

The Organic Farmer

The newspaper for sustainable agriculture in Kenya



Nr. 20 January 2007

Don't neglect to feed the soil

As you have read many times before in this newspaper, the soil is the most important resource for every farmer, and especially so for organic farmers. Maintaining a fertile and healthy soil must be the first priority at all times. To feed the soil means to feed the plant, hence giving a successful yield. Apart from light and water, soil requires nutrients (minerals).

Legumes are beneficial organic fixers of nutrients which conserve and improve the soil in many ways. They also provide a valuable addition to a family's diet or serve animals as fodder. On page 2, we explain these aspects of the value of legumes, and introduce the most common legumes in Kenya on page 3.



We need to fight soil degradation

Unless we improve land management practices, Kenya will in future face big problem in food production.

The Organic Farmer

Food production has declined in Kenya — largely as a result of rapid land degradation and high population growth. This suggests that food insecurity will persist in Kenya if the natural resource base for agriculture continues to be depleted. About 90 percent of the poorest people in sub-Saharan Africa live in rural areas. Because of population growth, land has been sub-divided and it is there-

fore in smaller parcels than that our parents had for farming.

Although there is increased cultivation of small land holdings in Kenya and other countries in Africa, farmers have failed to restore the soil nutrients through planting of nitrogen-fixing crops such as legumes and addition of organic manures and mineral fertilizers to replace nutrients taken out of the soil. The result has been widespread soil degradation through processes such as mining of soil nutrients, depletion of fertility, soil erosion, acidity, accumulation of salts (salinity) and desertification.

Studies show that much of the land degradation in the Kenyan highlands is due to poor land management practices. Unlike the relatively wealthy farmers of central Kenya, poor farmers invest little in soil management. Poor farmers also have fewer opportunities to obtain information and learn about appropriate technologies.

Dear farmers,

Whenever we visit farmers' groups across the country, the most common problem we have noticed are leadership squabbles. Sometimes members complain that money meant for the groups has been misused in one way or the other. It is such a serious problem that defeats the whole idea of the benefits that farmers stand to gain from working together.

Farmers' groups help members overcome the disadvantages of working as individuals. From last year we have emphasized the need for farmers to form groups in order to share ideas, solve their day to day problem, pool their resources and at least have some bargaining power. This enables them to get quality services. But these objectives cannot be achieved in an atmosphere of mistrust and suspicion. It is sad that wherever there is an external donor willing to give financial assistance to a group, members immediately start fighting over leadership positions; sometimes this has resulted in donors withdrawing support altogether. Often the allegations leveled against group leaders do not hold water; some members simply want to take over leadership, not to improve the welfare of the group, but for their own gain.

Group leaders need to show a high degree of integrity, they have to be open to all members at all times in order to create confidence and remove any suspicion. Members should be able to scrutinise the account books and raise any queries regarding the management of group funds. Kenyans have witnessed widespread corruption in the past and will question any dealings that do not appear to be above board. Group leaders that do not meet these expectations will always have problems with their members. Elections should also be held regularly to allow members to change leadership whenever the need arises. Meetings should also be held on a monthly basis and members allowed to air their views freely. This is democracy at work and leaders should accept it.

How can we demand for accountability and transparency in the government if the farmers' groups themselves are unable to deal with each other in an open and democratic way?

We wish all of you a prosperous new year 2007.
The Editors.

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MY OPINION

How many farmers have utilized the current rains to grow some food? If you asked this question, very few farmers will have anything to say. This is because none of them have planted anything during the short rains. Indeed many of us gave up when the short rains delayed in September and the better part of October. In September weather forecasts broadcast over the radio and the newspapers indicated that the rains would start late and extend into December. I took this information seriously. Now I have a healthy crop of maize beans and vegetables growing and which I hope to harvest. Weather forecasts maybe unreliable but at times it is good to try.

John Mutua, Farmer in Machakos

The Organic Farmer

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In-A-Vision Systems(k)

Legumes improve soil fertility

The soil needs nutrients, especially nitrogen. Planting legumes is the cheapest way to feed the soil.

Anja Bengelstorff

All plants need nitrogen to grow. They get it from the soil and store it in their leaves, stems and roots. Some types of plants are good at getting nitrogen either from the soil or from the air, while others, like maize are less able to do so.

