

The Organic Farmer 100



The magazine for sustainable agriculture in East Africa

No. 100 September 2013



Dear Readers

The *Organic Farmer* has turned out to be an amazing success story. That you are holding



the 100th edition in your hands is truly remarkable. It shows that a huge void was filled when the magazine was launched in 2005, with access to vital information being a big problem for small-scale farmers, not just in Kenya, but all over Africa.

Accordingly, the rapid growth of the magazine was demand driven. Today TOF reaches up to 240,000 readers and the Internet site biovision-infonet.org is visited by over 900 people a day. Weekly radio shows, the SMS service and access to information through smart phones complement TOF and vastly increased its reach.

The information on sustainable agricultural production is key to assisting millions of smallholders, who are, as is widely recognised, crucial for ensuring food security for the population, creating jobs and maintaining a healthy environment. All of which form the basis for any healthy economy.

However, the need for extension services and ongoing support for smallholders is traditionally neglected by many policy makers who pay lip service to the enormous performance of the people who feed the country.

For these reasons, Biovision Foundation, together with *icipe*, has supported TOF from the beginning, and will continue to do so in the years to come.

Andreas Schriber
CEO, Biovision – Foundation for Ecological Development

Celebrating 100 issues of TOF

With this issue, *The Organic Farmer*, one of the principal agricultural magazines in Africa, celebrates its number 100 publication since inception.

TOF issue number 100! This translates to 800 print pages with information for farmers and about farmers which we have published during the more than eight years the magazine has been in circulation. The journey has been on a long and exciting one; from the first issue of 10,000 copies, which we published way back in April 2005, to the current issue number 100 with a print run of 32,000 copies.

Over the years, TOF has made thousands of friends within the small-scale farming community in Kenya, East Africa and beyond, the community of scientists in the country, extension officers from the Ministry

of Agriculture and even in colleges and schools. To date TOF, as farmers popularly refer to it, is very well known all over the country (see insert).

Huge feedback

The hundreds of articles and pictures, through which TOF used to pass key messages on organic farming, were by far not a one-way information transfer channel. Farmers did their part by sharing tips and ideas for articles as well as reacting and or responding to letters, phone calls, e-mails and SMS. We are thankful for the huge feedback

from farmers. For us working with the farmers is inspiring and motivating. The production of magazine, however, requires teamwork. Lucy Macharia, the administrator, and James Wathuge, the designer, contributed tremendously to the success of the magazine.

We wrap up this short introduction with a word of thanks to the publisher, *icipe*, and Biovision Foundation for Ecological Development in Switzerland, for tirelessly shouldered the cost of production and distribution of *The Organic Farmer* magazine all these years. **Editors**

New *icipe* Director-General

The *icipe* Governing Council has appointed an Ethiopian scientist, Dr Segenet Kelemu, as the new Director-General of *icipe*. *Page 8*



Courtesy: icipe

Grow bulb onions the right way

TOF - Bulb onions are one of the fast moving market gardening vegetables crops in the market today. The onions can earn farmers very good returns if they are grown and managed. Unfortunately many Kenyan farmers tend to concentrate on common vegetable crops such as tomatoes, cabbages and *sukumawiki*, which often flood the market. Another problem is the curing of onions. Many farmers are always in

a rush to harvest and take the onions to the market but forget that they require proper drying and curing to stop rotting during storage. This rush is to blame for the low quality of local bulb onions. As a result most of the onions grown in Kenya are of low quality compared to those imported from Tanzania. This is one reason why the local onions cannot compete in the market with imported ones. *(Page 3)*



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Parasite control improves animal health

Deworming livestock at the beginning and end of every rainy season improves their health and productivity.

Peter Kamau | Deworming is a big challenge to many farmers. Images of cattle, sheep and goats in a very bad shape, are a common sight on most farms in the countryside. One reason for this is that farmers do not associate the poor health of their animals with worm infestation. Indeed, farmers will often consult a veterinarian thinking a disease has affected their animals. The main types of worms in livestock include roundworms (nematodes) and flat worms (platyhelminthes), like flukes and tapeworms.

Symptoms of worm infestation

Young calves are especially prone to worms, because of their weak immune system. The common symptoms include frequent diarrhoea and weak appearance. Adult cows, affected by worms and internal parasites, reduce milk production and are susceptible to anemia, and can even die in severe conditions. As the rainy season sets in, worm infestation in domestic animals tends to increase, interfering with their normal growth and milk production.

To prevent worm infestation, farmers have to deworm their animals at regular intervals and maintain proper animal management through feeding and even hygiene.



An animal liver damaged by worms.

It is difficult to completely eradicate parasites in animals, but they can be managed in a way that does not affect the animals' health so much. The secret to good parasite management is to avoid high infestation and to strengthen the vitality and resistance of your animals.

Understand the worms to fight them

The animals mostly pick worms when grazing during the wet season, since these parasites find the right conditions that enable them to multiply.

