

# The Organic Farmer

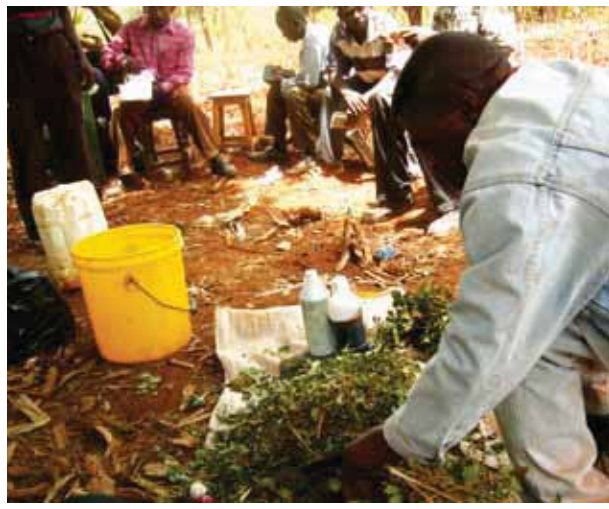
The magazine for sustainable agriculture in Kenya



Nr. 54 November 2009

## i-TOFs at work

Dozens of farmers' groups have already benefitted from the i-TOF training programme offered by the information and input centres of *The Organic Farmer* magazine. The picture shows members of the Mukui Farmers' Group during a training session in Sagana, preparing plant extracts. See page 6



## Fertilizer not effective in poor soils

Soil organic matter increases soil fertility, improves soil structure, retains and stores nutrients and water and makes them available to plants over a long period. Two new studies conducted in Western Kenya add a new dimension to this common knowledge. They show that mineral fertilizers are less effective and may even be unprofitable on soils which are very low in organic matter. In such soils, fertilizer nutrients are not retained in the soil, but are washed out before they can be taken up by the crops. These soils had been planted for decades without a break. In addition, the most degraded soils were often cultivated by the poorest farmers, and they were using less than half the fertilizer amounts compared to farmers

with better soils. Three things can be seen from these studies.

Firstly, the government's well-intended efforts to make fertilizers available and affordable don't help the poorest farmers much, but may actually reinforce income inequalities. Secondly, farmers should be aware that fertilizer application is not economical on very poor soils. Thirdly, the results emphasize the central role of soil organic matter.

### Organic matter is central

Organic methods are the best way to improve poor soils. Compost, animal manures, green manures, mulches and cover crops all contribute to the building up of soil organic matter - which is what poor soils need most to improve.

## Rift Valley Fever: Outbreak likely

Livestock keepers should be aware that with the current rains, an outbreak of the Rift Valley Fever is looming. Farmers across the country are advised to take preventive measures to contain the disease when they notice symp-

toms. The Rift Valley Fever virus is spread primarily by the bite of infected mosquitoes, mainly the *Aedes* species, which can acquire the virus from feeding on infected animals. The female mosquito is also capable of transmitting the virus directly to her offspring via eggs.

These eggs can survive for several years in dry conditions. Periods of rainfall enable the eggs to hatch and the mosquito population to rapidly increase, spreading the virus to the animals on which they feed. See page 3



## Dear farmers,

Our article on livestock breeding in the October issue of *The Organic Farmer* generated a good response from farmers who have requested for advice and guidelines on how to keep records. Indeed, animal breeding goes hand-in-hand with record-keeping. These documents help to reduce the risk of inbreeding and also increase animal productivity. There can be no sustainable livestock breeding without maintaining proper records.

Even though we have written about this in the previous TOF-issues, we cannot ignore these requests from fellow farmers. In *The Organic Farmer* will from December we feature the basic principles of record keeping including guidelines on how farmers can keep records for animals as well as for crops.

Record keeping requires discipline and time to put down the figures regularly. Proper records are a useful instrument of planning and a good management tool, not only on livestock breeding, but also for small-scale farmers. Careful planning does not require money, it needs creativity, initiative, the courage to tackle problems instead of lamenting, and a will to succeed.

The recent drought with its devastating consequences should be a lesson to farmers on the need to plan ahead. Let us give you two examples. Most farmers did not have adequate forage compared to the number of their cows. There are various methods farmers can use to prepare fodder for the dry season; we have featured them in our magazine. If you need some of this information, send us an SMS with your address and key word like "hay" or "silage", and we will send you the material. A longterm solution for producing fodder during the dry seasons is to plant fodder trees such as *Leucaena* or *Calliandra*.

