

# The Organic Farmer

The newspaper for sustainable agriculture in Kenya



Nr. 16 August, 2006



Through tiny holes in these pipes water flows directly to the plant roots (TOF)

## Every drop for the plant

*The increasing demand for water by agriculture calls for more efficient use of this resource – for instance through drip irrigation.*

### **Philomena Nyagilo**

Water is a crucial element vital to life on earth. Every farmer knows quite well that if there is no water, there are no plants growing – and there is no food. The water taken up by the roots of a plant is combined with nutrients from the soil and carbon dioxide from the air to make food, while some water is lost to the atmosphere through a process usually called transpiration.

Water is therefore an essential resource to the farmer. Its management to a great extent decides how successful a farming enterprise is or can be. Smallscale farmers in Kenya depend on rain to satisfy the water requirements of their farms. Unfortunately, this rainfall is often low, erratic and unreliable. Since water

availability is the limiting factor to plant growth, farmers have to devise other ways to minimize the risks of rain-fed agriculture.

More and more farmers have become aware of these problems and are installing irrigation systems on their farms. The most efficient system of irrigation is drip irrigation, which we feature in this month's edition of *The Organic Farmer* (see pages 4,5). In the next issues we will explain methods of water conservation.

## Dairy goats in great demand by local farmers

After our story on dairy goats in September last year, many farmers have written to us requesting for information on where they can buy the goats. This clearly indicates that the demand for the goats is very high among our farmers. The problem is that very few farmers have managed to get the goats for breeding purposes. Government agricultural institutions do not have any for sale either. Except for a few places such as Nakuru District, where farmers have come together to start a breeders' association, there are no organized dairy goat breeding associations in the country.

It is easy to understand why many farmers want dairy goats. They are easy to handle, while their milk is highly nutritious. On page 2 of this issue, we give you more information on how to take care of them. (TOF)

## Dear farmers,

*In this newspaper, we have laid emphasis several times on the need for farmers to be more creative in order to remain competitive and get good returns from their farms. It appears, however, that many farmers have continued to practice farming as they have done in the past.*

*If you look around your neighbourhood, you will find farmers growing the same type of crops they grew 10 years ago. This is regardless of whether these crops give them the desired yields and income. Take for example farmers in the maize-growing areas of the country; in these regions, you will find farmers who have grown maize in the same field for the last 30 years. As you have read in this newspaper, this practice wears out the soil and thus it cannot support a good harvest.*

*Another practice that is not wise is "copy-cat" farming. If one farmer grows tomatoes and makes good returns in a particular season, every farmer in the neighbourhood will switch to tomato growing. What happens is that all these farmers will harvest and deliver the tomatoes to the market at the same time. This flooding of the market with the same product lowers its demand, and in the process pushes down the price. Agricultural product markets are very dynamic and prices change every day. It takes a clever farmer to understand the market trends and only grow what is likely to sell at a particular season. This is the only way farmers can survive in this market environment.*

*Diversification on the farm has many advantages if it is carried out in a planned way. Different crops take different nutrients from the soil. Crop rotation helps to balance the various nutrients needed to improve soil fertility and maintain plant health. In mixed farming, where livestock and crop production are practised, farmers have the advantage of the livestock converting crop residues into meat and milk.*

*What we are saying is that Kenyan farmers have enough resources at their disposal. If these resources are well planned and utilised, it is possible to greatly improve the overall productivity of the farm, including income.*

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**MY OPINION**

While it is obvious that population increase is to blame for increased sub-division of available agricultural land, I believe the trend is not good for the development of agriculture in the country. The subdivision has led to acquisition of unviable agricultural units that cannot help improve food production. The government is to blame for this problem. Most of our farmers have only been trained to produce food. No effort is made to impart knowledge on value addition which could help create jobs and reduce pressure on land. A major overhaul of the agricultural sector is needed to change the attitude of the farmers for the benefit of the country.

*Peter Karimi, a farmer in Nyeri*

**The Organic Farmer**

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**Layout**

In-A-Vision Systems(k)

# Dairy goats need proper care

*Proper management of dairy goats can help improve their health and productivity.*

**The Organic Farmer**

Dairy goats require a high standard of management for them to give good returns to the farmer. Lack of knowledge on goat management is a problem for many farmers. From the many farmers we have visited, it is evident that farmers do not maintain the animals to the expected standards. Most of the goat sheds we have seen are not kept clean the way they should be. Most farmers house the goats in such tiny sheds that the animals do not have enough room for rest and movement. Lack of hygiene also exposes the goats to diseases and pests. Dairy goat owners should observe the following guidelines to ensure the goats are comfortable and productive.

