately one week and let it recover for around one month.
- Avoid overstocking and overgrazing.
- Parasites develop best on wet spots, therefore fence off wet areas (very important to avoid liver flukes) and avoid grazing on wet pastures.
- Avoid roadside grazing where parasite control is impossible.
- Zero-grazing animals are less exposed to internal parasites, but coccidia can spread in dirty housings.

Immunity development

Grazed livestock build up immunity against most internal parasites (except liver flukes) within the first year of grazing. However, all young stock can be severely affected. In the worst case, they may die or may never fully recover from a heavy parasite attack. It is therefore important to take good care



Tape worms

of young animals and to develop and support their parasite tolerance with good husbandry!

- Regular deworming of all animals reduces the overall worm burden.
- Groups of young animals should be grazed on fresh, uninfected pasture.
- Coccidia and gut worms cause diarrhoea that may have to be treated.
- Lungworms cause coughing and may lead to sudden death in calves if untreated.

Commercial dewormers

Farmers should deworm their animals two weeks after the onset of the rains. It is also advisable to deworm at the onset of the dry season to ensure healthy animals during the period of limited feed resources.

To be effective, all drugs must always be applied in the correct dose! Underdosing leads to parasite survival and resistance.

Different worms require different treatments. To prevent wrong medication, correct diagnosis should be made by a veterinarian. Flukicides should be applied regularly in fluke infested areas as animals do not build up immunity against liver flukes. *tsz*



Roundworms (above) and lungworms (below) are some of the most common parasites in livestock.



Botanical dewormers

Natural products usually do not have the same immediate effect as synthetic drugs. But they can help to keep infestations at an acceptable level. Their disadvantages are uncertain efficiency and unclear dosages. They may have to be applied over a longer period.

Some plants are poisonous and require clear instructions on how to use them from a reliable provider or extensionist.

In case of heavy infestations, always consult a veterinarian and apply an effective commercial drug.

Pyrethrum	"Pymac" can be mixed into feeds regularly.
Garlic	For one cow, mince 250 g of garlic and mix into 4 litres of water. Drench 2 litres twice a day.
Neem	Use neem cake, seeds, oil or bark.
Mustard	Give 100-150g mustard seeds or oil to a cow daily for one week. Repeat this treatment regularly.
Papaya	Use the seeds or a leaf extract.
Pumpkin	Use seeds or seed extracts.
Wild ginger	Mince 50 g of the aerial parts of snake root roots to treat cattle.
Carrot	Use carrot seeds against lung worms.
Wormwood	Preparations from <i>Artemisia</i> ssp (wormwood) can help against most internal parasites.
<i>Albizia anthelmintica</i> (<i>Mwowa</i> or <i>Kyalundathi</i> -Kamba):	For one cow, soak 500g of chopped bark in 3 l of water overnight, sieve and drench.

Polythene mulch in vegetable production

Worldwide, millions of acres are cultivated under polythene sheets. What is it all about?

Theresa Székely

Polythene films can be used to cover the soil in crops that are planted in rows. Crops grow through holes in the plastic, usually in combination with a drip irrigation system. This is a widespread method in large-scale vegetable growing. Why is it so successful?

The obvious advantages

First of all, plastic mulch provides an environment where weeds are significantly low. Also root damage from mechanical weeding is greatly reduced. However, clear sheets allow weed growth underneath. Another advantage is that soil moisture is conserved and less irrigation water is required. Plastic mulch covering the soil decreases the crusting effect of rain and sunshine. The soil stays loose and aerated, even if it is covered by plastic. As a result, plants are often healthier and more vigorous. In addition, black and clear films increase soil temperature, allow-



Use of plastic sheeting can save water, suppress weeds and can kill harmful bacteria.

ing earlier planting in cool climates and earlier harvesting when prices are still good. Erosion is reduced, but only underneath the plastic.

Some less obvious disadvantages

The costs for good material can be high. Polythene films cannot be used for long. They tend to tear and to break up into pieces as they become brittle, leaving residues which may accumulate and stay in the fields for decades. The disposal of a million tons of mulch film used worldwide every year has become an environmental disaster. It

is hoped that bio-degradable films, which decompose on the field, will replace the plastic films, which are common at the moment. Also irrigation tubes have to be maintained and replaced quite often.

In large-scale production, specialized machinery and equipment for bed preparation, laying the mulch, and for transplanting is used. The removal of the mulch after harvest is hard and additional labour. Soil erosion can be increased in the bare parts of the field where rainwater runs off quickly.