Another example for the need to plan ahead is the availability of water. When the rains come, farmers forget all about drought; but within a short time, they will be facing the same problem. There are many cheap methods of harvesting water (see pages 5 and 6). All you need is labour and the determination to harvest as much water as you can to use for food and fodder production.

Small-scale farmers need to take their fate in their own hands. Do not wait for other people to assist you, take the first step to address your problems. Experience shows that proper planning is the first step to success.

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# "It is time for organic farmers to pull together"

*Su Kahumbu, well known to our farmers as the person who answers their questions, plans to bring Kenyan organic farmers together. We give her the opportunity to explain her vision. (TOF)*

As a key stakeholder in the organic industry, I am always looking for innovative methods of solving the myriad problems small-scale organic farmers face: An aging farming population, unemployed youth, a less than enabling farming environment due to global climate change, lack of genuine transparent representation in the sector as well as in the larger agricultural sector, lack of organic markets, lack of national representation etc. These issues cannot be addressed by one person alone.

Upto now Kenya lacks strong farmers organizations, that can represent farmers interests both at the district or national level. Farmers have become victims of exploitation at every level. The few organizations that claim to fight for farmers' rights are individual outfits that have very little following among the small-scale farming community. There needs to be an organization that can lobby to bring the desired changes in the agricultural sector.

I believe in the power of numbers. Statistics show there are a few hundred

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thousand organic farmers in Kenya, and the country's farming population is approximately 60% of the total national population, according to the 1999 census.

## Integrity and transparency

The organisation will charge a small yearly membership fee which may be payable in monthly instalments. My target would be to achieve a million members over a five year period. With these economies of scale, membership could be as low as 10-20 Ksh monthly.

Office bearers of the organisation will have to undergo a due diligence examination. Information on potential office bearers will be made available to members using new technologies, where members will be enabled to elect office bearers using their mobile phones. Accounts of the organisation will be posted quarterly in *The Organic Farmer* magazine.

## Our targets

As this is the birth of an idea, I have developed a draft 'mandate' for the organisation together with a few other interested organic stakeholders, and I imagine that this draft will be adapted in due course according to the requirements and input of the organisation members.

The aim of the organisation shall be:

1. To create a national unified body of organic farmers across Kenya.
2. To provide a national communication network for farmers to enable them voice their views, concerns, requirements, at a national as well as international level.
3. To create a paying membership network that will address issues of its members at a national level
4. To use the power of numbers to lobby for issues and concerns related to its members.
5. To use modern technologies to enable the most cost effective opera-

## It is now time to act

I feel it is time the world realized the most important folk on planet Earth are the primary food producers, small-scale farmers, upon whom the entire planet population depends for their very existence.

It is time, as food prices soar and supplies dwindle, that farmers should take the opportunity to rise up as one voice and demand the respect they deserve from both consumers and country leaders.

It is time that – if farmers are expected to continue with the responsibility of feeding the world, they must be recognized and supported in this endeavour.

It is time that we use new technologies and platforms to make the farmers' voices heard.

It is time the farmers join together, take and state their stand. There is no better time than now!



Su Kahumbu

tions of the organisation.

6. To avail quarterly financial reports to all members via TOF ensuring absolute integrity and transparency of the organisation.
7. To develop new innovative models of agri-enterprises aimed at bringing the youth members into organic agriculture.
8. To develop organic markets at national level for members.
9. To eventually develop a national merry-go-round for members where monthly contributions will be used to develop clearly identified development projects (dams, credit systems, boreholes, etc).

**Su Kahumbu**



One of the objectives of a farmers' association is to ensure that they have access to markets and to get competitive prices for their produce. (Photo TOF)

# Farmers, beware of the Rift Valley Fever

*Farmers can avoid economic losses if they vaccinate their animals against Rift Valley Fever, a highly infectious disease.*

**William Ayako**

With the onset of the rainy season, livestock keepers, especially cattle, goat and sheep keepers, are advised to vaccinate their animals against Rift valley fever. Due to the expected heavy El Nino rains, the disease is expected to become severe this year.