**Housing**

Except for drinking water, dairy goats do not like wet conditions. The ideal home for a goat should be dry and clean. A simple way of doing this is to build a goat house with a raised timber floor that ensures good drainage and allows the free flow of urine and faeces through spaces left in the timber. This waste is valuable crop manure that can be used to fertilize the garden. Always remove waste products twice a day.

Dairy goats are very selective of what they eat and will often not eat or drink anything that is dirty. That is why their water, fodder and feed boxes are located outside the house, to prevent contamination.

Goats are inquisitive and intelligent creatures and should be allowed to see what is around them. It is important that the farmer allows them to go out every day for exercise and to browse on whatever plants are available. One important practice of organic farming is to allow the animals to move freely. No goat will perform well if it is confined in a room.

**Feeding**

The food intake of a dairy goat is higher than that of local breeds. This is mainly because its productivity is also higher. The amount consumed by a dairy goat depends on the individual goat's selective habits. However, if good quality forage is available, it will often eat more. If the forage quality is low, the refusal rate is often higher. It is always advisable to chop green fod-

der into small pieces so that the goats can chew them easily. If more than one type of forage is available, goats will digest the roughage more efficiently. This forage can include potato vines, maize stalks, sorghum, and waste vegetables, among others. Clean fresh water should always be available. A block of salt should also be hung up in an accessible place for the goats to lick.

It is important to know how a goat feeds; it has a big stomach in comparison to its body size, which is what it uses to convert its food into milk. It is more efficient in converting dry roughage into milk than a cow, but it must have good quality clean, dry forage at all times. The amount a goat eats will depend on its size. If there is a lot of waste, either the animal finds the food unpalatable or the quantity is too much. A 45 kg goat should be consuming up to 7% of her body weight, in this case 3.2 kg daily.

A goat should not only eat roughage. It is important to add concentrate to the feed to increase milk production. Dairy meal should be added and fed when it is still fresh. The amount of concentrate should depend on the amount of milk being produced. A small quantity should be fed to a pregnant goat in order to build up her body reserves and help in the development of her unborn kid.

Dairy meal rations should be divided into two, with half being given in the morning and the other half in the evening. A dry female should get 0.5 kg of dairy meal, a female producing 1 litre of milk should be fed 1 kg of dairy meal, 2.0 litres - 1.5 kg, 3 litres - 2.0 kg, 4 litres - 2.5 kg and 5 litres - 3.0 kgs of dairy meal daily.

**Breeding**

One healthy buck (male goat) can serve up to 30 females in a season. It is uneconomical to keep a buck for a whole year to serve only a few females. It is advisable for farmers in one area to form a breeding group and purchase a buck to be used by each member when needed.

**Rearing and milking**

Kids reared naturally stay with their mothers until they are weaned at 4 months of age. Since most farmers purchase dairy goats to provide milk for the household, the kid should be separated from its mother at night and the goat milked in the morning to provide milk for the family.

# Green maize can raise farmers income

*The government fears sales of green maize can interfere with the country's food security.*

**Peter Kamau**

Aloisia Kirembu is a maize farmer with a difference. Unlike many farmers in Wamuini area in the outskirts of Kitale town, she specializes in the production of green maize. She is lucky because there are several springs on her 9-acre farm. This enables her to grow maize on 2 acres all the year round through irrigation. When the green maize is ready for harvest, middlemen from Kitale town, Kiminini trading centre and places as far as Bungoma town flock her farm to buy it.

"Sometimes they come as early as 6 a.m and almost fight over the maize if I do not have enough", she says. The maize is later sold in open air markets and to roadside maize roasters in Kitale town and neighbouring districts.

"Growing green maize is profitable. Sometimes I can make as much as five times the amount of money I would make from dry maize on 1 acre. The yield would be much higher if I grew hybrid varieties, but I prefer growing traditional varieties as they have a better taste that is popular with my customers", she adds. On her farm the first crop is planted at the beginning of January while the second is sown in August. Apart from the 2 acres reserved for green maize, spaces left by harvested maize, cabbages, potatoes or beans are immediately cleared and planted with a new maize crop; this ensures there is always some maize growing as an intercrop on the other parts of the farm to keep her customers supplied throughout the year. She prefers chicken and farmyard manure to fertilize all her crops.