Think before you buy plastic mulch!

Which advantages will you have? Weigh them against your costs and disadvantages. Plastic mulch does not mean less work, and more intensive management will certainly be necessary. The mulch must be checked continuously and kept down by applying soil on top of it – otherwise, it may be blown away. If it is loose, it may damage young plants. Weeds can emerge from the planting holes, and pests have to be controlled too. Drip irrigation must be well managed. Fertilization must not be neglected but it is more difficult to apply under plastic sheeting.

When looking at the whole package, drip irrigation is probably the element that brings the most substantial benefit. Organic alternatives to plastic mulch Mulch films (such as polythene) that

do not decompose on the field are not recommended in organic agriculture, and decomposable films are not widely available. But there are some practices which have almost the same effect and will even have additional benefits: Cover crops planted between main crops and mulching with organic materials like crop residues or cuttings from hedges and trees. Soil cover is essential for soil fertility. In contrast to plastic sheeting, an organic soil cover does not only conserve humidity and suppress weeds, but will also build up soil organic matter, improve soil structure, provide nutrients for other crops, and increase water storage capacity. In addition, soil erosion will be controlled more effectively than with plastic mulches which block infiltration of rainwater into the soil.



Which type of mulch film is best?

Depending on crops and climate, different materials should be considered.

- In cool, wet climates, plastic mulches can help raise soil temperatures and prevent washing out of nutrients.
- In a hot climate, plastic mulches may raise soil temperature too much, stressing plants and burning organic matter.
- For crops which thrive in a warm environment like tomatoes, pepper, eggplants and melons, dark or clear mulches may be appropriate. They increase soil temperature and heat the air around the plants. Make sure that the plants do not suffer from moisture stress, as this will lead to diseases like blossom-end rot problems on tomatoes, and reduce the overall harvest.
- For crops which do well in cool temperatures like broccoli or lettuce, a white film or an organic mulch from straws, leaves or even paper are preferable. These mulches will lower soil temperatures during warm periods.

Correct drip tubing (exposed for demonstration) on a bed of staked tomatoes. Tubes are usually placed a few inches below the soil surface.



The right way to store seed potatoes

Farmers lose a large portion of their potato harvest due to poor storage methods and facilities.

The Organic Farmer

Selection of the right potato planting material is one of the most challenging tasks a farmer has to undertake if they expect to get good potato yields. Most farmers fail the test when it comes to this very important task. Proper selection of potatoes for seed including the right conditions of storage can improve the quality of potatoes and the overall yield. Some farmers use seed potatoes either too early or too late and this tends to negatively affect the sprouting and even the eventual yield they get in the process. The quality of seed potatoes depends on how the potatoes are handled right from the time of harvesting to the day of actual planting. The following guidelines can help the farmer maintain quality for increased yield and income.

Pre-harvest stage

Two weeks just before harvest, cut off the leaves at the root base. This allows the potatoes to harden. It also reduces water loss. Farmers who do not cut off the leaves at this stage will get potatoes, which peel off easily and tend to rot especially during storage. In areas with high temperatures, potatoes tend to lose water faster thus reducing their quality.

Sorting

Sorting potatoes immediately after harvest is a very important exercise. Seed potatoes need careful selection. Only potatoes, which are the size of a hen's egg or smaller, should be selected for seed. Potatoes bigger than the egg-size can be sold or stored for consumption (ware potatoes). Ensure all bruised potatoes are removed and kept separately, equally all potatoes damaged by tuber moth. Bruised tubers are prone to diseases and tend to rot within a



Potato sprout should be at least 2cm long before planting



Poor selection and storage can result in delayed emergence and growth.



Seed potato should be stored in crates or nets and not on the floor of the store house



Saw dust prolongs potato storage

Potato storage can be challenging to many farmers. Although they may harvest large quantities of this crop at any one time, they may be forced to sell it immediately even if the market prices are low just to dispose of them due to lack of storage skills and facilities.

One method farmers can try is the use of saw dust. A thick layer of completely dry saw dust is spread across the floor of the store. After this, the potatoes are sorted to remove those that are bruised, the rotting ones and those with holes from tuber moth infestation. The potatoes are then fully covered in dry saw dust to prevent

light or moisture damage.

Githenya Kariuki, a farmer in Kinungi in Naivasha has used this method for several years and says the potatoes can stay as long as four or five months without any signs of damage. The storage method has enabled him and other members of Nyakairu Farmers' Group to store their potatoes until such a time that the market prices are favourable, shielding the group from losses.