Legumes can fix their own nitrogen from the air. They are very valuable organic material or intercrops, as they actually increase the amount of nitrogen in the soil as well as storing it in the stems and leaves. Furthermore, legumes like green grams or cowpeas are important for human nutrition, while others like desmodium and lucerne are nutritious fodder for animals.

In general, the colour of a plant's leaves can tell whether it contains a lot of nitrogen or not. If it has dark green leaves, it probably contains plenty of nitrogen, which makes the plant good organic fertilizer. If the leaves are yellowish, nitrogen is lacking and the leaves are less useful as manure.

Intercropping with legumes

Intercropping with legumes can be a solution to help provide the less able plants with sufficient nitrogen. Intercropping means growing two or three different crops in rows next to each other. It is a method used by farmers all over Africa and helps both crops to grow better. Maize, for example, as the staple crop in Kenya, grows well together with cowpeas and groundnuts. Apart from the fact that the legumes fix enough nitrogen in the soil to feed both the maize plants and themselves, intercropping also helps by denying weeds the space to grow. It also means that the farmers will always harvest one crop even if the other one does badly. Finally, harvesting is done at different times for each crop, so there is not so much work required at the same time.

To be successful intercropping needs to meet the needs of all the crops planted together. Sometimes, it is best to plant different crops at the same time, so they don't compete too much. Make sure the plant population density does not get too high in areas where there is not a lot of rain. The planting for intercropping can be done by mixing the seeds together before planting, or if you

plant directly into rows, the maize for example is planted in one row, the legume in the next, and so on. Runner beans could also be planted in the same row with maize because they can climb up the maize plants.

Legumes in crop rotation

Farmers who have enough land available can use legumes as part of a crop rotation process. While the legumes in one season are planted as sole crops to improve soil fertility on degraded land, they are later rotated with a cereal crop. The benefits in increased yields can be surprising.

Legumes as green manure ...

Legumes are fast-growing plants that can also be planted on a piece of land to improve soil fertility and protect the soil from erosion. In this way, they work as green manure. They are usually low, spreading plants that cover the soil surface quickly after planting. During or after the growing season, the green-manure plants are slashed and incorporated into the soil where they decompose, releasing nutrients and improving the soil structure.

Legumes such as soybeans, green grams, groundnuts and pigeon peas take nitrogen from the air and fix it in a form they can use. This nitrogen-fixing is done by tiny microorganisms called bacteria which live in the lumps (called nodules) on the roots of the legumes. The roots of other plants (such as maize) growing close by can also absorb some of the nitrogen. When the legume dies and rots, the nitrogen in its leaves, stem and roots is released into the soil, where other plants can absorb it. The rotting plants also increase the amount of organic matter in the soil.

... and cover against heavy rains

Legumes prevent the soil from being washed away by rainwater. The legumes act as a cover crop: They break the fall of raindrops, so preventing hardening of the soil and helping the water seep in rather than running off. Their roots bind the soil and stop running water from eroding it. Finally, legumes protect the soil from the direct heat of the sun, helping it retain moisture. They break the wind and stop soil particles from being blown away. Green manuring can be used in various types of soils. Its benefits, however, are to be expected in the long run rather than immediately.

There are many legume varieties

Since we have described the value and the use of legumes for improving soil fertility, let's now have a closer look at some of the most common legumes in Kenya; there are also others, very well known are the nyayo beans. See also the information about Lablab or Njahi on page 6.

Anja Bengelstorff, Peter Kamau

Rose Coco: Rich in protein, this variety can do well in areas with an annual rainfall of over 1000 mm which should be well distributed. It is popular with many consumers in the country. A 90-kg bag costs Ksh 2800.

Soybean

(*Glycine max*): One of the most nutritious foods, mostly processed as oil; needs as much rain as maize, grows in a wide range of soils, but does not do well in



acid soils; has both creeping and erect types; very rich in protein. Seeds: Ksh 450/kg.