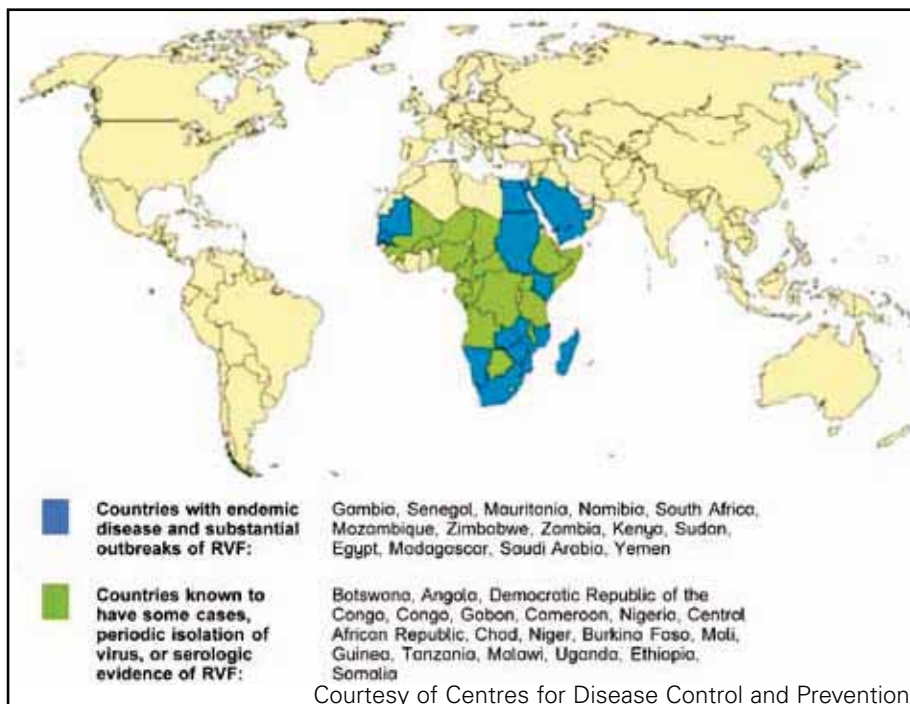
The disease, also known as enzootic hepatitis, is an acute infection of cattle, sheep, goats and humans and is caused by a phlebovirus. It recurs mainly in Africa. The epidemic occurs in cycles of between five and twenty years in association with heavy build up of mosquitoes after abnormally heavy rains. Transmission between animals is mainly by mosquitoes, while transmission from animals to people is by direct contact.

## Clinical signs

- In cattle, Rift Valley Fever is characterized by abortion in pregnant cows and hepatitis in calves.
- In mature animals, abortion in pregnant females is outstanding. There is high fever and mortality may reach 10 %. Erosion of the oral mucus membranes may be observed.
- Other symptoms: Raised body temperature, excessive salivation, lack of appetite, weakness, dullness, and reduction in milk production.
- The incubation in calves may take 12-36 hours
- In severe form, calves will develop high fever, and may vomit. Some nasal discharge may also be seen, followed by prostration; mortality may reach up to 70%. In very severe infection in calves, death may occur in two days after the incubation without showing any clinical signs.
- In humans, there is lack of appetite, nausea, severe headache, joint pains, dizziness and nose bleeding. There are rare deaths among humans who usually recover and develop immunity.

## National campaign

Like many other viral infections, RVF has no cure; it can only be prevented through vaccination. In Kenya, the ministry of Livestock development in collaboration with other stake holders has conducted a national vaccination campaign to control the infection of cattle and other animals. The campaign involves provision of free vaccines and personnel and the public have been sensitized through the local



print mass media. The public is encouraged to cooperate during the campaign to enable us to save the remaining livestock.

## Preventive measures

- Prohibition of movement of suspected animals across national borders in Africa and from Africa to other countries would prevent transfer and new outbreaks.
- Grazing of animals in mosquito infested areas should be avoided.
- Vaccination of animals and humans with suitable vaccines should be practiced. Pregnant cows should be vaccinated with special vaccines to avoid the risk of abortion.
- Human exposure to mosquito vectors can be prevented through use of protective clothing, application of

insect repellents, and avoidance of outdoor activities during times of peak vector activity.

## Warning

There is no known medical treatment of Rift Valley Fever and the public should be aware that the disease can also infect humans. Vaccination should be done by qualified personnel to avoid human infection through handling of the vaccine and infected animals.