The storage method has also improved their food security as they have potatoes all year round both for home consumption and even seeds for replanting.

short time. Some farmers tend to wash potatoes so as to remove soil particles but this is dangerous because the water used could introduce diseases such as bacterial wilt, which can spoil potatoes meant for seed.

Store potatoes properly

If poorly stored, potatoes rot easily. The quality of stored potatoes depends on the amount of light that is allowed to filter into the storage facility. If potatoes are stored in direct light, they cannot sprout, instead they turn green; such potatoes are not suitable for either seed or even consumption. Farmers should always ensure that their stores allow in as little light as possible. The floor of the store should be completely dry; if possible the floor should be a raised platform. The store should also be rat-proof to reduce rat damage.

Storage bags: Potatoes should be stored in sisal bags, which allow air circulation; synthetic bags tend to trap heat inside which can damage potatoes. Alternatively, Potatoes should be stored in net bags, which allow both light as well as ventilation.

Storage crates: Storage crates are made of timber and can be used by farmers producing large quantities of potato seed or those in large farms. Stores with storage crates should be constructed in such a way that they face the East-West direction- this reduces the amount of light getting in (Diffused Light Stores) to prevent sunlight in the morning and also in the afternoon.

Pre-planting: Seed potatoes should have a uniform sprout in all the eyes. If one sprout is longer than the others when planting, it should be plucked out to allow the other sprouts to grow.

Tips for storing seed potato

Observe the following tips to increase your potato yields:

- Do not store sprouted potatoes for too long in the store.
- Remove bruised potatoes.
- Spray neem-based pesticides around the store and in the storage area at least once every month to prevent pest damage on potatoes.
- If need be, cover your seed potatoes with dry grass. This encourages sprouting and reduces amount of light reaching your potatoes.
- Potato sprouts should attain a sprout (shoot) length of at least 2 cm in length before planting. Potatoes planted without proper sprouting will show delayed emergency.
- Green potatoes are not suitable for consumption, they contain a compound solanine that can be poisonous. Avoid them.





Thank you farmers

We are pleased to inform you that all prizes for TOF farmers' competition have now been sent to the winners. Let us know if you have not received your prize. From the entries, we were really impressed to learn that farmers read and apply the information we give them every month. A good idea came from one of the winners, Ibrahim Wakayula: He would like to get in touch with all the farmers who participated in the competition so that they can look for a way to form an organic farmers organization. It is a good idea if farmers can come together to promote organic farming and lobby for their interests.

12th Prize: Samuel Nguire

Samuel Nguire wrote us a nice story. After reading the TOF edition of January 2007, he decided to produce fodder for his cows for consumption during the dry season. Hay making was quite easy, even if Samuel had to



find out how to compress the hay in the wooden box. Much more challenging was the production of silage. It was his first attempt. When he opened the 1000 gauge polythene tuber bag, he 'had to close his nose', as he writes: "It was rotten completely and had a pungent smell which ashamed me before my friends, whom I had invited to see what silage is". But Samuel did not give up, he acquired a lot of knowledge and is paid some money when he assists other farmers to prepare silage.

14th Prize: L. Cheruto

Reading TOF magazine from March 2007 about Artificial Insemination has improved Linah Cheruto Seurei's farming and income. Unhappy with her cow, which used to give her only 4 litres of milk, she embraced



AI services. Now she owns a pure ayrshire cow that produces 20 litres of milk daily. But Linah realized as well, that a good cow needs good fodder. So she learnt how to do it from TOF, planted Napier grass using the *tumbukiza* method, and prepared her own pesticide against ticks from tephrosia, pyrethrum and a handful of *saga* roots. Together with her neighbours, she initiated a dairy board group, which uses AI, as Linah tells us. "This method has made me to succeed!"

11th Prize: Stanley Muhia

For quite a long time, Stanley K. Muhia from O'Kalou toyed with the idea of venturing into Agrobusiness. But then he changed to poultry and bee keeping - until he was badly attacked by his bees.



He then sold them. When a friend gave him a copy of TOF April 2007 with an article on mushroom cultivation, Stanley found his future profession. He learned it step by step according to the detailed instructions given by TOF. Stanley is now a successful mushroom cultivator and sells his products under the label O'Kalou mushrooms. From TOF he learned rabbit keeping as well as greenhouse farming.

