

The Organic Farmer

The magazine for sustainable agriculture in Kenya



Nr. 60 May 2010

Congratulations, winners!

TOF- Ibrahim Wakayula emerged at the top of the 172 farmers, who took part in the farmers' competition marking 5 years of *The Organic Farmer* magazine.

Each of the entries had an interesting idea that farmers read in TOF, and which has changed their lives.

What a bulk of knowledge, of encouraging ideas, of hard working farmers!

More prizes

As an appreciation of the positive response from farmers across the country, we increased the number of prizes from 5 to 15 and rewarded 36 more farmers with a consolation prize, a good *panga*. All farmers who won a prize will receive a letter of notification. The prizes will also be delivered to the winners in the coming 4 weeks.

In this issue, on page 5, we introduce to you entries of the first 5 winners. We shall introduce to you ideas from the other 10 winners in the coming TOF issues. Page 5

The first 15 farmers who won top prizes in the TOF competition

	Prize	Farmer	Idea	Region
1.	Water tank	Ibrahim Wakayula	Poultry, cassava	Kimilili
2.	Drip Irrigation kit	Salome Nanjala	Fodder, Calliandra	Bungoma
3.	Knap Sack Sprayer	Johnson Mwaura	Records keeping	Ol Kalou
4.	50 litres milk can	Wilson Barchiba	Lupins	E/Ravine
5.	Money maker pump	Ann Karue	Soil conservation	Karatina
6.	Drying tent	Daniel Bore	Fish arming	Kitale
7.	Bicycle	Noah Ofundi	Poultry keeping	West Pokot
8.	Knapsack Sprayer	Emily Chepkorir	Tree tomatoes	Molo
9.	Wheelbarrow	Lucy Kibe	Animal fodder	Nakuru
10.	Barbed Wire	Austin Kyengo	Composting	S. Hamud
11.	Saw, pliers, hammer	Stanley Muhia	Mushroom	Ol Kalou
12.	Horse Pipe	Samuel Ngure	Silage	Naivasha
13.	Jembe + fork	Michael Chumba	Green House	Nandi
14.	Chicken wire	Lina Cheruto	Poultry	Kitale
15.	Pruning scissors	Roseline Wambua	Soil Improvement	Kangundo



The proud owner of the first prize, a water tank worth Ksh 18,000, is Ibrahim Wakayula, Kimilili. He took farming as a business and succeeded in an enterprise, which many farmers often ignore: Rearing of indigenous chickens which brought him a good return and enabled him to diversify into other farming enterprises. He learnt about the indigenous chickens management from an article in TOF and immediately decided to try - and he succeeded.

Congratulation, Ibrahim Wakayula!

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Dear farmers,

We are really humbled by the overwhelming response of our fellow farmers to our competition marking 5 years since we started publishing *The Organic Farmer* magazine. And we can also reveal that it was not an easy task selecting a winner because each of the farmers had an interesting idea that they had tried and it worked. We received more than 170 entries, from every part of the country, men and women, written by hand, typed, some in English and others in Kiswahili. This active response is really encouraging, since we know that farmers are very busy people. They wake up early and retire to bed late in the evening and may not even find the time to sit down and write.

We are proud to work with such a committed small-scale farmers community. In all entries, none of the farmers sought any assistance to implement what they learnt; more over, all were determined and self-confident. They managed through trial and error, faced many hurdles but succeeded at last.

That they went ahead and tried to adopt new technologies in sustainable agriculture and organic farming is quite commendable; each of the farmers had something interesting that they learnt from TOF and put into practice on their shambas: Feeding cattle, rearing dairy goats or indigenous chicken, compost making, tree tomatoes etc. Others have gone into mushroom production and managed it quite well. Half of the entries showed how farmers were coping with poor soils. We are indeed impressed by the perseverance and the commitment small-scale farmers show in improving soil fertility.