## Post-harvest losses to farmers

Aloisia Kirembu is not alone; many farmers in the maize-growing areas of TransNzoia and Bungoma districts have discovered the advantages of selling vegetable maize. There are several reasons why many farmers are turning to vegetable maize production. One reason is that maize can give much more money when it is sold green than when it is dry. For example, during the May-June season, one ear (cob) goes for Ksh. 5 while in the July-August season when the crop is maturing in most growing areas, it



*There is always a market for green maize*

costs Ksh 3 per cob. A different crop can also be planted immediately after the maize is harvested, which also fetches extra money. The maize stalks are very valuable as they provide fodder for her four dairy cows and also improve the quality of the farmyard manure. It is easy to see why she does better than other farmers. They have to wait until November to start harvesting, since most of them do not sell the maize immediately, they have to wait for 1 or 2 months before they can shell the maize and sell it to the National Cereals and Produce Board, where payments may be delayed for up to 6 months. Those who are not able to wait due to pressing financial needs such as payment of school fees, land preparation or farm inputs are forced to sell at low prices to middlemen.

Unlike dry maize, there is no danger of pest damage and rotting in green maize. Research findings by the United Nations Food And Agricultural Organisation (FAO) show that

Kenyan farmers suffer between 15 – 50 per cent in post-harvest losses. Farmers who sell green maize overcome all these losses and get a maximum return on their investment.

## Money for every cob sold

Japheth Wanyama, a social economist at the Kenya Agricultural Research Institute (KARI) in Kitale says research undertaken by the institute shows that the returns from sale of vegetable maize are much higher than dry maize. He says that at a spacing of 75cm by 30cm, a well tended maize field can produce more than 44,000 maize cobs. Most varieties of maize can produce up to three cobs, which means that the yield can be much higher. Assuming the price of one cob is KSh 5 then a farmer can make up to KSh 220,000 in one acre of maize. He said in practice, farmers earn between KSh 150,000 to 200,000 per acre. Most farmers selling dry maize earn less than KSh 25,000 per acre. However, the production of green maize is confined to farmers whose farms have river frontages where maize can grow at any time of the year. The only other producers are large-scale farmers who can afford to install irrigation systems for maize production. KARI economist Wanyama advises farmers who want to get good returns to practise correct timing and plant early so that the maize matures when the prices are favourable in the market.

## Government controls sale

However, Wanyama notes that the sale of green maize can have serious consequences in the household and on national food security if it is encouraged. He says the good prices can be encouraging to those who could end up selling all their maize, leaving none for their families. "The good earnings from green maize production can be very tempting and there is fear that it can be practised at the expense of national food production", says Wanyama. "But if the money is properly utilized it can really boost income for most of the poor farmers".

This is the reason why the government is forced to impose a ban to control the sale and roasting of green maize from August every year to ensure farmers do not sell all their maize at this time. He adds that many farmers often plant early-maturing varieties which they sell as green maize while the late-maturing ones are later sold as dry maize.

# Drip irrigation is cheap and efficient

*The system brings the water directly to the place where it is needed most— the roots of the plants.*

## Philomena Nyagilo

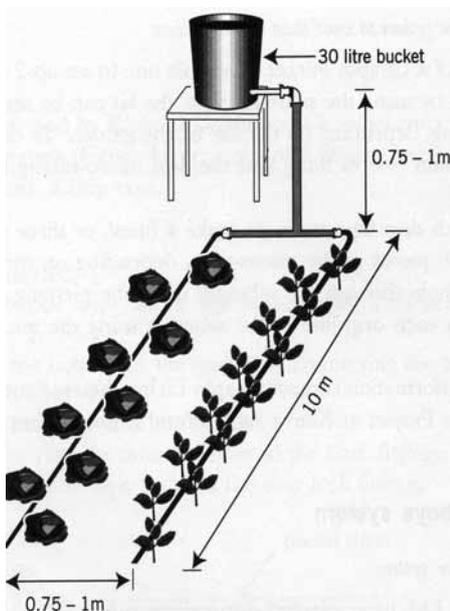
Since Ann Wangare Mwangi, a smallscale farmer in Kiserian, started using drip irrigation, her life has improved. "My water tank has a capacity of 6000 litres and irrigates about 3/4 of an acre", she says. "Last year I irrigated and harvested tomatoes worth KSh 100,000. Drip irrigation is working efficiently".

Ann is not alone with her opinion. Thousands of farmers in Africa and all over the world use drip irrigation to water their crops. Su Kahumbu, for instance, says it very clearly: "You need less water, and drip irrigation allows you to farm 12 months a year".