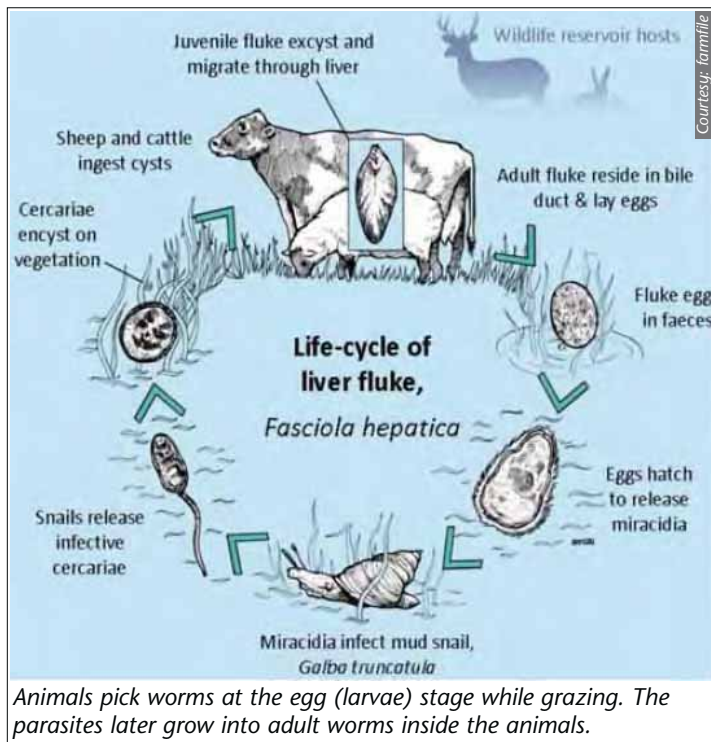
Farmers should therefore know the life cycles of each internal parasite in order to control them more effectively. One fact that farmers should know is that it is only the adult worm that lives in the internal organs of the animal, grazing cattle pick the worm larvae with the grass; the larvae then grow into adult worms inside the animal.

Coccidia, intestinal worms and tapeworms mainly reside in the intestines, lungworms live in the lungs, liverflukes are found in the liver while brain worms in sheep and goats live in the brain. Once the worms produce eggs, the eggs are passed out with animal dung. When there is sufficient moisture, the eggs develop into tiny infectious larvae that survive in pastures until they are taken up by the animals while grazing.

Grazing management controls worms

Good grazing management can go a long way in worm control. Farmers can take the following measures to reduce worm infestation:

- Divide the pasture into four or five paddocks and allow animals into each paddock at a time through rotation. Graze each paddock for about a week and let it recover for one month.
- Graze the young calves first in each paddock before allowing the adult cows into the paddock; this reduces worm infestation in calves.



Animals pick worms at the egg (larvae) stage while grazing. The parasites later grow into adult worms inside the animals.

- Do not overstock or overgraze the paddocks.
- Fence off swampy areas to prevent animals from drinking water in such areas to reduce liverfluke infestation.

Deworming

Farmers should buy the right dewormers to control worms in their animals. To reduce the incidence of worm resistance to dewormers, it is important to use different deworming drugs in each cycle of deworming. The right dosage is important (follow the label!); under dosing leads to resistance and parasite survival. Always ask for assistance and the services of a qualified veterinarian to advice you on the most effective dewormers in the market.

Natural dewormers reduce worm infestation

Farmers can also reduce worm infestation in their livestock by use of natural dewormers. Herbal dewormers are not as fast acting as synthetics ones, but they can be useful in reducing worms in livestock if given

regularly and over a long period of time. The most common include:

- Pyrethrum extract "pymac" (mix with animal feed at all times),
- Minced garlic (250g in 4 litres of water given at 2 litres per day, always after milking!)
- neem (neem cake, seeds oil or bark mixed with feed)
- Artemisia spp. (wormwood, use extracts)
- Pumpkin seeds (or seed extracts),
- Wild ginger (mince 50g of aerial roots and give to cattle sheep and goats).
- Albinzia *anthelmintica* -mwowa or *kyalundathi* in Kikamba (soak 500g of chopped bark in 3 litres of water overnight, sieve and drench).



A bundle of tapeworms.

The Organic Farmer is an independent magazine for the East African farming community. It promotes organic farming and supports discussions on all aspects of sustainable development. It is published monthly by **icipe**. The reports in the *The Organic Farmer* do not necessarily reflect the views of **icipe**.

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Layout In-A-Vision Systems (k), James Wathuge

There is good market for bulb onions

A lot of fresh bulb onions in Kenya are imported from Tanzania because there is a limited supply in the country.

Agnes Ndegwa* | Bulb onions are the third most important vegetable crop in Kenya after *sukumawiki*, cabbages and tomatoes. Onions grow in a wide range of climatic conditions. However, they do better in warmer parts of the country (mainly in Loitokitok, Kibwezi, Taveta, Meru-Mitunguu, Nyeri-Kieni, Kisii and Bungoma). This means that farmers in quite many parts of the country can grow them for sale. A lot of bulb onions are also imported from Tanzania because Kenyan farmers cannot cope with the demand.