13th Prize: M. K. Chumba

For a long time, Michael Kipkirui Chumba had a strong interest in greenhouses. He translated the idea into action after reading TOF from September 2009. Erecting the greenhouse was not the problem. He found it difficult to



understand the relationship between the outside and the inside temperatures and to control diseases which occurred without any prior symptoms. He had to spend more time at home, since it was difficult to delegate greenhouse duties when he was committed elsewhere. But he succeeded and he feels that he has improved as a farmer. He is happy that TOF gave him the information, which pushed him ahead, as he wrote to us: "Better late than never!"

15th Prize: R. Wambua

The Ukulu Self Help Group in Kangundo was one of the first farmers' group trained by the iTOF extensionist Victoria Mutinda in August 2009. It was from this training that Roselyne Mbula Wambua got the



idea of organic farming. It was quite challenging for her to get enough material for a compost heap from her small plot. The hard work of putting up a compost heap is worthwhile, since she now harvests five bags of sukumawiki instead of the previous two. Roselyne converted fully to organic farming, using plant extracts against pests and is happy that she can eat healthy vegetables, which grow on a fertile soil without the use of any chemicals.

Ugali is harmless feed

My cow eats ugali, is it harmful?

There is nothing wrong with giving a cow some ugali from time to time. All products from the maize plant, leaves, cobs, corn meal or silage are very good for cattle. The only restriction: never feed products like maozo that have mould on them! Moulds on feeds, especially on grains or concentrates, may contain aflatoxins which are poisonous to animals and humans. They can contaminate the milk and even affect people who consume it.

No manure? Use Tithonia!

I want to start an organic kitchen garden, but my problem is inadequate farm yard manure. Can I use Tithonia leaves to replace manure? Evalyne Wanjiru, Farmer in Kamoro / Gatuto

Plants need nutrients for their growth. Inadequate fertilization management will create severe problems with soil fertility in the long run. If you lack farmyard manure, you should be even more aware of collecting and composting all organic wastes from your kitchen and your farm carefully. You should add wood ash (for Potassium supply) and rock phosphate (for phosphorous).

If you have Tithonia growing on your farm, it is very good to use it for fertilization. Tithonia leaves release nitrogen and other nutrients quickly while they are decaying. Tithonia can be cut several times a year. The most effective way of using Tithonia is chopping large amount of green shoots before they flower, and to use this material as green manure and mulch. Mix 4 to 5 kg (or a layer of about 4 to 5 inches) per square metre into the topsoil one week before transplanting seedlings. Add a layer of chopped leaves around the plants regularly while they are growing. Of course, cutting and chopping Tithonia is hard work, but we are sure that the effect will surprise you!

Jatropha seeds are dangerous

Can I include Jatropha seeds while formulating poultry ration for further enrichment? Samson Ngayo Kambuni, Farmer in Thumaita / Gatuto

You definitely should not. Jatropha seeds, seed meal and cakes contain curcin, a poison similar to ricin in castor beans. Already small amounts of untreated Jatropha seed products reduce growth rates and increase death rates of chicken. Fermentation and heating can reduce the toxic effects. Unfortunately, we were not able to find a description of a simple and safe detoxification procedure, and there seems to be no experience with Jatropha as animal feed. We therefore advice you to put Jatropha wastes on the compost heap. For now, this is the best way to take advantage of their nutritional value!

Using an A-frame is easy

Why do we encourage the use of an A frame when a farmer can just wake up one day and dig a terrace on his farm?

For many people it is not easy at all to determine a slope. You can compare this to the situation where you have to estimate the weight of any object. You may be able to guess the appropriate weight, but a balance will in any case be more exact than your estimate.

If you do not have technical equipment, an A-frame will help you in a very simple but effective way to make a terrace. Personally, I would find it helpful and easy to use, but it is difficult for a farmer to make a terrace without an instrument such as an A-frame! The

worst thing that can happen is when the terrace cannot slow down the flow of water. When this happens, the water will form small rivers eroding the soil and causing more problems for the farmer.