## Simple operating system

Drip irrigation is an effective system that uses water most efficiently to produce vegetables and other crops during drought periods. Smallscale farmers in semi-arid areas who are already using the system are finding the technology to be very appropriate and suitable for production of fresh vegetables, field and tree crops throughout the year.

**The system is easy to explain:** In drip or trickle irrigation, water is allowed to drip to the soil around the plant roots. Water flows out very slowly in drops from a small-diameter plastic pipe fitted with outlets. This means that water is applied only to that part of the soil



*Bucket drip is the simplest system*

immediately surrounding the plant.

## There is no water wasted.

There are different types of drip pipes. Some have the outlets at a distance of 20 cm or 30 cm apart. You plant the seedlings near the hole in the drip pipe. The spacing between plants depends on your crops. Cabbages need a spacing of 30 cm between the holes, lettuce or onions require 15–20 cm.

## Working efficiently

Drip irrigation allows you to produce crops the whole year – much more compared to rain fed irrigation. It has many other advantages:

- It is very efficient; this is because water soaks into the soil before it can evaporate or run off.
- Water is supplied to the soil around the plant. This means that less water is wasted, while high moisture conditions are maintained close to the roots of the plant. This makes drip irrigation appropriate for areas where water is scarce.
- Drip irrigation is easy to install and can be inexpensive if locally available materials are used.
- It allows you to add soluble nutrients into the water, so they can feed the plants directly. This economises on your fertilizer use, and is called 'fertigation'.
- It gives you a higher yield because you can plant on both sides of the pipe.
- It helps reduce diseases associated with excess moisture on some plants: With drip irrigation you do not wet the leaves. Fungal spores need hours of leaf wetness to develop.
- Drip irrigation can be used in fields that have uneven landscapes.
- It decreases weed populations. Since water is applied close to the roots of the plants, the soil surface between rows is dry, so weeds cannot grow.
- The drip irrigation system does the watering without any labour, reducing costs.

## Costs and installation

Ann Wangare Mwangi bought her irrigation system at the Kenya Agriculture Research Institute (KARI) in 2004 at a price of KSh 37,000. The installation was also done by the same institution at a small fee. However, there are smaller and cheaper systems which make the applications available to smallscale farmers. At the cost of about KSh 8,500 you will get a system

## Maintenance of drip irrigation pipes important

Ann Wangare Mwangi advises that for the drip irrigation system to work well, there is need for constant maintenance so as to remain efficient and operate at the optimum. According to her, farmers should:



• Use clean water to avoid clogging the water emitters.

• Be careful during farm activities like weeding to avoid damaging the water pipes, hoses and drip pipes.

• Inspect the system on a regular basis so as to detect any destruction from pests (such as termites, rodents), blocked emitters, and leaks that cause water loss.

• Ensure the filters are cleaned regularly.

• Make sure you put away the system and store it when not in use.

• Use mulch (dry plant material like grass) between the plants to minimize water loss through evaporation and reduce the growth of weeds.

With all the gains that can be achieved through these measures, changing to drip irrigation can increase food production, especially where irrigation has not been explored before. There are numerous economic and social advantages when farmers use drip irrigation.



*Inside a drip pipe: Only clean water can run out of the small holes shown (arrow)*

for more than 500 plants. It is advantageous for smallscale farmers to buy the materials in groups so they can bargain for a discount. For instance, if a roll of irrigation pipe is normally sold at KSh 8 per metre, farmers can get it for less if they buy it in bulk.

It is important that the pipes are fixed properly, otherwise the water

*continued on page 5*

# Choosing the appropriate drip system

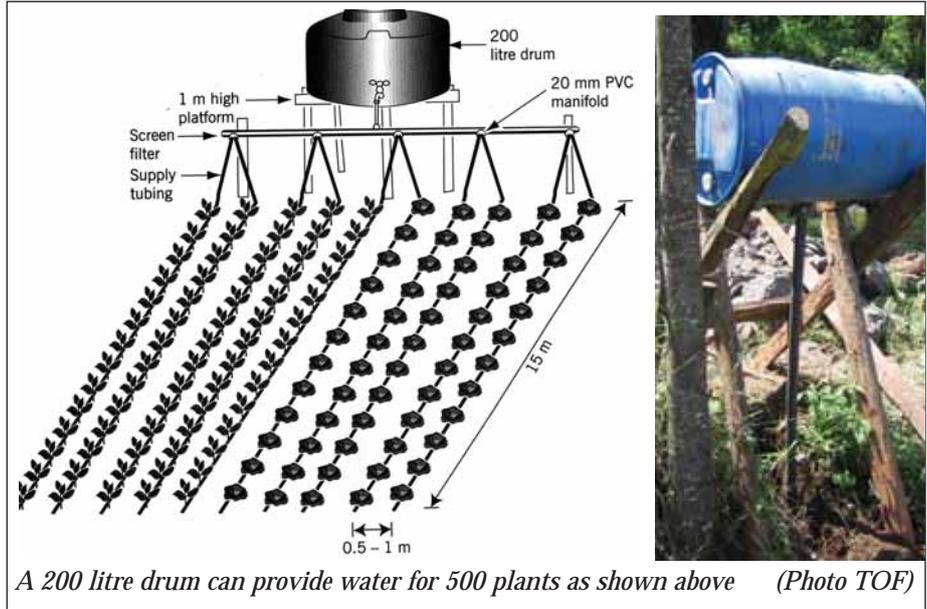
*Farmers should know the type of crops and soils before making a decision on which drip irrigation system to buy.*