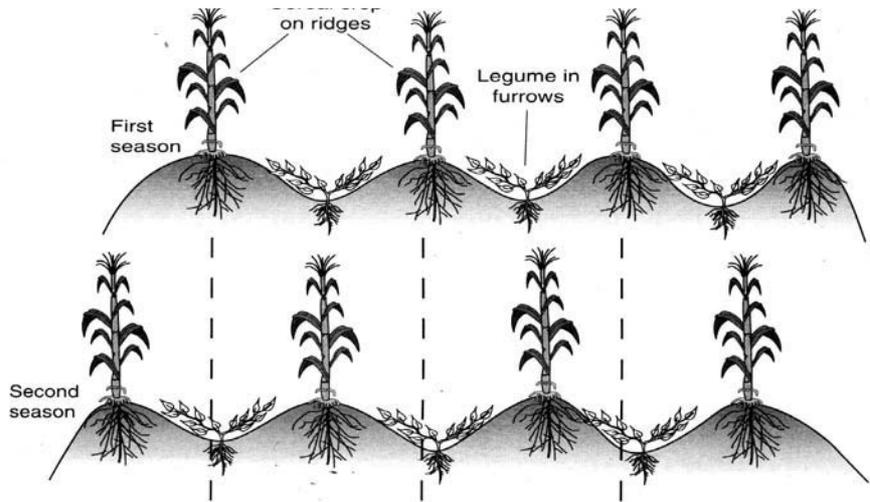
Cowpea (*Vigna unguiculata*), indigenous to Kenya; leaves and seeds widely used as food, but also good animal fodder; grows in semi-arid and sub-humid climate and low to medium altitude, in sandy to clayey



soil; long-maturing varieties best for intercropping with cereals; seeds: 75 KShs/kg.

Lucerne

(*Medicago sativa*): Used as fodder; grows in semi-arid to sub-humid climates and low to medium altitude as well as in a wide range of soils, but not too much rain; erect legume. Seeds: Ksh 700/kg.



Green grams (*Vigna radiata*): Most commonly grown in Kenya; used as food and fodder; grows in sub-humid



to humid climates and low to medium altitude as well as in a wide range of soils; drought-tolerant; edible beans and leaves. Seeds: Ksh 75/kg.

Desmodium

(*Desmodium intortum*): Used as fodder; grows in sub-humid to humid climates and medium to



high altitude as well as in a wide range of soils; trailing and climbing legume; rich in protein; suppresses growth of striga weed. Seeds: Ksh 1,200-1,500/kg.

Pigeonpea

(*Cajanus cajan*, mbaazi/Kiswahili, njugu cia gikuyu/Kikuyu): Used as food (peas), fodder (dry leaves and pods) and firewood (stalks); grows in semi-arid to humid climate (depending on variety) and low to high altitude, in sandy to clayey soil, erect legume, good at recycling phosphorus, rich in protein. Seeds: 520Ksh/kg



Red Haricot (*Vairimu- Kikuyu*): Rich in protein, it is grown in medium and high potential agricultural areas of the country. It is the most popular bean variety among Kenyan farmers and consumers. Grows well in areas with well distributed rainfall (750-1000 mm annually). Currently a 90-kg bag is going for Ksh 2300.



Chickpea (*Cicer arietinum*), used as food since rich in protein, carbohydrates and minerals; drought tolerant because of deep tap root system; needs fertile sandy, loam soils with good internal drainage, but not too much rain; grows short and rather flat; sensible seeds

Groundnut (*Arachis hypogaea*), used as food, residue from oil processing used as animal feed; grows in semi-arid to sub-humid climate and low to medium altitude, prefers sandy but fertile soils; requires moist conditions during growth and dry conditions at harvest time; rich in protein.



Water harvesting saves a community

Farmers in Lare now have enough water for domestic use, livestock and even crop production and agroforestry.

Peter Kamau, Njoro

It is six kilometres from Naishi to Stoo Mbili in Lare Division of Nakuru district, yet this is the distance Elishiba Wanjiku, a mother of three, had to cover every three days to collect water for her family. For her three cows, she had to buy the commodity from vendors at Ksh. 20 for a 20-litre jerrycan. "Sometimes I would go without water for up to three days. For us women it was a nightmare," she says. Her problem mirrors that of hundreds of families in this unlucky area, which has very little rainfall and underground water sources. Prolonged drought and conflict over water and pasture between communities had made the situation worse.

Area has inadequate rainfall

Lare division is one of the driest in Nakuru district. Located on the lee ward side of the Mau escarpment, the region receives an average of 600 mm of rainfall that is very erratic and unpredictable. To make it worse, the rock structure has poor water retention capacity. The high fluoride content in a few areas with water makes it unsafe for use.

Determined to overcome the water problem, the community decided to come together and look for ways to harness the available water resources. The first step they took was to rehabilitate abandoned surface dams used by colonial settler farmers to water their livestock. The Department



The Naishi dam (above). Farmer Elishiba Wanjiku (below) draws water from her home dam.

of Agricultural Engineering at the Egerton University together with The Kenya Agricultural Research Institute (KARI) and the Ministry of Agriculture also chipped in and offered training on water harvesting and storage.