There is therefore a good market opportunity for farmers who would like to venture into bulb onion production. Below are some of requirements for a successful bulb onion production.

Climate: Bulb onions can be grown in most parts of the country, but they grow best below an altitude of 1900m. The right temperature for bulb onion production is between 15 - 30°C with rainfall ranging between 500-700mm. The onions require a dry period at maturity and harvesting.

Soils: Bulb onions grow well in fertile, well-drained, friable (soft) loam soil with a high level of organic matter and good water holding capacity. The soil pH should be between 6.0 and 7.0.

Bulb onion management

Bulb onions can be grown from seed sown in a nursery and then transplanted or through direct planting in the shamba.

Nursery establishment: Onions are first planted in a nursery. A good site for the nursery should be identified, preferably on a flat ground that is protected from wind and near a permanent water source. In wet areas with heavy soils, it is advisable to raise the seedbed. Make a 1m wide bed. The length of the bed can be as long the area intended for planting.

Sunken beds: In areas with limited rainfall, a sunken bed can be prepared. Well-composted manure should be applied on



Courtesy: sparkpeople

the seedbed at a rate of 2kg per square metre, the manure should be worked into the seedbed soil. Make the seedbed free of weeds and harmful soil organisms by covering it with a plastic sheet for three weeks (this is called solarisation). Remove the plastic sheet after this process and tread the soil to make it firm.

Planting seeds: Rake the soil to a fine texture and then water it a day before planting the seeds. Make tiny furrows about 15cm apart. Plant the seeds at 1-2cm depth and cover lightly with the soil and then compact the soil firmly. On the seedbed you can then place light straw, which can be removed after seedling emergence. Keep the nursery weed free of weed otherwise the onions cannot grow well. Transplant the seedlings after 6-8 weeks when the seedlings are about 15 cm tall. The seedlings can be stored for up to 3 weeks before transplanting. Do not wet the seedling before transplanting them.

Transplanting: Seedlings should be transplanted at a spacing of 30cm x 8cm x 3cm below the soil surface. Apply manure fortified with rock phosphate or any other organic fertilizer in the planting furrows and mix thoroughly with the soil before planting. Plant the seedlings and water them immediately to remove air pockets that cause the seedlings to dry and die. Apply any organic fertilizer for topdressing with tithonia and comfrey extracts and add more compost. Fertilizer with too much nitrogen (for instance

urea) should be avoided as it can lead to late maturity, development of double bulbs and poor standability.

Direct seeding: If you want to plant bulb onions directly in the *shamba*, ensure you do this on raised beds. Raised beds ensure better drainage and prevent soil compaction. They also make it easier to separate the soil from the bulbs during harvest. Each bed consists of two rows of onions. About 5kg of seed are enough for one hectare. The plants are thinned to the recommended density when they attain a height of 15cm. The thinned plants can be planted on another bed specially prepared for this purpose. The raised beds should be at least 1m wide. Add well composted manure and rock phosphate fertilizer applied to enrich the soil.

Direct planting can also be

done without using raised beds by applying manure at 40tons/ha. Tiny furrows, 2.5cm deep and 30cm wide, are made across the field. Apply rock phosphate fertilizer and work it into the soil. Plant the seeds into the furrows and water regularly as the seed grows. Thin the seedlings to leave 8cm between one plant and the next at 4 to 6 weeks. Plant the thinned onions elsewhere at a spacing of 30cm x 8cm (between and within the rows).

Watering: Onions should be watered adequately for proper growth of roots and leaves and ensure bulb enlargement.

Weeding: Light weeding is recommended. Do not heap the soil around the plant to prevent stem rot. Weeding should be avoided towards the end of the season. Ten days before harvesting, one-third of the bulb should be exposed to facilitate bulb and neck to dry and harden. Remove soil gently away from the bulbs. Stop watering one week before harvest to allow the onions to dry.

Harvesting and storage

Bulb onions should be harvested at 5 or 6 months depending variety planted. Harvesting

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Courtesy: sparkpeople



Courtesy: sparkpeople

One third of the bulb should be exposed for bulb and neck to dry.

*Agnes Ndegwa is an agronomist at KARI, Thika.

Why it is important to treat your donkey well

Donkeys are hard working and can improve lives. It's however hard to understand why farmers mistreat their donkeys.

Laura Künzig | It was truly unusual to watch a parade being led by donkeys and the Administration Police Band. It showed how much the people of Limuru respect their animals. "We respect our donkeys because they win our daily bread", says Steven Thiga from Limuru. He is one of the many donkey owners who came to celebrate the National Donkey Day on May 17, 2013. His donkeys transport potatoes to the market, bring grass for the cows and pull the cart with peoples' load who pay for the service. Thiga treats his donkeys well and he knows how to work with them.