There are many drip irrigation components available. Choosing a particular combination depends on various factors. Using clean water is very important. Water from ponds, rivers and wells may contain small particles that can block the holes that release water to the plants (see photo). It is necessary to have a filter to remove these particles. If there is no money for a filter, you can let the water run through a piece of cotton or a sock when filling the bucket or the drum.

The best approach for smallscale farmers is to keep their systems as simple as possible. They should try to wet only the areas close to the desired plant, so that the roots can easily access the water. It is important to realize that the larger the plant, the more the water it will need; the number of holes on the pipe (emitters) that discharge water to the plant may need to be increased, depending on the type and size of the plant. The system might need to run more often during dry weather than during wet or humid conditions. The type of soil also determines the number of emitters to be used. In sandy soils, the pipes need to be closer together than in clay soils.

### The bucket kit system

This system is ideal for growing vegetables in small home gardens during the long dry season. The bucket kit consists of fittings and 30 metres of irrigation drip tape connected to a



A 200 litre drum can provide water for 500 plants as shown above (Photo TOF)

20-litre bucket. The bucket is placed at least 1 metre above the ground so that gravity provides sufficient water pressure to ensure even watering for the entire crop (see page 4).

Water is poured into the bucket twice daily and passes through a fil-



Main pipe supplies the drip water

ter; it fills the drip tape and is evenly distributed to 100 watering points. The multi-chambered plastic drip tape is engineered to dispense water through openings spaced at 30 cm. A seedling is planted at each wet spot so that all the moisture is absorbed directly by the plant roots. Two bucket kits will produce more than enough vegetables for a family of seven.

### The drum irrigation system

The drum system will cover a garden 6.5 metres wide and 16 metres long. The drum kit is used to cover five planting beds and therefore the plant population depends on the type of crops grown. Water is supplied from a 200-litre drum that is fixed on a platform at a height of at least 1 metre above the ground.

### The 1/8 farm system

This system covers 1/8 of an acre (a 15 metre x 30 metre plot). A platform 2 metres high is constructed to create enough water pressure. A drum with a capacity of 1000 litres would be ideal to supply enough water per day. (PN)

*If you wish to know more about drip irrigation, the Regional Land Management Unit (RELMA) has published a very informative book: "Drip Irrigation: Options for Smallholder Farmers in Eastern and Southern Africa"; Technical Handbook No. 24, Nairobi 2001. The illustrations and a lot of information for the articles on pages 4 and 5 were obtained from this book.*

Farmers interested in buying drip pipes should make enquiries at the following institutions:

The Kenya Agricultural Research Institute, National Research Laboratories (KARI-NARL), Waiyaki Way, Nairobi, Tel. 0722 397750, Ask for Esther Muriuki Or

SHADE NETS LTD,  
P.O.Box 2127, Thika  
Tel. 067 31051/6 Ask for Judy  
E mail: shadenet@wananchi.com

## Drip irrigation...

*continued from page 4*

will leak. Proper installation can guarantee a lifespan of at least 10 years. When your drip irrigation is on, watch how deep the water has gone, so you can see how long a time the water needs to run.

Smallscale farmers can make modifications to the drip irrigation system to satisfy their practical needs in their farms. According to Esther Muriuki, who works as a technician at KARI, the bucket and the drum systems are simple designs that can be easily assembled and maintained on the farm.