- Report any diseases and deaths of cattle to the nearest veterinary office
- Report all cases of abortion in sheep, cattle, goats and camels to veterinary authorities
- Comply with the Department of Veterinary Services quarantine restrictions barring movement of livestock out of or into infected areas.
- Do not handle aborted foetuses without wearing adequate protection.
- Do not assist animals with difficult calving but consult the nearest veterinary office or clinic instead.
- Wash your hands with soap and water or disinfectant after handling animals or animal products.
- All animals should be slaughtered in authorized slaughter houses and be inspected by an authorized meat inspector.
- All meat should be transported in a permitted meat carrier and each consignment accompanied by a certificate of transport indicating the origin and destination of the meat.
- Do not drink raw milk before boiling or pasteurization.
- All animal products should be well cooked or processed before eating.

## East Coast Fever vaccine available

Millions of cattle in 11 African countries could be saved following the mass production of a vaccine that controls East Coast Fever (ECF). The vaccine that works by infection and treatment of healthy animals to develop their immunity to the disease has not been available to most livestock keepers in these countries due to lack of adequate funding for its production.

The International livestock Research Institute (ILRI), at the request of Africa Union/Inter-Africa Bureau for Animal Resources has produced one million vaccines that will be used to vaccinate livestock in the affected areas. (TOF)

# Tanzania supports organic farming

*With official assistance, Tanzanian farmers have increased crop yields using organic methods.*

**Peter Kamau, Pare (Tanzania)**

Hussein Mavoja, a 52-year old farmer in Ntenga village in Pare mountains in Tanzania had for a long time practised farming the traditional way. However, like many other small-scale farmers in rural Tanzania, his crop yields were not very good. The average maize yield was three to four bags per acre which could not meet the food requirements for his family of five. For maize seed, he would select his seeds from the previous year's harvest. But all started changing for the better two years ago when the Tanzanian government with assistance from donors introduced the Participatory Agricultural Development Programme (PADEP) to train farmers on sustainable agriculture.

"In the last three years, I have seen a steady increase in my maize and bean yields. Now I can harvest between 12 and 13 bags of maize per acre which was something I could not imagine just a few years ago," Mavoja says.

## Farmers learn organic methods

Mavoja is a beneficiary of PADEP. Together with 40 other farmers in

## Changing farming systems

Most farmers in the Pare mountains still practise traditional farming systems with little use of fertilizers and chemicals. Intensive farming over the years on the slopy mountains had led to soil erosion and reduced soil fertility. The introduction of organic farming including provision of certified maize seed varieties is changing the way farmers practise agriculture in this region and other parts of Tanzania.

The most interesting approach being used in this program is that it is farmer-driven. The farmers identify priority projects within their community, then the government comes in to provide technical and financial support to help them realise their goals. Other projects that the government has initiated on the same model have had a big impact on the overall agricultural production in the country. Increased productivity has enabled Tanzanian farmers to export fruits, vegetables and cereals to Kenya which has been made easier following the cross-border trade pact signed under the East African Community trade agreement. (pk)



Farmers in Pare mountains (Tanzania) working in their *shamba*. (Photos P. Kamau)

Ntenga village from Same district in Tanzania, he enrolled for the training programme in 2007 when it was launched. They were divided into 4 groups with each group of 10 farmers being given a choice of the area they wanted to be trained in. The 4 groups chose crop production, soil conservation, dairy farming, poultry keeping, irrigation and water development.

Mavoja's group went for crop production with maize and beans being their main crops. The programme started training the farmers on the importance of restoring soil fertility, composting and use of organic fertilizers. "For pest and disease control they introduced us to various plants that can control pests, fungal and bacterial diseases. We were also shown how to prepare foliar fertilizers. We never knew that many plants that we often take for granted are very useful to the farmer", says Mavoja. A little more labour is needed in organic production; however, the benefits outweigh the cost of buying what he calls *Mbolea ya viwandani* (chemical fertilizers) including chemicals pesticides and fungicides. He says the use of organic methods has opened the eyes of many poor farmers who have now found cheaper methods of crop production that have considerably cut down on their production costs.

## Exchange of skills ...

To ensure the new technologies introduced to them are adopted by all members, each of the groups has to train others what they have learnt. For example, Mavoja's group has to train the other groups that specialised on soil conservation, poultry keeping, irrigation and water development, what they learnt on crop production. Each of the other groups have also to train Mavoja's groups the skills they have acquired in their areas of specialisation. At the end of the training and exchange of skills learnt, all the members in the four groups will have gained experi-

ence in crop production, soil conservation, dairy farming, poultry keeping, irrigation and water development.