- To show them in which direction he wants them to go, he uses a stick or a whip for indication, but he does not hit them. He waves the stick from behind but never on their head which would make them head-shy and difficult to work with.
- Donkeys like dry places to sleep at, otherwise they will get problems with their legs.
- They need to be well fed; providing enough water every day is crucial for the health of the



Well kept donkeys: The harness is made of soft materials that do not hurt the animal or rub its body sore.

donkeys. Donkeys need breaks and time for resting so that they are not being overworked.

- In Limuru, the veterinaries from KENDAT explained in

among other issues, how to use a rope and how to approach the donkeys. Since they cannot see clearly in the front and in the back, the best way to approach

them is coming from the side. The donkey owner should be patient; this builds trust as the donkey gets used to the owner. Donkeys should never be beaten. ■

Animal cruelty is forbidden by law

All animals including donkeys in Kenya are protected by the Prevention of Cruelty to Animals Act. Therefore, cruelly beating, kicking, mal-treating, over-riding, over-driving, over-loading, torturing, infuriating or terrifying any animal is for-

bidden. Anyone who mistreats animals through starving, underfeeding, denying water, abandoning, keeping them in a bad environment, denying veterinary treatment, poisoning or injuring animals "shall be guilty of an offence of cruelty [and]

liable to a fine, a term of imprisonment, or both."

(Prevention Of Cruelty To Animals Act, Revised Edition 2012, Chapter 360, pp. 5f. (Prevention Of Cruelty To Animals Act, Revised Edition 2012, Chapter 360, pp. 5f.

Common but false myths concerning the treatment of donkeys

Myth 1: If a donkey gets sick it will die, no matter what you do to it.

Fact: If a donkey is sick, like any other animal it requires medical attention from a qualified Animal Health practitioner - either a vet or animal health technician. In addition, it needs to be fed well and given plenty of water to replace lost fluid. In a short while, it will be healthy again.

Myth 2: If a donkey is carried on a vehicle it will laugh itself to death.

Fact: Although donkeys are used as transport animals, there is no relationship between a donkey being carried on a vehicle and death. The most important thing is to make it as comfortable as possible during transportation to prevail any stress.

Myth 3: A donkey will die if it does not work hard every day.

Fact: Although donkeys are hard working, they should not

be overworked. For maximum output, donkeys need enough rest, adequate feeding and watering. When not at work, it is important to remove the harness from the donkey.

Myth 4: If you get in contact with a donkey's dung you will get tetanus.

Fact: Tetanus is caused by bacteria, which can be found in any animal's dung and in the soil. Because of their tendency to roll on the ground, donkeys often contract tetanus if they have open wounds, which get in contact with the dung or the soil. Wounds of animals and people should therefore be treated, covered and kept clean. People and donkeys should be vaccinated against tetanus.

Myth 5: A donkey should be buried with a 100 Shilling note in its mouth as a reward for its hard work when it was alive.

Fact: The best way to reward your donkey is to use the money when

it is still alive. A great reward for the donkey is to ensure that it is treated and handled well.

Myth 6: A donkey can only feed at night because during the day it is supposed to be working.

Fact: Working donkeys use large amounts of energy in the course of their working day. They therefore need good food. Like any other animal, they also require enough time to sleep and rest at night. They can be fed at any time of the day, especially in between working periods or when they have finished working.

Myth 7: If you don't work a donkey hard it will become hostile and unfriendly.

Fact: A well cared for donkey is friendly and a nice companion at work. On the contrary, beating, poor harnessing and overworking makes the donkey unfriendly and hostile.

Myth 8: Every new donkey has to get wounds before it gets used to its work.

Fact: Wounds make the donkey uncomfortable and difficult to work with. It should therefore be trained to take on new tasks instead of being forced with beating and caning.

Myth 9: If cows are kept in the same enclosure with donkeys the cows will become infertile.

Fact: Livestock are social and blend naturally when they live together. Infertility is caused by factors such as malnutrition, not by donkeys.

Myth 10: If a donkey gets blind, grind a glass bottle and put the glass powder in the eye. It will clean the cloudy cornea to heal.

Fact: Eye problems may be caused by dust, pollution or flies. At the earliest sign of discharge, redness or cloudiness, take the animal to a veterinary officer for treatment. Delay may worsen the condition and the donkey may become blind. Broken glass will puncture the eye leading to a painful blindness.

Grow passion fruits well and earn more

Despite its attractive prices, farmers have abandoned passion fruit farming in many parts of the country.

Joan Mukiri Passion fruits are always in demand, regardless of the season they are grown. One of the reasons for this is their scarcity. Very few farmers are able to produce passion fruits for fear of fungal diseases and pests. Before venturing into passion fruit production, farmers need to arm themselves with adequate information on general management of the orchard, including disease and pest control measures.