No doubt, this is a strong sign of hope; our work in the last five years has not been in vain. The *Organic Farmer* will continue to provide farmers with all the information that they need to make organic agriculture a profitable enterprise that creates a better future for the farmers and their families.

Farmers are easy targets of exploitation

TOF - Fellow small-scale farmers think they have difficulties producing and selling various farm products. They are not the only ones facing this problem. The report of a wheat farmer from Mau Narok is a testimony of the fact that it is difficult for local farmers to

make any profit. Farmers are exploited by middlemen, local authorities, police and buyers of the farm produce. The culture of corruption has become so widespread that the farmer asks: "I wonder if it makes any business sense to grow wheat again."

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Cheating, exploitation and bribery

The tribulations of a wheat farmer during harvest, transport and marketing of his wheat

TOF - A farmer, who had hired a 20-acre piece of land in the lower Mau-Narok area for planting wheat, wrote to us the following story. He requested us not to mention his name.

"It is January 2010, and my wheat is due for harvest. Rains have been pounding the region since Christmas, so there is danger of wheat germinating while in the *shamba*. Harvesters are difficult to get, with every farmer scrambling to get one. I finally manage to get two harvesters and a hired tractor to pull them out of the soggy sections of the farm in case they get stuck.

A bribe for the driver...

The harvesters are ready. But the road is in such a poor state that no lorry is willing to transport wheat from the area. On the third day, I manage to get a lorry - after I agree to part with Ksh 5,000 for the driver to 'take the risk' of coming to the area and an additional Ksh 150 for every bag of wheat he would transport. Finally, the harvesters get down to work and we manage to harvest about 230 bags in about five hours.

The lorry driver says he cannot take more than 200 bags. We get stuck just a kilometre from the farm. We spend the night and the better part of the following day trying to get it out of the mud. Finally, a 4-wheel drive tractor manages to pull it out. This costs us another Ksh 4,000. Of course, it is clear that the lorry and the tractor owners know we are in trouble and are out to benefit from our misery.

... and bribes at the roadblocks

On our way to Nakuru we have to pass through three roadblocks. One is manned by a shuka-clad local county council clerk. He menacingly demands that we pay Ksh 100 in cess for every bag of wheat we are carrying. Finally, we settle for Ksh 1,500 for the entire load on condition that we do not claim a receipt. We pay and move on; at two police roadblocks we have to pay Ksh 200 each to be allowed to pass.

On our second trip we have to hire another lorry and a tractor to transport the wheat from the *shamba* to the lorry, which stops at a safe distance to avoid



A good harvest does not always guarantee good income for producers

the bad section. The only tractor available charges us Ksh 4,000 for every trip although the tractor has small trailer that has a capacity of 35 bags only, we are so desperate that we are forced to accept the exorbitant charges.

Greedy middlemen ...

Middlemen have been informed we are harvesting. They want to buy the wheat. Each of them says they will take samples. If the moisture content is above 22 %, they would buy a bag at Ksh 1,500 on condition that we top it up each with an extra 20 kg. It is common knowledge that most of the middlemen use fake moisture meters.

I avoid the middlemen, but I am now running short of money. I call workers at home to dry 70 bags which we sell at Ksh 1,700 a bag, since we need the money for paying the transport of the remaining wheat. Again, at the roadblocks we pay the same charges as on the other trips.

... and exploitation at the mill

After a week of drying, we take the first consignment of wheat to a Kisumu miller at a transport cost of Ksh 200 a bag. This proves the most difficult part of the whole marketing operation. For the wheat to 'pass' all the tests, we have

to pay money at every stage of tests: To the one taking samples from the lorry, to the laboratory technicians, to the loaders at the tipping bridge who empty the wheat into the silos. At the end of the whole exercise at the millers, it costs us Ksh 32,000.

Farmer's options....

What if they had rejected my wheat, even after paying all the bribes? The farmer has only two ways out:

Alternative 1: They can approach the milling officials and offer to pay a higher bribe, sometimes up to Ksh 60,000. The lorry is then driven to a garage in town where the number plates are changed. From there, the lorry with the same wheat is driven back to the miller as a 'new consignment' where, it 'passes' all the tests.