"We developed a comprehensive training programme for water harvesting in the community. The main problem was to make them understand that a lot of runoff water was going to waste during the rains. If the water was guided through channels into the field to grow crops and the storage capacity for domestic use increased, then the problem would be solved," says Prof. Mathew Chemelil of Egerton University.

A dam for every homestead

The Professor says the aim of the project was to enable each of the households to construct dams which could harvest at least 60 cubic metres of water for both domestic and livestock use and at the same time save enough runoff water for crop produc-

tion, an objective the project has now achieved.

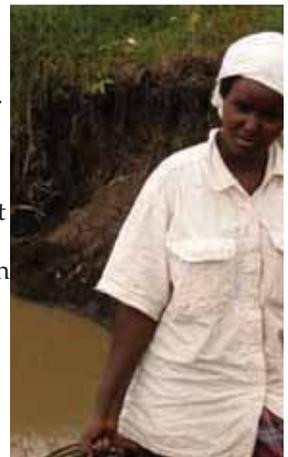
"The Rain Water Harvesting for Crop and Livestock Production" project has changed the life of the community in Lare for the better. Today nearly every homestead in the area has a surface dam where runoff water from the roadside is channeled and stored for use during the dry season. Also almost all the homesteads have harnessed roof water for domestic use.

Increased water and income

Elishiba Wanjiku is a member of Mugumo Self Help Group. Wanjiku uses her household dam until it dries up in December or January every year; she then has to rely on the community dam for her water supply. To reduce evaporation from the dam and prolong its water-holding capacity, she has planted a local weed that spreads on its surface. All the water from the road near her homestead is channeled into her 1 hectare farm where it helps to grow maize, beans, cabbages and even trees.

Her neighbour Esther Wanja has gutters in every building in her compound and the water goes into a ferro-cement tank. She says that the water can

sustain her family until the next rains. Bananas, pawpaws, pomegranates and other fruit trees dot her kitchen garden which is supplied with runoff water and a surface dam in the compound.



Dam is well managed

With assistance from the Rain Water Harvesting for Crop and Livestock Production project, the 50-member group rehabilitated the Naishi dam 15 years ago. The dam has produced a rich biodiversity of wildlife, birds and plants which have changed the local climate and vegetation. Today the dam is a showcase of how the proper management of a water resource can help a community. Runoff water is allowed to seep into the dam to filter out any impurities during the rainy season. Trees are planted around it to reduce evaporation. The group has started several income-generating activities from the dam, including beekeeping,

fishing and tree nurseries. Income from these activities is shared among the members. There is a management committee which has employed a caretaker to stop misuse and pollution of the water. The committee has also set rules for water usage. The rules forbid watering animals directly from the dam, washing clothes and bathing in or near the dam.

Members must also pay Ksh10 every month to help pay the caretaker and for general maintenance. They are then issued with a ticket, which they must produce to be allowed to draw the water. Non-members pay Ksh 10 for every 20-litre jerrycan of water they get from the dam.

Silage is good fodder for the dry season

Although it is a good method for preserving fodder, many farmers do not make silage.

Philomena Nyagilo

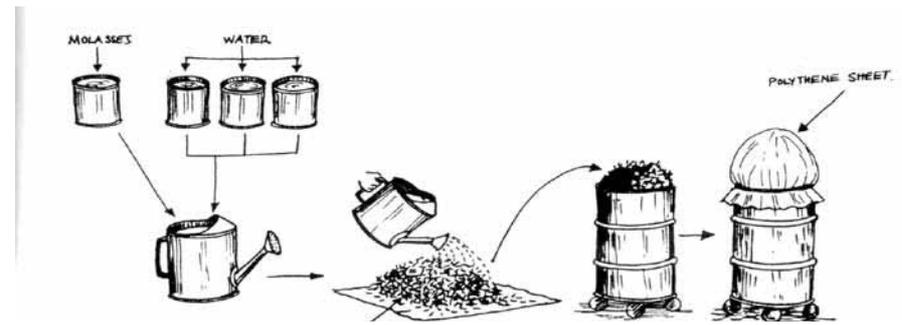
Silage is the technique of preservation of green forage material by controlled fermentation under anaerobic (no air) conditions. The ensiling (silage making) process results in preserving the grass under naturally produced acidic conditions, which effectively keeps the crop from decomposing. Of course, it needs labour and material just as hay-making does, which we featured in the December issue.