## ... and financial support

The government extension staff do not stop there; they have to visit each group and do an evaluation to test if the farmers have learnt all the skills. The evaluation is done in a selected demonstration plot specific to each of the areas the farmers have been trained on. Satisfied that they can put into practice all they have learnt, the farmers are given certificates and allowed to go back to their farms where they are expected to start various farming activities.

To facilitate the farmers and enable them implement the various projects, the programme granted them Tsh 35 million. From this amount, the farmers were given grants, each according to their requirements such as money for purchase of seeds, ox ploughs, improved dairy cows or goats or irrigation pipes. "This money has made a considerable improvement in our livelihoods," Hussein Mavoja says. "35 out of the original 40 members have managed to start various income generating activities that are now supporting them."



# Collect water while it is raining

*A lot of run-off water can be harvested and put to good use instead of going to waste.*

## The Organic Farmer

The rains have already started. Most farmers are taking advantage of them to replant after the crop failures of the recent drought. As the rains continue, billions of cubic meters of water that could be harvested and stored across the country will go to waste. With the diminishing water resources as a result of deforestation and climate change,

we just cannot afford to lose such large amounts of water any more. Instead, farmers should collect as much water as possible now, to have it ready for use during the next dry season!

Farmers can choose between various methods to harvest water for domestic as well as for agricultural use. They should take into account all available water resources and all ways in which water can be collected, stored, and treated. In the same way as your crop harvest provides enough food for your family all year round, an adequate amount of water should be available to

## Water

Our series on water *The Organic Farmer* underscores the value of this neglected resource. In the December issue, we will feature indigenous technology in water conservation.



carry your family, your livestock and your *shamba* safely through the dry season.

## Harvesting water for domestic use

Farmers need water for two main uses: Clean water for the household and animals, and less clean water for crops. The best source of clean water is rainwater. Iron sheet roofs can supply free and clean water throughout the year – it only needs to be caught by gutters and drained into a storage tank.

Use all roofs on your farms to harvest rainwater! Also water flowing from smaller roofs of sheds and stables can

be collected in smaller tanks or drums. In a household with 6 persons consuming 100 liters of water per day, 36 cubic meters of water are required throughout the year. In a semi-arid climate (600 mm of rain per year), this amount of water is provided from a roof area of 60 square meters. This corresponds to a house of 6 meters x 10 meters.

All gutters need to be checked and maintained permanently to make sure that no water is wasted and the inflow to the tank is not blocked.

### Storage tanks

Tanks, reservoirs and cisterns for clean water storage can be constructed above ground or below ground. No matter whether they are made of plastic, bricks, masonry, steel sheets, or concrete, they must be tightly covered to prevent evaporation and pollution, and mosquitoes breeding inside. They also need regular inspection and cleaning. Before the rains start, the tank must be cleaned. The first direct flush of



Do not waste rain water! (Source of all photos: [www.infonet-biovision.org](http://www.infonet-biovision.org))

rainwater should always be directed away from the storage, since it contains the dirt from the roof.

A storage tank should be placed near the place of usage, e.g. the kitchen, or the cattle unit. An overflow should redirect excess water to a smaller water container or tank.

### Protect your family from malaria

All open water areas are breeding places for mosquitoes, also in the dry season, when malaria transmission is normally decreased. Cover tanks and all other inlets where mosquitoes may invade (taps, ventilation pipes) with screens and mosquito-proof mesh!



A roof, well maintained gutters and a clean and covered tank are vital in dry regions. (Source: Sustainable Agriculture Manual, IIRR 1998)

## You can get enough water for your livestock and crops

Water for farm animals and for irrigation of crops can be collected from surface runoff which is directed into ponds or reservoirs. Such structures can hold large amounts of water. Usually, soil is excavated and the material is used to form a dam. The ground of the pond or pit has to be compacted

to reduce leakage. Trees and scrubs are grown on the windy site of the dam to function as windbreaks and to reduce evaporation. This requires some effort, but there are many examples of initiatives where farmers alone or together by forming water user associations successfully constructed dams and ponds.

### Collecting runoff surface water

Surface water runoff, e.g. from roads, should always be directed into ponds or reservoirs. Trenches channeling water directly into the fields should be avoided, because uncontrolled water flow during heavy rainfalls leads to soil erosion and development of deep gullies in agricultural land. Water from ponds can be used for livestock as well as for irrigation of fields and crops. From the pond, small channels can then direct the water to the fields.