# We have to understand Mother Nature

Barbara Lamperth Hounnou from Zimbabwe has sent us a picture of a diseased plant. "As a regular reader, printer and distributor of *The Organic Farmer* here in Zimbabwe, I would like to ask you a question. I run my garden exclusively organically and I am shocked how much people here rely on fertilizers and chemicals for pest control. In the picture is a leaf of a paprika plant. The owner of the field says that if she doesn't treat her plants very soon, they will all become like this and she will have no harvest. So she is going to spray; she mentioned about seven different possible products, all of them sounding quite toxic and being awfully expensive. What natural measures can be taken to protect paprika plants? Can they be intercropped with something protective? What is the cause of the disease?"

Firstly, if grown in optimum conditions, crops rarely suffer from chronic disease, deficiency or even insect damage. Organic production creates fertile soils, and diversity in both flora and fauna (plants and animals), resulting in a natural balance and thus a stable environment. Where we upset, defy or challenge and change these conditions, we create problems. More often than not, we use artificial solutions to correct these. In the case of the paprika leaf, at first glance it does look like a fungal disease. Its presence may be due to many reasons. It could have spread from neighbouring plants, by being wind-blown, or have come from the soil, from insects, or from poor crop hygiene. It may be due to pathogen build-up in the soil, as there may be poor or no crop rotation practised. It is difficult to make a diagnosis based on a snapshot photograph without the surrounding history and evidence. It also looks fairly well established, which would make a cure both organically and conventionally difficult.

## Su Kahumbu answers your questions

Write to

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P.O. Box 14352  
00800 Nairobi Kenya  
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e-mail: info@organickenya.com



Though there are many organic botanical solutions to a wide variety of problems, it must be recognized that using organic solutions in conventional crop production may not result in the desired effects. As long as the production methods are out of sync with nature, nature will always try to fight back. This natural adjustment then becomes viewed as a problem, when it is in fact Mother Nature producing a solution to the man-made imbalance.

### Change to organic farming

Barbara, a starting point would be to encourage your friend to incorporate intercropping, crop rotation and soil fertility-building in her planting. Nature has many intrinsic links which we need to discover and understand. Hopefully your friend will start exploring the exciting world of organic production. The more knowledge we have on the workings of nature, the better able

we are to understand her fragility and persistence. We also then recognize how our existence is dependant on nature.

I also asked Dr. Zachary Kinyua, a plant pathologist at the Kenya Agricultural Institute (KARI). Here is his answer:

"Diagnosis of plant diseases from a picture may not be too accurate unless verified through laboratory tests. This is because different agro-ecological zones have different disease-causing organisms and pests. Unfortunately it is not possible to send the sample to Kenya because of phytosanitary restrictions that prevent the transfer of plants from one country to another. We therefore recommend that you take samples of the plant to the Zimbabwe Plant Protection Research Institute (PPRI), who will carry out a test and give you an accurate answer on the cause of the disease."

## Greenhouses not suitable in organic farming

Elijah Nyarangi ( Tel. 0733 88 85 87) wishes to start greenhouse farming. He asks: "Is it possible to do this organically?"

Elijah, this is a very important question to ask before you have actually started. On a personal level, I invested in a greenhouse four years ago, and took it down this year. Last week, I visited a farmer who started off producing organically in three greenhouses and who has now, one year later, resorted to conventional production. In my case, the problems associated with the greenhouse far outweighed any benefits. Pest populations in a controlled environment can very easily get out of hand and disease is very often swift in its onset, and difficult to

control. One requires a lot of vigilance and knowledge to succeed with organic greenhouse production. These issues can be overcome, but can this be done economically? Organic production aims to create a sustainable balance with many players in nature.

Greenhousing requires a financial investment where space becomes prime property and unless done on a very large scale, the outside conditions that create a balance cannot be copied on the inside. One easily gets into a vicious cycle of trying to control one outbreak after another of pests and diseases. Soil pathogens also thrive in humid greenhouses.

The farmer who eventually turned to conventional production could not

*continued on page 7*



# Letters to the editor

## We need support

I am an organic farmer living in the most remote part of West Pokot District, Sigor Division. I hold a certificate in Bio-intensive Agriculture from Manor House Agricultural Centre, Kitale. But am not employed. Currently, I have managed to come up with a small grass root group called Kapon-pon youth group for sustainable development (KAYG-SD) which operates with limited resources and therefore requires support.