How to use the frame

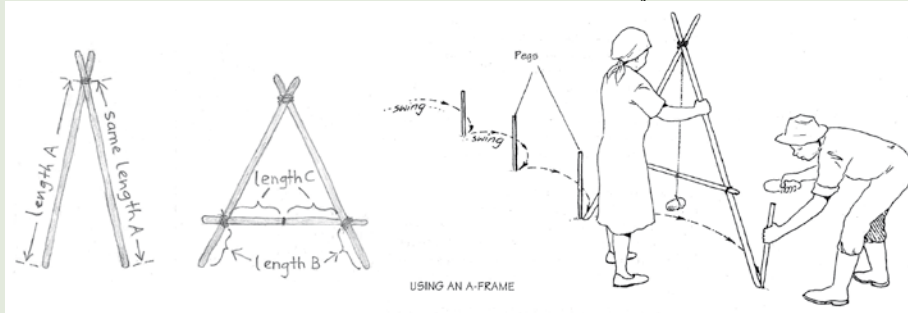
To use the frame, put one of its legs to the ground. With the second leg, search for the point where the string with the weight is exactly in line with the mark in the middle of the third stick. The weight must hang loosely. Mark this point with a peg and move the frame to search for the next point in the line. We assure you, you will get a very nice terrace this way! *tsz*



Arrow roots do well under plastic sheeting

Please assist with information on growing arrowroot using polythene paper. Thanks and God bless your work. Gathogoh B.K from Nyeri 0722 270 530.

Arrowroots require a lot of water to grow well. Due to the drying up of many rivers where farmers used to grow these tubers, some farmers have discovered the use of polythene sheeting. As a result, arrowroots are now grown near homesteads as part the kitchen garden using polythene sheets; after laying out the polythene sheeting, they are planted in holes made through the polythene. Regular watering through a kitchen pipe under the polythene provides the arrowroot plants with their water requirements. Using this method farmers have managed good arrowroot harvest in the same scale they used to get when they grew them along the rivers. See also on page 4! *pk*



1. Use two straight poles or sticks of about 2.5 to 3 meters length. Tie them together at one end. Both legs must have exactly the same length (A). You can use a piece of string or wire to control this.
2. Tie a third straight stick across the legs. Make sure that both lower ends of the "A" have the same length (B). Use the string to make out the exact middle of the third stick between the legs (C) and mark it clearly.
3. Fasten a long piece of string where the legs are joined and tie any weight (a stone, a potato, a cucumber) to the lower end. The weight should not touch the ground.

Turn the compost, the ants leave

Whenever I use compost manure I normally experience problems associated with ants. What can I do?

As we cannot be sure what kind of problems you encounter, we are going to give you a general answer concerning ants and compost. Perhaps a better understanding of the way these creatures live and feed may help you to solve the problems.

Roughly, there are two types of ants. Ants living in the soil and in the ground litter are often hunters and scavengers. They feed on all kind of insects which they find near the ground and on plants, including pests like caterpillars or banana weevils. They are actually useful and do not damage crops. The other type is more specialized for living in trees. These ants often feed on the liquids excreted by sap-feeding insects such as aphids, scale insects, mealybugs or treehoppers. They even take care of these pests and defend them against enemies. They, too, do not damage plants directly; but they promote pests that feed on plants. The best thing to do in this case is to control aphids and other plant-sucking insects frequently. Ants sometimes

build their nests in the interspaces of organic material or in compost piles. This is usually no problem. If you disturb them by turning the material and keeping it moist, they will be frustrated and leave.

Termites, on the other hand, are quite different. They mainly feed on coarse, dead plant material, decomposing it. They will be attracted by material or compost that is not well decomposed.

Therefore, if you make sure your compost is well decomposed and crumbly at planting, you should be able to avoid difficulties with ants or termites caused by compost manure in the field. *tsz*



Green dung, what to do?

Why does a cow have diarrhea with dark green dung? Wabuyekha in Kimilili 0723 155 757 (SMS)

The colour just indicates that the feeds are not adequately digested due to some gastrointestinal disorder. Diarrhea can have many causes; bacterial and viral infections, parasites, abrupt changes in the diet or toxic plants may be involved. If the diarrhea is severe or persistent and if the animal starts to look emaciated you have to consult the animal health service. Some diseases accompanied by diarrhea are fatal without treatment or incurable.

Animals suffering from diarrhea should be given clean water at intervals of 1 to 3 hours to compensate for the loss of body fluids. Palatable, clean feeds and mineral salt should be available at all times. Always take care to keep the stable clean and remove all droppings continuously.





Anything to sell? We will assist you!

Farmers often have problems selling their farm products. *The Organic Farmer* has a new service in opening for you new markets. Beginning July this year, we will have a special section in our website (www.organicfarmermagazine.org). Farmers or farm-related companies will have a forum to advertise various farm products they want to buy or sell. How do you get there? You can send an SMS to Tel. 0715 916 136 with your name, the product you want so sell or buy, and your full address. We will then put your advert on our website. The service is free of charge! TOF has a readership of around 160'000 readers. Expand your market reach! This new service will expose you to a wide range of clients locally and outside the country!