There are two major varieties of passion fruits that are popular with consumers in the market:

- *Passiflora edulis var flavicarpa* (yellow passion): This variety grows in the cooler highland areas, produces yellow fruits and is grown mainly for the supply of fresh fruits.

- *Passiflora edulis var* (purple variety): The variety does well in coastal strip. It is purple in colour and is mainly used for processing fruit juice and for fresh market.

Farmers who have tried passion fruit production in many parts of the country have been unsuccessful due to attack of the crop by *Fusarium* wilt fungal disease and aphids. This is because farmers have continuously ignored advice from agricultural experts on the use of certified planting material and pest control. To reduce the incidence of diseases and

A well-done trellis system in a passion fruit plantation.

There is enough space between the rows for application of compost to the plants since passion fruits do much better in fertile soils. Take care of the posts and the wire, since you will need them during the rotation cycle. Passion fruits should not be grown for more than 2-3 years on the same plot.



Courtesy: Forbes

pests in the purple variety especially, grafting with the yellow variety is recommended – with the yellow variety as rootstock (lower section of the graft). The following are the requirements of passion fruit production.

Climatic requirements

Passion fruit requires fertile, well-drained soils that are not acidic (pH 5.5 to 7). It also needs a moist climate with at least 1000 mm of rainfall per year. The purple variety requires about 1600mm of rainfall and prefers moderate temperatures between 18°C and 25°C. The yellow type can do well in areas with temperatures of between 25°C and 30°C.

Land preparation

Passion fruit plants, with their deep root system, require proper land cultivation. Deep

ploughing and harrowing is necessary due to hard pans in the soil. Planting holes of 45 cm x 45cm at the spacing of 2 m x 3m for hand cultivation and 3m x 3m for mechanized cultivation is recommended at least 3 weeks before transplanting. When digging the planting holes, the topsoil should be kept on one side of the hole while the subsoil is kept on the other. Mix one debe (10 kg) of farmyard manure with topsoil and refill the hole with the mixture.

Planting

The soil around the seedling should be made firm but not too firm. The positioning of the seedlings has to be similar to that in the nursery. After planting, the grafting point should not have any contact with the soil to avoid fungal infection. The seedling should be irrigated

to ensure quick rooting and shooting of the plant.

Trellis system

A trellis system is a line made to support climbing plants. In passion fruit planting, the system should be erected immediately after planting. Posts are placed at spacings of 6 m in line with the passion fruit, thus alternating one post with plants (this means that a post is placed after every two plants).

Posts should be dug about 40 cm deep; before placing them into the soil, they should be treated with a suitable chemical to prevent termite attack. The end-posts should be anchored firmly in the ground. Running along the top of the post is a wire. Use an 8-gauge wire for this purpose (farmers are advised to use coated wire). ■

Maintenance of passion fruit plantations

Soon after planting, the young plants are tied to training sticks till they reach the wire at the top. Only two vines should be allowed to grow, remove weaker vines. When the vines reach the wire, the two are wound carefully around it in opposite directions. Secondary shoots appearing along the wire of the trellising system must be left and the other pruned.

Pruning and fertilizer

Old unproductive shoots and deadwood must be removed. Secondary shoots also need pruning when they are about to reach the ground level. The lateral shoots which bear the fruits should be left to hang down freely from the wire and



Passion fruits are sensitive plants. They need adequate sun and air, which helps in ripening prevent the outbreak of diseases.



Courtesy: Callinycrative

the entangling tendrils need to be cut off to allow free air and light penetration.

Removal also helps reduce disease and pest incidence. All equipment used for pruning should be disinfected to prevent the spread of viral diseases.

In organic farming use of organic fertilizer is recommended. Regular application of compost and Fermented Plant Extracts (FPE) increases yields and helps to control diseases and pests. To avoid the build-up of soil-borne diseases and pests, passion fruits

should not be grown for more than two years on the same piece of land.

In the next issue of TOF, we will provide more information on the most common diseases that affect passion fruit production and provide measures farmers can take to control them.

"Tips from TOF have improved my livelihood"

Jotham has learnt fish farming, dairy goat keeping and value addition which have helped him increase his income.

Alfred Amusibwa | For many years, Jotham Egadwa and the members of Jiinue Self Help Group have been receiving copies of TOF magazine as well as training provided by i-TOF project. Jotham's farm in Wodanga is a model organic farming farm. The industrious farmer is a good example of a farmer who has acquired knowledge and skills that have changed his life. "A wealth of farming practices, techniques, new ideas and proper crop management have featured in TOF magazines that have been produced over the years," says Jotham. "Many of them have enabled me improve my livelihood; through improved soil fertility, and especially my income generating farming ventures".