Samson Kuyo, Mbara Primary, School, P.O Box 211, Kapenguria  
Dear Mr. Kuyo,

Thank you for your initiative in starting a group. Although the newspaper is currently giving part assistance to selected farmers' groups to facilitate the marketing of their organic produce, we do not give financial support to farmers' groups because all our funds go to the production of the newspaper-Editor

## Will dairy goats survive?

I take this opportunity to thank you for *TOF* newspaper. I understand the shortage and postage. Our members have accepted to share the copies. They are 14 in number. I have distributed all and the farmers are always anxious. About the milk goats, we would like to know whether there is a problem with climate because when we compare Nyahururu and Nakuru, it is differ-

ent by far. We have booked one male and one female goat from Mukurweini Nyeri and they will be brought on the 15th of this month for demonstration because they are a bit expensive and we fear that they may not do well in this area.

Rachael Nduriri, Gikingi Church Group, P.O Box 1334, Nyahururu  
Tel.0720 616435



Organic material is not waste (TOF)

## Waste management

The Green Towns organization was initiated in the early 1990s and has projects in over 48 towns with varied regional projects that are aimed at conserving the towns sustainably with respect to the environment. One of the key areas of intervention is waste recycling and utilization. Organic waste, being over 70% of most urban waste, necessitates its use in agriculture. Through our farmers' network we have been able to train urban and peri-urban farmers on the skills. Your newspaper *The Organic Farmer* has complimented our work because farmers experience many problems. Working together with you will make us reach more farmers. This will enable them acquire skills in organic farming and improve food security. We will therefore be grateful if you can increase the number of copies to serve the more than 200 farmers in the programme.

Elijah Githee, Green Towns, P.O Box 766, Nakuru

## My questions answered

Personally I am very happy and grateful because you have answered my questions in the last issue and I am satisfied. The magazines are helpful, educative and full of advice

Francis Ndungu Kungu P.O Box 69 Solai

## Excellent and informative

I have just finished reading the February 2006 copy of *The Organic Farmer*. May I congratulate you all on an excellent magazine, with some very informative articles. I would be very grateful if you could please add my name to your mailing list, as per the address at the end of this letter. I work with various communities all over Kenya and also in Malawi, doing workshops on sustainable and organic agriculture, water harvesting, tree planting and health matters. *The Organic Farmer* will be of such help to me and the communities I work with. If I may be so brash as to ask for at least 2-4 copies each month? If you have any spare copies of the magazine from last year I would be so grateful to have them, as I feel I have missed out on a lot of information! "He that plants trees loves others besides himself." My very best wishes.

Grete Davey, Box 285-00204,  
Athi River, Kenya,  
kikoken@wananchi.com  
Cell. +254 (0) 722 243 774.

## More organic substitutes

In our area now everyone who has heard about your newspaper has reduced the use of chemical fertilizers and pesticides. Many have started organic farming. Why don't you give us organic substitutes to chemical dewormers, vitamins and even vaccines?

Aruba Farmers Group,  
P.O Box 596, Kitale

## Good for arid areas

Our geographical area as stated in the questionnaire is semi-arid. Some of the organic methods can assist our farmers. Please assist us to get past issues and ensure we do not miss any other issue of this educative magazine.

Samwel Maina Mburu, Arutani Self Group, P.O Box 85, Nakuru

## Dear Farmers,

If you have any questions or ideas for articles, or if you would like us to publish experiences about your shamba or within your farmers' group, please send us (with sms) your contacts. We shall get back to you!

Tuma maoni yako! Asante.



## greenhouses...

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afford to take down such an expensive investment. Her greenhouses are full of diseases and pests that she is now frantically trying to control with synthetic poisons. It will never make financial sense to leave her houses vacant. Pest problems are to be expected. Most greenhouse production is monocropping, therefore there is an abundance of food for those pests that survive on the crop. They will therefore breed very successfully. Looked at another way, if I were to find a market for the leaf miner pest, I would want to breed them in large numbers. I would concentrate on containing them and feeding them, hoping they would breed in massive numbers. I would plant a greenhouse full of tomato plants as food for insects. So then, is it not natural that pest problems are common in greenhouses?

# tips and bits

from farmers, for farmers

## Tephrosia is helpful but dangerous

In the last few months, we received some letters from farmers asking about the use of the plant *Tephrosia vogelii* (Utupa). Mrs. Rosalie Faull (Mugie Ranch Ltd., P.O. BOX 30 20321 Rumuruti) for instance, wants to know if we have written anything about the uses and method of preparation of *Tephrosia vogelii*. "It has been very good against aphids on sukumawiki and broccoli here."

And John Sprite (P.O. Box 1781, 30200 Kitale) sent us the following letter: "Last season farmers discussed in a Farmer's Field School class (FFS) on how to control stemborers locally using tephrosia. Those who practised it managed to control the pests without buying chemicals.