The common materials for making silage are Napier grass, maize, sorghum and sugarcane tops. To make good silage, you should use fresh, high-quality fodder crops. Harvest grasses at or just before flowering; harvest maize or sorghum during the "milk-stage", when the grains are soft and milky inside. The container used to make silage can be a trench, a pit, a drum or empty fertilizer bags with polythene lining, polythene tubes and plastic shopping bags. The container is called a silo.

Below are steps in silage making in a pit. It is a simple form of a silo in which excellent silage can be made.

Step 1: Build the silo before the end of the green season, when there is still plenty of green fodder available. The pit silo should be located on high ground so that no water will run into it when it rains. The pit should be smaller at the bottom than at the top, so taper in the sides a little. This will make the structure stronger.

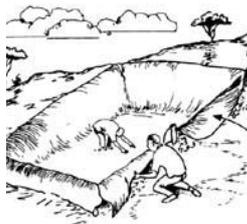
Step 2: Cut the crop just before flowering, as the protein content of the crop is high just before flowering. Leave the freshly cut fodder to dry in the sun for 2 to 3 hours, then chop the green fodder into small pieces about 1 to 2 cm in size. Remember, when harvest-



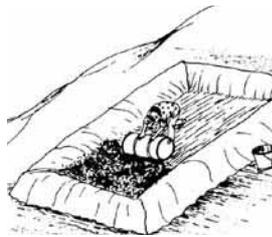
Steps in making silage in drums, empty nylon bags with polythene lining, polythene tube and plastic shopping bag silos. (Illustration courtesy: Coping with feed shortages/KARI)

ing, you should plan for dry days, as 2 inches of rainfall can reduce quality. Forages that are too high or too low in dry matter may not make good quality silage. You can try yourself by making a fodder ball. If the fodder ball falls apart quickly, it means it is too dry and you must add a bit of water to the fodder before putting it in the pit. If the ball falls apart slowly and there is no water left in your hand, then it is ready to put in the silo.

Step 3: Place plastic sheeting on the bottom and on the sides. The important thing is to prevent the fodder from touching the soil. Seal the pit to prevent air and water from getting in.



Step 4: Place the chopped material into the plastic-lined pit. Spread uniformly into layers of 30 cm thick and compact each time by using a suitable weight to expel air. You can use a drum full of water; press down also with the feet and trample the material to expel the air. It is important to have as little air in the pit as possible. This reduces the chance of mould and yeast growing and helps stop the silage from spoiling. Repeat this until the pit is filled to a dome shape, and fill the pit as quickly as possible. Over the top of each layer you should spread evenly a handful of salt and some molasses (for 1000 kg of green material you need 15-20 kg molasses). Molasses is a thick syrup produced as a by-product in sugar making. Molasses provides readily available energy and minerals (with the exception of phosphorus)



and helps speed up the preservation process and gives higher quality silage. Dilute the molasses by mixing with water in the ratio of 1:3 and sprinkle this mixture over each layer of chopped forage. Use a watering can for a uniform distribution of the solution.

Step 5: When the pit is full, add some paddy straw and cover it with a plastic sheet or some gunny sacks. Finally, you should cover the whole pile with a thick layer of mud to prevent air and water from getting in. The material is ready for use in about 3 weeks.

The silage, if properly made, should be ready for use in 90 days. Good silage smells fresh and fruity and is light yellow brown or green. If the silage smells rotten and is black and slimy, then it is not good for your cow's consumption. If this happens then something went wrong and the silage should not be fed to the animals. After the pit has been opened, keep it covered with the gunnysacks or a plastic sheet to keep the silage in good condition.

How big should the silo be?

If you will feed 2 cows for 90 days, you have to count as follows: 1 cow eats 40 kg per day, 2 cows 80 kg. That means that for 90 days they will eat 7.2 tons (7200 kg) of silage. A 500-kg weight of silage is equivalent to 1 cubic metre. If you make the silo 2 m wide and 1 m deep, the length of the silo has to be around 8 m. This will hold around 8 tonnes of material, which can be produced on 2 acres (about 1 ha) of land. Instead of one long silo, it is more advisable to have several short ones. It is easier to get the right slope, to fit the size of the plastic, to compact the silage properly in a smaller pit. Silage that is not required for feeding can be kept undisturbed.