Dry maize properly to avoid poisoning

TOF - Kenya is again faced with the threat of aflatoxin poisoning in Maize. Heavy rains across the country that began late last year have led to a bumper harvest in most areas. Most farmers do not dry the maize properly before storage. When the moisture content is higher than 13.5 per cent, most cereals especially maize develops a mould or a fungus called *aspergillus flavus* that produces aflatoxin. The Kenyan government has sent out an alert warning that much of the maize being harvested is already contaminated.

Aflatoxin kills

Aflatoxin causes many complications when consumed; it causes liver cancer and weakens the body's immune system, making it easy for other diseases to attack people. Aflatoxin is colourless, so consumers cannot tell the difference between contaminated and healthy maize. It cannot be eliminated by washing, cooking, or even fermenting maize.

Moisture testing

Maize should be dried completely before storage. To test if maize is dry, mix a handful of grains with half a handful of dry salt in a dry soda bottle;

New disease threatens cassava

A new strain of Cassava Mosaic Disease has hit the cassava crop in East Africa wiping out at least 202 342 hectares of sorghum in Uganda alone. The disease has no known cure and it may take more than 10 years to develop a resistant cassava variety, says scientists. The Cassava Brown Streak Disease (CBSD) attacks the edible part of the cassava tuber and leaves, reducing crop yield

Question and answers now on the web!

Every month, dozens of farmers send their questions to our magazine. We answer the urgent ones through SMS and direct calls. Others are answered through *The Organic Farmer* magazine and *TOFr*adio (Thursdays on KBC, at 8.15.pm). Some urgent questions might also be of interest to other farmers. That is why we have decided to post the questions and the answers on our website www.organicfarmermagazine.org. You just go to the website and you will see a link to the question/answer page. All you need to do is to send the question through SMS to Tel. 0715 916 136. The site will also have some of the most common questions and answers. This new service provided by *The Organic Farmer* will be launched in August this year.



shake it for 2-3 minutes and allow it to settle. If salt sticks on the walls of the bottle, then the grain has moisture and needs more drying. Repeat the process until no salt sticks on the walls of the bottle. You can then store the maize.

and causing great loss to farmers.

The disease, that previously affected lowland areas has now spread to highland areas in Uganda, Tanzania and Western Kenya. It is not easy to detect; the symptoms that include the shrinking of roots, cracks and stained tubers with a yellow brown diseased spots. It also causes yellow and green patches on the leaves.

We need your contacts!

The number of TOF readers is growing steadily as the number of incoming questions from farmers show. We need to update our mailing list and to intensify our contacts with farmers all over the country. We therefore request you, the farmers, to send us an SMS with your telephone numbers and your full address - You will then become one of the farmers in the rapidly expanding organic farming community in the country. You do not have to pay, the SMS is free if you just send a text message to... (We need to decide if we will use Frontline or any other toll-free SMS number)

Why do we need your contacts? We would like to keep in constant touch with you. If we have your telephone contact, we can alert you when we have sent out the magazines, so you can request for your monthly copies from your chairpersons, the local distributors or the local courier company branch. We will also update you on any upcoming events such as field days including radio programmes on Thursday evenings. If we have any urgent messages, we can inform you through the SMS service. Don't wait until tomorrow. Send us an SMS today, it is for free - and to your benefit!

Organic products and Training:

We sell organic value added products including Moringa powder, carrot flour, beetroot flour, amaranth flour, dried vegetables, garlic flour, stinging nettle flour and ginger. We also offer training on value addition and income generation skills to individuals or farmers groups. For more information please contact us:

The director, SUFOD P.O. Box 39251-00623, Tel. 0724 456 420, Nairobi

E-mail: sufodj@yahoo.com

Dairy goats:

We have Sannen and British Alpine dairy goat bucks (males) for sale. Interested farmers can contact David Nyaoke Jowi, Nyanza Dairy Goat Farmers Tel.0725788 200.



Irrigation: In our January 2010 issue, we quoted the wrong price for the 920-1000 drip irrigation tank as costing Ksh 9000 (Product code: 1004). The correct price for the tank is Ksh 28,000. Farmers who want to buy drip irrigation systems should contact KARI, Irrigation and Drainage Research Programme (KARI NARL) Waiyaki Way P.O. Box 14733 Nairobi, Tel 020 4 444 250 cell 0722 764 751, 0722 397 750 Ask for Isaya or Esther Muriuki.