### Pits, dams and ponds

Natural depressions or pits which were left by road constructors can be used for water storage, especially if you observe that water tends to drain slowly from



Run-off water from roads can be harvested from cut-off trenches or road ditches

Continued on page 6



them. A trench can be dug to divert water from the road into the pit. To construct a dam and a pond, use a natural depression where rainwater flows or accumulates naturally. Also gullies can easily be diverted into a pond. The soil should be clayey. Avoid building dams near livestock enclosures to avoid pollution!

Dams should always be circular or oval in order to have an evenly distributed water pressure preventing cave-in of the walls. They can be lined with clayey soil to make the bed more impermeable. On slopes, a dam of half-circular shape may be sufficient to hold the water in the pond. A spillway lined with stones is built at each upper end of the dam wall to discharge surplus water safely.

Excavation dams are circular or oval excavations where the excavated soil is used for building the dam walls. Their sides should slope at least 45 degrees to be stable.

### Enlarge your pond gradually

A farmer can start with digging a small pond during dry season and enlarge it every year, until he is satisfied with the capacity of his dam.

### Channels to the shamba

Diversion channels direct the water from the pond into the shamba, where it can be collected in small pits. These are dug along the contours. Pits allow the water to sip into the soil, thereby increasing its moisture content. Use of pits is also a soil conservation measure as it prevents the run-off water from carrying the soil away.



Round dams are built on flat land (above), semi-circular dams hold water on hillsides (left), and excavation dams can also be built in succession (below).



## More farmers benefit from i-TOFs

*Peter Kamau, Gatuto*

It is a hot Tuesday morning, and members of Mukui Farmers Common Interest Group near Sagana town are seated in a semi-circle under a tree in a group member's farm. Before them are a variety of plants in a heap for preparation of plant extracts, there are also ingredients for preparation of natural milking salve. The members are involved in a lively discussion on the steps they have to follow in the preparation of the two products.

Peter Murage, an extension worker who is in charge of i-TOF training programme in the area is supervising the farmers to make sure they prepare the ingredients according to the way he has trained them. Finally the farmers get down to work.

The Gatuto training centre is one of the four information and organic input centres (i-TOF), which have been set up by The Organic Farmer magazine in Gatuto (Central), Kangundo (Eastern), Majengo/Buyangu (Western) and Baraka Agricultural college in Rift Valley province.

### Exchanging information

The 24-member group is a beneficiary of the i-TOF training programme, which was launched two months ago. Already many farmers' groups near the i-TOF centres are reaping the benefits of organic farming and sustainable agriculture through direct training by our extension workers.

After the practical session is over, the farmers review areas they had not understood in their previous training. They seek clarifications from Murage who answers all the questions with ease. The farmers then share their own experiences on the different aspects of farming.

Anne Wairimu says termites used to be a big problem to her, but since she attended a training session last month, a termite control plant extract solution they were introduced to had managed to wipe out termite colonies in her farm. Other members who have used the extract agree with her.

Apart from the use of plant extracts and the milking salve, the farmers have also learnt how to prepare compost

in the right way and various methods they can use to improve soil fertility and crop yields. "Previously we have had to depend on a few experts who came to train us at an exorbitant cost", says group chairman George Maina. "We are not paying anything for this valuable training and information material. We hope the project will continue so that more farmers can acquire knowledge on sustainable agriculture", Maina says. The farmers want more training in agroforestry, water harvesting and dairy farming.

### Using Infonet

Like the other extension workers in the programme, Murage's diary is always full. When he is in the office, farmers thirsty for information come to consult him. Others bring diseased plants and even pests for him to identify and recommend a solution. Murage opens his



Mukui farmers' group members in a group discussion with i-TOF extensionist Peter Murage, (left in cap)

small laptop computer. It contains the infonet-biovision information package which provides answers to most of the diseases and pests that affect farmers in East Africa. After going through the pictures showing various diseases on the computer, the farmers are able to identify the particular disease and how to control it. They leave the office satisfied.

### Organic inputs

In addition to the training, one area that farmers have a problem with is access to organic inputs. The i-TOF programme has made arrangements in the four i-TOF areas where farmers can buy some basic organic inputs such as diatomite powder that can protect cereals such as maize, beans, rice or any other cereal crops from pest damage for long periods of time, for instance against the Larger Grain Borer.