Feeding silage to dairy animals:

- Feed a little silage at a time until the animals are used to the feed.
- To avoid silage smell in the milk, don't feed silage to milking animals right before milking, but wait until immediately after milking.
- To avoid losses after opening the silo to collect feed, cover the silo immediately after you remove enough silage for the day.

You can make money with Njahi

"How many bags of Njahi does 1 acre produce?" asks a farmer with mobile number 0735 283 645. "What is the average price in the market? I am asking this because I would like to start planting njahi".

"Njahi" is the Kikuyu name for dolichos or lablab, a popular legume of the bean family which produces grains and leaves that are delicious and nutritious. The plant makes the soil fertile by adding nitrogen. The leaves can also be ploughed into the soil to serve as fertilizer for the following crop (see also pages 2 and 3). Njahi plants produce many leaves that cover the soil and prevent soil erosion. The leaves of lablab are also a rich source of protein for livestock. Dolichos are mainly grown in central Kenya, but farmers in the North Rift region have started growing it as it fetches better prices than maize (a 90-kg bag is currently selling at Ksh 3,600 in Nairobi). Farmers in the North Rift prefer the black variety.

To grow njahi, land should be well prepared. Planting is done at the beginning of the rains. When it is intercropped with maize, the spacing for maize should be 75 x 30 cm. Dolichos are then planted in between maize rows at a spacing of 60 cm from hole-to-hole at two seeds per hole. Fertilizer application is not necessary if it is already used for the maize. When planted alone, a spacing of 45 cm from line-to-line and 20 cm from plant-to-plant is recommended. While planting, apply well prepared organic manure if the soil is poor. Weed twice whenever weeds appear. Dolichos mature after about five months. Farmers should harvest the pods as they mature and dry. Thresh, clean and dry the beans. Harvesting continues for about 6 months. After harvesting, cut the dolichos and leave them on the ground. The residue can be incorporated into the soil during land preparation in readiness for the



next crop. The fertilizer from dolichos can increase the yield of any crop planted in the following season.

The yield per acre is about 4.5 bags. Research shows that a farmer can make Ksh. 36,000 per acre of dolichos compared to Ksh 20,000 from maize in one season on the same size of land. Dolichos can do well in poor, acidic or alkaline soils. They can withstand drought once established.

Rabbits are a good source of protein

Bernard Gitau Gikonyo (0720 566 049) says: "I am a farmer from Makuyu-Maragwa. I was told by a friend that there are rabbits of 7-9 kgs. Where can I get the best type?"

There are some large breeds of rabbits, the Californian and New Zealand White. We purchased our breeding stock from the government breeding veterinary station in Ngong. Rabbits breed very quickly and are said to be the most efficient and cost effective converters of vegetation to protein. That is, they require very little food to produce one kilogramme of meat compared with any of our other meat animals such as pigs, chickens, goats, cattle, etc. cows etc. Culturally, some Kenyans believe they are only to be eaten by women and children! This really should not be the way of thinking in today's age. Rabbits are easily managed, quick to reproduce and are tasty too!

After researching further, a study done in Kenya (1981 Owiro) showed that rabbits produce a sale weight of approximately 2.3 kg at 7 months of age. They reproduce on average four times a year, with an average of 7 young ones. In a future issue we will have an article on rabbits.

Comfrey is good for compost

"How I can get comfrey seeds or plants?" asks Daniel Kiteme, Box 70, Ngwata.

Comfrey goes by the local name of mabaki (Kikuyu) and is surprisingly, found in many shambas around the country. It can be propagated from 2.5 cm (1 in.) root cuttings. When choosing a site for planting comfrey, make sure it is a permanent site, as once established, it is very hard to relocate. This is because the plant has roots that are able to penetrate 3 metres into the ground, which remain viable for months after the plant parts above the ground are removed. Given the right conditions such as rain, these roots are still able to send a shoot from such depths and continue to flourish. Plant root cuttings at a depth of 5 cm (2 in.) in good rich soil. Keep the soil moist and within 2 weeks or sooner, you will see the root will have sent up two or more leaves. Try to keep the comfrey growing in an area that is shaded part of the day. The plant does not like severe direct sunlight. It is also very important to keep the ground slightly moist and once in a while feed the plants with some nutritious compost.

We have many beds of comfrey located around the farm, allowing us a continuous supply. We use the leaves in our compost, to make liquid teas, to make a liquid concentrate, directly in the planting beds, and also as an animal feed.