### How do you prepare and use it?

1. Crush 50 fresh leaflets in 1 litre of water and let stand for 24 hours, DO NOT USE SOAP. (Tephrosia is said to be most effective against aphids if the water is warm when sprayed on crops.)
2. Crush stems and leaves and dry, then grind into powder and put 2 tea-



spoons in the maize funnel to control maize stemborers. Repeat every 3 weeks.

3. Crush 1 kg leaves and stems and ferment in a plastic container for 4 days. Add 1 litre water, sieve and apply in the maize funnel.

Results showed no maize losses caused by stemborers, especially when applied early. The tephrosia pesticide solution is also effective as a contact treatment spray on vegetables against aphids, cutworms, caterpillars, beetles and termites.

### Many different uses

The NGO Pelum Zambia proposes tephrosia for many other uses:

**Protecting stored grain:** Pick fresh leaves from the shrub and allow to dry. Pound the leaves to a powder. Mix approx 100 grams of powder to 100 kg of stored maize. Before eating maize, thoroughly wash the maize grains (see below).

**Animal welfare:** For control of ticks, lice and flies: Pound fresh leaves and small branches. Dilute 1:5 in water and allow to soak for 8 to 12 hours. Alternatively, boil to extract the toxins for no more than 30 minutes. Wash animals with the solution.

**House hygiene:** For repelling mosquitoes, cockroaches and bedbugs in the house, beat the walls (particularly in corners and furniture legs) with fresh branches of tephrosia.

**Moles:** To prevent root rats from entering the farm or field, plant tephrosia along the boundary at 1 metre intervals. After approximately 12 months, the bounded area should be free of root rats. But caution! Once root rats are gone from the field, remove the plants, leaving only those in the field boundary. Therefore sow crops such as maize (not affected by nematodes) after a tephrosia fallow.

### Be careful!

If you are working with *Tephrosia vogelii*, be careful! Ideally, wear protective clothing and gloves. Try to avoid skin contact with the pesticide. Should you come into contact, wash affected parts immediately and after handling the compound. Foliage (leaves) and seed of tephrosia are not suitable for human and livestock consumption as it is poisonous.

Tephrosia also attracts root knot nematodes and may cause high infections in susceptible crops such as beans and tomatoes.

Organic regulations restrict the use of *Tephrosia vogelii*, as Su Kahumbu writes: "According to the local EnCert Organic Standards, the use of tephrosia must allow for a 7-day post-harvest period. According to the Soil Association Standards (UK), the use of rotenone (the active ingredient in tephrosia) is restricted. This means one must first request permission to use it and get written permission from the certifying body before one can use it. That means: be careful with tephrosia!"

## Marketplace



**Potatoes for sale.** Patrick Nganga, a farmer from Molo, has potato seed, Tigoni variety for sale. The seed is certified by the Kenya Plant Health Inspection Service (KEPHIS). Any farmer interested in the seeds should get in touch with him through the following:

Patrick Nganga, P.O. Box 893 Molo, Tel. 0722 946 823

In the last issue we asked farmers who have dairy goats to give their addresses. The following farmers have responded:



**Astone Ndude Olutali**, P.O.Box 1, Bukura, Kakamega. Tel. 0723 938 649

**Joseph Kimunge Macharia**, P.O.Box 36, Mukurweini, Nyeri, Tel. 0722 506114.

**Samuel Njoroge**, Technical Manager, P.O. Box 14748-20100, Nakuru, Tel. 0723 793 414.

**Samuel Thiongo**, Ruthimitu Organic Group, PO Box 489-00605, Uthiru, Tel: 0722 565 642.

**Need potato beet?** I have potato beet and other organic farm products which are ready for sale. Please contact me! Doris Njuguna, Tel: 0723741 955

**Farm credit.** I am also in contact with financial institutions interested in providing credit to small and medium organic farmers. Only farmers who have formed groups with five to 30 members and which are well managed, transparent, accountable and honest to their members need to apply. If your group meets these conditions please get in touch with us. Please call Tel. 0723 484 810, ask for David Ngugi Kimani.

**Land for sale.** 2.2 hectares, prime agricultural land situated at Meru farm next to Kitale showground in Kitale Municipality. Please contact the owner. Kihara Mwai, P.O Box 24214, 005200 Nairobi, Tel 0722 575 816

**Immune Boosters.** Kabete HIV/AIDS Vigilante Group is appealing to those affected by HIV/AIDS to grow and eat organic health foods to boost their immunity. For more information contact David Ngugi Kimani, P.O.Box 1388 Kikuyu, Tel. 0723 484 810