Jotham is eager to reveal how he discovered new ideas, and eventually transformed them into profitable agribusiness enterprises, courtesy of TOF:

Fish Farming

To start off, Jotham discusses his fish farming project for it earns him a handsome income. This topic has been adequately



Jotham Egadwa

tackled in a number of TOF issues. With some additional trainings, he easily ventured into this business. "Fish is nutritious and to my family. I also sell them to generate an income," he explains. Jotham remembers how he read, reflected on and put into practice the tips he got from TOF about fish breeding, management, harvesting, storage and marketing. He urges all farmers interested in fish farming to refer to these articles as "they will enable them to practise fish farming successfully," he advises.

Dairy Goat farming

Jotham likes milk and especially goat milk. When he read some articles on goat farming, he decided to buy some dairy goats. "I managed to buy four dairy goats, since I realized that dairy goat keeping is a good business". Today, he has all the skills one requires for proper goat management. He milks two dairy goats and he really appreciates the benefits thereof because goats' milk is sweet, nutritious and fetches good money, compared to that of cows. From his goats, he carefully collects the droppings and uses them for making compost. Recently, he sold three offsprings that fetched him good income. From this sale, he invested in other farm activities.

Soil fertility

Since TOF has written so many articles on how to improve soil fertility, Jotham has used these ideas to prepare compost, liquid fertilizers and plant teas. "My crops have improved, I realize better vegetable yields, for instance sukumawiki, and even my bananas are doing better than before due to organic farm management," he adds.



Jotham Egadwa's fishpond provides his family with healthy protein.



A good model of a Mandala garden. (Photos: Alfred Amusibwa)

Bee keeping

Another topic from which Jotham has benefited immensely is beekeeping. He got the idea and, backed by training from the i-TOF field officer, bought some beehives. "Now I sell the honey at farmers' events," he says. Going round his farm, one can understand why he praises TOF and its slogan "Farming is a business". He adds: "Learning new methods and topics such the need for diversification is important for us small-scale farmers".

Like other innovative small-scale farmers, Jotham has discovered that his products can

fetch a better price if he processed them. "I think value addition is the way-out for us small-scale farmers," he counsels. Together, with other members of his group, they have begun to process soya beans. They produce soya milk, soya flour, soya chapatis and other products. They sell them during farm functions like field days, World Food Day and exhibitions where they fetch good money.

A long wish list to *The Organic Farmer*

Jotham is thankful that TOF was an eye opener and assisted him with valuable ideas and tips, this way increasing his income. He proposes quite a long list of topics he would like to see featured in future editions: Credit and financial issues, certification of organic products, soil testing, human health and infectious diseases. He would like to get more health information on medicinal trees, their traditional values and their uses such as in disease control.

For animal health, TOF should focus on signs and symptoms of diseases and how to control them. He urges the TOF crew to keep up the good work and continue supporting farmers with knowledge, "because it feels so good to be empowered."

Continued from Page 3

should be done under dry conditions. If under irrigation, it is important to stop watering 7 to 10 days before harvest. Onions are ready for harvest when the tops begin to dry up and fall. Pull out the bulbs by hand and allow them to dry. Clip the roots and cut off the tops, leaving at least 1 to 2 inch stem on the bulb. The onions should be kept in cool, dry preservation and separated for preservation and to prevent bruising. Sorting should be done to remove damaged and diseased

bulbs. Bulb onions need curing for 2 to 3 weeks before storage. One acre of bulb onions can produce 7 to 10 tonnes.

Grading: Onions intended for



fresh market are graded according to size (large, medium and small) and packaged in net bags. Onions intended for dehydration should be sorted to remove the damaged and badly shaped ones.

Storage: Bulb onions should be stored in mesh bags (net bags) or spread out on a mesh or screen to allow adequate ventilation. Storage should be in well-ventilated sheds. Well-cured onions can be stored for up to 200 days.

In one of our future editions, we will write about diseases and pests that affect bulb onions and look at how farmers can control them.

Banana diseases pose a big threat to production

We have a big problem with banana plants like *Musa nana*, *Musa sapientum* and *Musa paradisiacal*. These plants are going to disappear because of one regional diseases. I would like if possible to get help from you.

Gracien Sivanza, Democratic Republic of Congo

There are two diseases that currently have a very bad impact on banana plants in the East African region. One of them is the Banana Xanthomas Wilt (BXW); the other is called the Banana Bunchy Top Virus (BBTV). Although we cannot



This banana plant is badly damaged by the Banana Xanthomas wilt: The leaves are dry, the fruits become hard.

be able to tell what particular disease may have attacked your bananas, the two are the most serious diseases as shown below.

Banana Xanthomas Wilt (BXW)

BXW causes the leaves of the plant to dry. The fruit ripens prematurely and is uneven and becomes hard. Furthermore, a yellowish fluid develops in the trunk of the tree. The wilt is spread by insects and infected hoes. The disease does not cause harm to animals and humans.

So far, no cure has been found for the disease, but there are some methods to prevent the spreading of the wilt. All infected plants should be dug up, chopped into pieces, burned and buried.