## Why some eggs fail to hatch

Why do some eggs remain unhatched after the hatching period is over?



Chickens are naturally rather poor brooders. Very often, only a part of the eggs will hatch. Even Bankiva-chickens, the wild ancestors of our domesticated chicken, are often not very successful and have to start a second and third clutch. There can be many reasons for unhatched eggs. If the egg was not fertilized by a cock, no chicken will

develop. Eggs may also have remained cold for too long. In case the egg had a crack or the shell was of poor quality, the egg might have dried out. Also the age of the hen can matter: the proportion of unhatched and infertile eggs is larger from the third laying period of a hen onwards.

## Phosphorus is essential for plants

Is organic phosphate better than DAP? Ruth Ruto, Bomet

Phosphates are a naturally occurring form of phosphorus. Phosphorus is absolutely essential for both plants and animals as an energy carrier and for growth and reproduction.

Rock phosphate in its natural form is used in organic farming to provide phosphorus to the soil for plant uptake. Rock phosphates release phosphorus and other minerals gradually and slowly, and the effect may not be seen immediately.

DAP on the other hand is synthesized in a factory by combining ammonia with phosphoric acid. It contains both Nitrogen and Phosphorus which are transferred to the plant directly, as DAP is a water soluble fertilizer.

However, when DAP is applied as plant food frequently, it increases soil acidity. In soils where DAP has been used for long time it is difficult to reduce acidity. This reduces crop yields and income for the farmer.



Enriching compost with rock phosphate

When using rock phosphate, you have to know:

- Legumes and millets respond best and directly to rock phosphate, whereas on maize the effect is only long term.
- In acidic soils, rock phosphate is more soluble and more available to plants
- Rock phosphate shows best effects when it is composted together with organic materials like manure or vegetative matter. This natural acidification process makes it available to plants in most soils.

## Ratio of cocks to hens

How many hens can a cock serve?

Chicken naturally live in groups of one cock and two to five hens. But if the poultry they are kept in confinement, there should not be too many cocks, as they will start fighting and may even kill each other. In such a system, provide not more than one

cock per 20 laying hens. If the cocks start to fight seriously, weaker cocks have to be removed.

If you want eggs for brooding, you will of course want that the entire clutch is fertilized. In this case, one rooster should probably serve not more than six hens.

## ...answers in brief

### Cowpeas

What is cow peas in Kikuyu language?

Cowpea is known as thoroko in Kikuyu language.

### What type of cassava

Thanks for your radio programme aired on 24/09/09. How long does cassava MM96/5280 take to mature? L.A Omuka. 0724 417 182.

MM96/5280 is an early maturing variety developed by KARI scientists.

It is tolerant to Cassava Mosaic Disease, has sweet taste and is high yielding. The variety takes 6 months to mature. For more information get in



touch with KARI Kakamega. P.O. Box 169, 50100 Kakamega, Tel 056-30031.

### Control ticks

Why are ticks common on some particular breed of cows than others?

It is true that ticks may attack a particular cow in the herd more than others but the reason for this has not been researched on. It may be similar as with mosquitoes – some people get bitten all the time while others remain untouched. Some veterinarians say animals with tender skin may be more prone to attack but no scientific evidence exists to back this explanation. We would advise to ensure all your cows are dipped often to reduce tick infestation which can cause several livestock diseases if they are not controlled.

### Super-gro

I would like to know more about a product called super-gro. Which I have been told is an organic fertilizer. Do you really approve it. Walter from Rachuonyo district? Tel 0724 112 142.

Super-gro is a wetting agent that enables plants to utilize water more efficiently. It is non-toxic, non-caustic and environmentally friendly. It is often mixed with pesticides to make them work better when applied on plants. However an American company who introduced it into the country, registered it as a cosmetic product running into problems with the Kenya Plant Inspectorate Service (KEPHIS) which banned it. So it is not available in most agrovets shops because of the ban. However it is absolutely safe to use in organic farming.

# Starting a proper organic kitchen garden

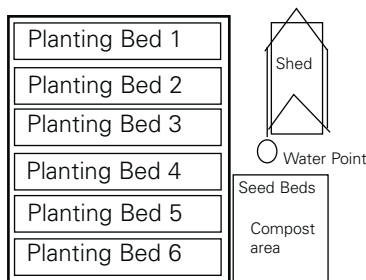
The Organic Farmer magazine often gets questions like this: "I have recently moved to a new home and would like to grow a kitchen garden and flowers organically. Please advise, thanks". I think it is important to show how to set up a kitchen garden.