We have noticed comfrey is available on many rural farms and suggest you ask around your community first. If you are unlucky, however, contact The Organic Shop in Nairobi (Tel. 467 4086) where they are readily available on order.



A comfrey flower

Su Kahumbu answers your questions



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Muriithi Simba says: Copper is allowed

Su Kahumbu's advisory role to the readers of *The Organic Farmer* is commendable. She appears authoritative in her replies to various problems encountered by the aspiring organic farmers.

I ensure I go through her column with keen interest, to acquire additional information on solutions to issues raised by farmers. However, her reply to Sylvester on tomato growing in *The Organic Farmer* Nr. 18 could have had extra information on research conducted on milk by KARI and CABI-ARC as facilitators (refer CABI in Africa-2001). In this case, participatory action research by Thayu Farmers' Field School at Githunguri confirmed the effectiveness of milk in delaying the first appearance of tomato blight but they also claim it

did not stop the disease progression once it had started. It is possible that further research could have revealed the right timing of milk application to enhance a higher degree of disease inhibition on tomatoes.

Sylvester could have been advised on other acceptable and effective fungal disease control measures on tomatoes, such as the use of Bordeaux mixture, copper sulphate, copper oxychloride and sulphur. These are permitted by the Soil Association of UK, a recognized certifying body. It is most likely that Su Kahumbu's certifying body (EnCert) has no objection to their use and these copper solutions could be recommended for use with the necessary precautions.

Yours sincerely
J.T Muriithi Simba

Su Kahumbu answers: Copper is restricted

Thank you, J.T. Muriithi Simba, for your much appreciated comments, highlighting some areas I had omitted in my response to Sylvester. Sulphur is indeed allowed by most, if not all, certification bodies. Our cheapest, most natural, and in most cases available way of using sulphur is to make a foliar spray using nettle (thabai) for this purpose. This information has been mentioned in several editions of *The Organic Farmer*.

Standards are different

The use of copper Sulphate and copper oxychloride according to the Soil Association Standards is 'Restricted' and requires approval from the Certification Department before use. The East African Standards, soon to be enforced, have conditions of no more than 8 kg/ha per year for any copper salts. EnCert states the following: "Copper salts are also restricted and may be used only in the case of immediate threat to the crops". EnCert further states that copper salts may be used under the following conditions "From January 2006 up to 6 kg per hectare per year".

As you can see, different standards allow for different applications. Most standards also recommend that pests and diseases shall be controlled primarily by a combination of

a) an appropriate choice of species and varieties;

b) a balanced rotational cropping to break the pest and disease cycles;

c) proper attention to hygiene within the holding to minimize the spread of pests and diseases.

Our safest recourse if we choose to use any restricted substance is to ensure that we use adequate record-keeping to prove the application rates, dilutions, etc.

Personally, I have never used any copper salts and chose to grow cherry tomato types that are more resistance to blight. However, I do have a farmer in Wangige who is currently producing tomatoes successfully using copper oxychloride, and I shall be relying on his records which shall be inspected by EnCert to assure me and any other organic trader or consumer that he is within the recommended limits.

Milk is not always useful

Thank you for the information on the study that was carried on milk. I too have used milk and realize it is not effective when the disease is in a progressive stage. I shall do a little research and see whether further statistics from the same study were found. I also wonder if different dilution rates of the milk make a difference in the spread of the disease, and again would like to ask any successful organic tomato farmers to share their findings with our readers.

I have changed to organic farming

I am happy and thankful for your research in organic farming. Thank you also for the information you are passing to young organic farmers across the country. I am now practicing organic farming since I read the information on how to make and prepare organic manure from your newspaper. On my farm, I use the organic manures to plant and top dress crops. Please consider me and send me one magazine on how to prepare and continue using this organic manures. More so, I want to get the experience of other organic farmers who have successfully used natural methods to control pests and diseases on their crops. I would like to assure you that, I will go ahead to form a Bingwa organic farmers association for the young generation.

David Kamotho Rotich, P.O Box Maki-menya, Via Sotik

We need more on plant extracts

I am the chairman of the Kaponpon Youth Group for Sustainable Development. We were happy to read last month's newspaper which was the first for our group. The paper has actually attracted our attentions very much. Farmers do respond positively to the ideas in this newspaper. Therefore, keep on sending us more copies and if possible increase the number in order to reach more members. If possible give us more information on important tropical diseases and how to treat them with plant extracts because we want to become organic farmers. Even we, the Pokot people have some herbs that we use to control a variety of diseases. We also need more information on dairy goats.