Field sanitation

It also helps to remove the male bud immediately the last fruits have set. It is better to use a forked stick and break the male bud off rather than cutting it with a knife, because the knife will be infected and carry the disease to other plants. The male bud usually attracts insects that will spread the disease. Debudding does not make a plant immune to the wilt but it will diminish the possibility of infection.

Also other animals like cows can infect healthy plants when moving around. They should therefore be tied to prevent them from reaching the plants.

Tools should be disinfected before they are used on another plant. This can be done by severely exposing them to fire. These methods are labour intensive, but they have proven useful in eradication of the disease in the fields of small-scale farmers and they prevent the disease from spreading. Even a heavily infected field can be replanted with bananas after a period of eight months. Meanwhile, non-cereals like cassava, potatoes or beans may be planted there, but should be monitored regularly. Chemicals cannot control the wilt, and resistant varieties have not been found so far.

Banana Bunchy Top Virus (BBTV)

BBTV is spread by aphids and stunts and it kills the banana plants. The first symptoms are dark green streaks in the lower leaves. Later new leaves will come out more narrow and generally the plant will be stunted.

It is difficult to recognize the disease in the beginning; therefore regular inspection is the first preventive measure. Infected plants must be destroyed early by digging them up and burning



A banana plant affected by Banana Bunchy Top Virus: The leaves grow as a bunch (photo above). Below, a banana affected by aphids which spread the virus.



them. To kill the aphids, a spray of soapy water can be used and sprayed especially on the upper petioles and the unfurled leaf. Also here the disinfection of tools and general field hygiene are crucial and an efficient way of preventing the disease from spreading.

When all diseased plants are removed from the field, it is possible to replant. Seedlings should be purchased from a trusted distributor to ensure the new plants are virus free.

Communication and cooperation

However much a single farmer can take care of their plantation and keep it wilt and virus-free, it is crucial that farmers, organizations and the government work together to eliminate these diseases. First of all, farmers should educate their neighbours on the diseases and the importance of preventive measures. As much as organizations, in cooperation with governments, are distributing clean tools and seedlings, it is important that farmers themselves remain keen to keep those diseases manageable. **Laura Künzig**

When chickens stop laying eggs

My chickens stay for a long period of time before they start laying. What could be the problem?

Many poultry farmers particularly those keeping chickens for a long time become puzzled when the hens suddenly stop laying eggs. This happens at times when the birds appear quite healthy. This phenomenon is called moulting. Moulting is process of shedding or renewing feathers. During the moulting period, the reproductive system of a bird comes to a complete rest from laying eggs. The bird builds up its body reserves of nutrients.

Moulting is a natural process where the chickens shed their feathers and grow new ones to protect themselves from cold or to maintain their ability to fly through growth of new feathers. Under normal conditions chickens may moult once, twice a year or rarely once in two years depending on breed and con-

ditions under which they are kept.

The main factors that bring about moulting are physical exhaustion and fatigue, completion of laying cycle (birds lay eggs for certain period of time)

Most poultry farmers lock up their chickens in their sheds to restrict movement especially after planting their crops at the beginning of the rainy season to prevent them from damaging the young crops. The restriction is not accompanied with adequate feeding of the birds.

The birds' conditions deteriorates to a point where the nutrients they receive cannot support egg production because the little



feed available to the chickens is used for body maintenance and nourishment of their feathers. Feathers contain proteins and are more easily grown when laying stops because of an unadequate protein for both egg laying and feather production. Chickens therefore require adequate and good quality feed to replace the feathers and build up their body condition to start laying eggs again. **pk**



Dr. Segenet Kelemu

icipe has a new Director General

Dr. Segenet Kelemu an Ethiopian scientist has been appointed the new Director General of *icipe* taking over from Prof. Christian Borgemeister, who has held the position for the last eight years. Dr. Kelemu, the first woman to head *icipe*, is the fourth Director General to head the institution since it was founded by renowned Kenyan scientist Prof. Thomas Odhiambo in 1970.

Dr. Kelemu's appointment was officially announced by Prof. John Picket, chairman of *icipe* Governing Council, "We are extremely confident that Dr. Kelemu will ably advance the organisation's overall mission of improving food security and the health of the people in Africa. She has immense experience in agricultural research, capacity building and in managing research for development. Indeed, over the past two decades, her own research and that of teams under her leadership has contributed immensely to addressing a variety of key problems facing agriculture in Africa, Asia, Latin America and North America," said Prof. Picket.

Before her appointment, Dr. Kelemu was the Vice-President for Programmes at the Alliance for a Green Revolution in Africa (AGRA). Previously, she has worked at the International Livestock Research Institute (ILRI) as a Director of the Biosciences, eastern and central Africa (BeacA), Senior Scientist and later Leader of Crop and Agroecosystem Health Management at the International Centre of Tropical Agriculture (CIAT) in Cali, Colombia and as researcher at Cornell, Montana and Kansas Universities in the US.

Information through radio

Radio has the widest reach in rural areas compared to any other medium. It is a vital tool for information dissemination, knowledge sharing and creating linkages between farmers and research institutions.