## Su Kahumbu

I'm happy to hear you intend to also grow your flowers organically!

When locating a 'place' for a kitchen garden, a few considerations must be taken into account. Firstly choose a spot with good, fertile soil. Secondly, there should be adequate water nearby as this will save you the trouble of trekking back and forth. If you have any buildings close by, water could be harvested from the roofs. Thirdly, you should not have too many big trees in the area as crops have difficulty growing under big trees. Finally, ensure the area is safe from animals and even unwelcome humans who may be tempted to taste your crops!

Once you have the ideal location, draw it out and take some measurements so that you have a kitchen garden map.



From this map, draw out your planting beds. I recommend beds that are a meter wide and can run for up to 50 meters. Between each bed leave 1.5 feet of space as a path. Once you have prepared the beds it is imperative that you do not trample on the soil again. Many farmers do not leave paths and thus damage the soil structure as they weed and tend to their crops. If you have a path running down the side of the bed you can easily do all maintenance on

your crops without damaging them. Paths should be wide enough to take small wheel barrows, thus compost can be distributed efficiently and harvesting can be done without damaging the soil. Number the planting beds as this will help you with referencing and record keeping.

Now that you have a map you need to figure out what you are going to grow and in what quantities. Once you have made a decision, start a planting calendar as shown below. This will ensure you keep track of your planting regimes as well as ensure you have a continuous harvest.

Your planting calendar will follow the planting patterns of the rains if you rely on rain fed irrigation. However, if you are using irrigation to water your crops do proper planning so that harvesting time does not coincide with rainy season to avoid losing your harvest especially for cereal crops.

### Some tips

1. Use your planting calendar to plan your farm activities and follow good crop rotation in each planting bed. This will reduce the incidence of pest and disease on the crops.

2. Planting in beds with this plan will allow you to adapt the system into using drip irrigation very easily. One of the future TOF-editions will demonstrate how this is done on the same plan.

### Seed Beds

Before you begin to plant, start preparing your seed beds. This area must be near a water source and may require a little shading if it is too hot. Prepare your soil for your seed beds and dig up beds approximately 2m x 1 m. The number of seed beds will depend on the size of your kitchen garden. An eighth of one acre plot may require 2 seed beds this size. Incorporate a large amount of very well decomposed compost into the seed bed soil. It is important that this soil drains well but does not dry too quickly.

Follow the direction on your seed packets with your planting calendar so that you do not under or over plant.

An organic kitchen garden requires



a lot of compost fertilizer. Ensure you keep all your biodegradable wastes from your house and garden as well as from your flower garden, grass cuttings etc for this purpose.

### Compost Making

Again, choose the compost making area close to a water source. Make compost heaps ideally 2m long by 1m wide by 1 meter high, using layers of materials you find on your farm such as crop wastes, kitchen wastes, green materials e.g. tithonia and comfrey leaves, weeds, dry leaves, manure, wood ashes, and if available *minjingu* rock phosphate. For a compost pile this size approximately 5 kg ashes and 10 kg *minjingu* can be used. Make sure that as you make the layers, you keep wetting them down just to a damp stage, with water, or water with E.M.

When the compost is piled up, cover it with plastic sheeting or banana leaves and wait for 3 weeks making sure to check it does not dry out. After 3 weeks turn it and again make sure it is damp; then cover it again. It will be ready when it resembles dark brown rich soil and has a great earthy smell. This may take a few months. If it has a bad smell do not use it, but turn and stop it from getting too wet which is probably why it was smelling.

Make a new compost pile as often as possible so that compost is always available for application in your kitchen garden. Transplant seedlings when they are approximately 1 month, and water them well, especially after planting. For your flowers, use the same compost. Put mulching material around the bases of the plants to keep soil moist and avoid having to water frequently. You can do the same with other crops.

Voila, keep the cycle going! Good Luck!

Planting calendar

Bed	Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	kale	tp	w	h	h	h	c/p						
1	carrot						d/s	w	w	t	h	h	c/p
2	corn	c/p	d/s	w	t/d		h						
2	beans	c/p	d/s	w	w	h	c/p						
2	potato						d/s	w	t/d	h	h		

tp = plant  
d/s = direct seeding  
w = weed  
h = harvest  
t/d = top dress  
t = thin  
c/p = clear and prepare bed