Samson Kuyo, P.O Box 211, Kapenguria

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 contact us. We shall get back to you!
SMS ONLY

Tuma maoni yako! Asante.



tips and bits

from farmers for farmers

Farmer invents tree watering method

In 1998, Elijah Kimani, a resident of Pwani area in Lare division of Nakuru District, decided to plant trees. But he was in a dilemma: How would he sustain the trees in an area that has very little water? The few water from the roof of his house would not be enough for his family and 4 head of cattle including sheep and goats. Then he had 3500 seedlings in his tree nursery.

"I knew using a normal bucket was going to be a real headache, as I could not manage to water all the trees", he says. This was the moment that the idea of making a watering device struck him. He would try to make a simple drench pipe that would use the ordinary knapsack sprayer to inject water into the soil. When he tried it, it was an instant success, as he could manage to water up to 200 trees in a day. Although there was drought the following year, all his trees managed to grow and now he has a forest.

The drench pipe, which is ½ wide and 1 metre long and has threads



Elijah Kimani and his invention (TOF)

like a normal GI pipe, is attached to the ordinary knapsack sprayer. The lower end has 14 holes through which the water flows. A foot peddle at the lower is used to drive the pipe into the soil near the plant. All the operator needs to do is to pump 4 times and the pipe will release 4 glasses of water into the soil, which is enough to sustain the plant for a week.

Farmers in need of additional information on this invention can get in touch with Kimani at the following address: Elijah Warui Kimani P.O. Box 236, 20107 Njoro, Tel. 0721 703 406.



Lichens do not do any harm!

While visiting South Kinangop, a farmer asked if the lichens on his apple trees were harmful. A visitor from Switzerland answers:

"I was very happy to find something which is quite familiar to me, as we have exactly the same "stuff" on our trees in Switzerland. These organisms are called lichens.

I can assure you the lichens on your trees do not affect either the trees or the fruit in any way, because they don't need anything else but sunlight, air, and moisture for their existence. They indicate a relatively moist environment and clean air. There is definitely no need to fight them! As they grow very slowly, I assume your trees are rather old trees. You will



not find lichens on very young trees or on young parts of older trees, not because these are healthier, but simply because lichens have not had enough time to develop.

In Switzerland, we replant trees for commercial production every 10 to 15 years, because usually their yields start to decline after this period. This means that there must be other reasons for the problems you encounter when your apples are falling down before

Market Place



Organic Market. A German-based company seeks organic products from Africa. The company is in search of fair trade and organic products, particularly cacao, coffee, fruits, vanilla and all sorts of spices. Their contact information has been included below. They speak English, French and German.

Franz Joseph Witte, Rohstoffagentur Witte & Partner
 Uppenbergsstrasse, 948149 Münster, Tel + 49 251 1627837, Fax + 49 251 2007685
 info@rohstoffagentur.de,
 www.rohstoffagentur.de,
 DE-001-Öko-Kontrollstelle
 D-NW-1-9567-D.

Export. A German-based company would like to buy organically certified fruits from Kenyan farmers. They prefer mangoes, avocados, paw paws, and pineapples (Victoria and Baby varieties). Farmers groups or individuals should be able to supply a minimum of one tonne per week. They should indicate the season when they can deliver supplies. Contact Wachira Waikwa, e-mail: nefshi@yahoo.com

Tissue culture bananas. Do you need organically grown tissue culture bananas as from January 2007?

Contact J G Njoroge 3N-Harvest, P.O. Box 82 Saba Saba Tel. 0721638034.

Dairy goats. Miti Mingi dairy goat breeders have four mature pedigree bucks (Male goats) for sale call Samwel Njoroge Tel. 0723 793414

they are ripe. In order to tell you more, I would need more information, and maybe a close look at your trees and apples. Are the trees well nourished? Is there enough moisture in the soil during the growth and ripening period of the fruits? Are there any symptoms of disease or pests on the tree foliage (leaves) and on the apples? If yes, I would need some good photos. And what about pruning for rejuvenation, or thinning of the fruit in case the apples are too abundant? Do you practise this good fruit tree husbandry?

Feel free to ask for further details."

Theresa Székely

Theresa Székely is Agronomical Engineer and works at the Research Station for fruit-growing and wine-growing in Wädenswil, Switzerland.