John Cheburet | Five years ago, *The Organic Farmer* magazine started *TOFRadio* as a way of reaching a wider audience with its message of environmentally-friendly farming practices. Simply put, the farmer uses farming methods that take care of the environment so that the environment can continue to support farming for food and for the market.

The magazine was already making information accessible to farmers at a time when funding for extension was at an all time low, and crucial farming information was held up in the archives and libraries of research institutions. *TOFRadio* was conceived and seen as a bridge between farmers on the one hand and scientists on the other, utilizing the print media to expose farmers to practical, easily understandable and applicable information on new technologies developed by research institutions.

Why radio?

In order to reach more farmers, especially in rural areas, *TOFRadio* program was born. The program is produced and broadcast in collaboration with the Ministry of Agriculture through the Agriculture Information Resource Centre (AIRC) and aired on Kenya Broadcasting Corporation (KBC) every Thursday at 8:15pm. *TOFRadio* has also expanded to Milele FM, where it is aired every Tuesday at 8:30pm, giving farmers more and varied content.

TOF and TOFRadio

In May 2007, TOF made a trial run of a radio programme; they of course mentioned the magazine and the address where to get it. The response from farmers was immediate. TOF had to increase the circulation from 14,000 to 16,000 copies to meet the demand. The same happened in July 2008, when *TOFRadio* started officially. TOF had to print 2,000 copies more, bringing the total number of copies printed to 18,000. There is significant synergy between radio programs and the magazine, which advertises the radio programs in every issue.

At face value, it may seem that there is little connection between radio and farming. In Kenya, radio is known to be a news and entertainment medium, with more focus on the entertainment through music and live talk shows. However, the same medium is a tool for empowerment as it is a trusted source of information that shapes opinions and attitudes, especially in rural areas where majority of

TOFRadio



KBC, Thursday 8:15pm

Milele FM, Tuesday 8:30pm

farmers reside. In farming areas, most families own a radio, the affordable transistor radio.

Educational value

Beyond this, radio has educational value and has been proved to be a catalyst for rural development. As experienced by *TOFRadio*, farmers listen to stories of other successful farmers and apply the information they get from the programs to do the same, from formulating rations for their indigenous chicken to improving the health of their soils through the proper use of farmyard manure.

Interactions

The story of *TOFRadio* is unique because of the supportive role it plays to the TOF magazine. Through *TOFRadio*, listeners learn about TOF magazine, and through TOF magazine farmers know when to listen to their favourite farming programme. Our intention is to build on this proven complementarity of the print and the broadcast media in order to deliver a farmers' information package that will enable them to produce more, for domestic consumption and for the market, ensuring the creation of jobs and wealth - and caring for the environment.

Since farmer creativity is at the heart of agribusiness, *TOFRadio* is looking to the next farmer innovation frontiers that will help shape farming and take it to the next level.



farmers forum

0717 551 129 / 0738 390 715

Exhibition: The Vi Agroforestry project in Trans Nzoia County is inviting farmers to an open learning event to be held on 17th to 19th September 2013 at the Vi Agroforestry farm in Kitale. The theme of the event is "Sustainable Land Management for Productivity, Agribusiness Development and Climate Adaptation." All farmers are invited. ■ Matthew Limo, Farm Manager.

Silage tubes for sale: We have silage tubes for sale to interested farmers. Star Rays Centre, Nangili Corner along Eldoret-Kitale road. Training for farmer groups also available. William Makechi 0721 245 443

Ducks for sale: I have 20 ducks for sale. Contact ■ Evans Musuko 0723 342 969

Sunflower for sale: I have 1 acre of sunflower ready for harvest. Interested buyers call 0716 737 635.

Beeswax wanted: I need 2kg of beeswax. Call Ojuma David 0724 320 966

Hydroponics nutrients wanted: I am looking for a place where I can buy the hydroponics nutrients (N, P, K, Mg, Ca etc). Kindly indicate the shops available and locations. ■ Denoh Tosh

Grape cultivars for sale: Available in Dodoma, Tanzania in abundance. ■ Nicholas Muyale

Cereals wanted: I want to start a cereals business. Anyone who can supply me with maize, beans, groundnuts, ndengu, rice, eggs? Send me your contacts. ■ Rowland W. Simiyu

Calling farmers from Meru: I am for farmers from Meru who have land and reliable water sources or who live near rivers. I want to give them a chance to change their lives. We give the seeds, you grow for the market. I will provide extension education and management and enable you to make up to Ksh 100,000 every month. Those interested inbox me so we can start from September 2013 onwards. ■ Musso II.

Chickens wanted: I need chickens from Chinese store. ■ Ham Bill.

Eggs for sale: Anyone who needs to be supplied with 20 trays of yellow yolk eggs per week in Eldoret area? Contact me. ■ Elijah Koskey.

Vanilla wanted: I need vanilla, any lead where I can get it? ■ Waswa Moses Baraka