Alternative 2: The farmer sells the wheat at a throwaway price to middlemen hovering around the milling plant. The wheat is offloaded into a different lorry, a negotiated bribe is paid and the consignment is sold to the same miller, often at a higher price than the farmer could have been paid!

After this experience, I wonder if it makes any business sense to grow wheat again."

The Organic Farmer is an independent magazine for the Kenyan farming community. It promotes organic farming and supports discussions on all aspects of sustainable development.

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Cows are easily infected in dirty cowsheds

My cow likes kicking during milking. Could this be a sign of disease or abnormality?

Theresa Székely

This question of a farmer from Buyangu is similar to some other enquiries we got in the last few months. Quite a number of farmers reported problems with milking and asked for advice on mastitis. Usually, we send these farmers an article from TOF issue Nr 34 of March 2008. However, we consider it as necessary to come back once again to the problem of hygiene in the cowshed.

Kicking during milking or when touching the udder is usually a sign of pain and typical of mastitis (udder inflammation) or udder injuries. It is most likely that something is wrong with the cow's udder, but she may also not be satisfied with your way of milking. The following list may help you to identify the problem.

- Is the cow used to being milked? When did she start kicking?
- Did you check the udder and teats for injuries?
- Do a check for mastitis (udder inflammation):
 - Check the first milk drops from each teat separately for flakes or clots in the milk. Use a small container or a plate with a dark surface for your investigation. Because mastitis is a frequent problem, dairy farmers worldwide do this before every milking.
 - Check the udder: Are there any swellings or red areas? Does the udder feel soft after milking, or are there parts that still feel hard or hot?
 - Did the milk yield drop lately?
 - Check your milking technique

Identify affected udder

If you find any signs of mastitis, identify the quarter which is affected. This will be the quarter which is most sensitive and the cow will kick if you touch it. Mastitis is a painful disease. To relieve the pains and to reduce the pressure, you may milk the affected quarter every two to three hours for some days – in spite of the kicking - or until the symptoms disappear. Milk gently and avoid pulling the teats. Discard the milk from this quarter. If the signs are not severe, you may feed the milk to calves or let the cow's calf suckle the infected quarter. In severe cases, antibiotics must be given as advised by a vet.

Causes and prevention of mastitis

Bacteria entering the teat canal from outside cause mastitis. A main cause of mastitis is dirty housing. Keep your stable and the cow's pen clean and

dry! Remove all droppings and urine twice a day. If a cow has to lie down on a bed full of dung and urine after milking, bacteria are likely to infect her teats. Cows in dirty stables are in danger of suffering from a number of serious diseases. Mastitis and foot diseases affect milk production and fertility. *Coccidia* (bacteria) cause diarrhoea in young animals.

Hygiene

The second factor is poor milking hygiene. Bacteria can be transmitted from dirty hands, towels, and a soiled udder.

- Clean your hands and nails with soap and water.
- Wash the cow's teats with clean water and dry them using a clean, dry towel (each cow should have its own towel) before every milking. Udder, hands and teats must be completely dry before you start milking. This will prevent bacteria from running down the teats and entering the teat openings.
- Wash or brush the udder only when it is very dirty and there is a danger of dirt falling into the milk.
- Affected cows and affected quarters must always be milked last! Otherwise



This cowshed is not a comfortable place for a cow (Photo TOF)

you may spread the disease from sick cows to healthy ones and from affected quarters to healthy quarters.

Feed the cow well

Poor nutrition, especially during early lactation, is another risk factor for mastitis. Does the cow get enough good green roughage or hay, mineral licks, and some concentrates?

And last but not least: Mastitis is promoted if milking is done irregularly or if the udder is not completely emptied during milking. A good way to prevent this is to let the calf suckle for some time after every milking. There are additional benefits of this practice: the calf will be healthier, and the cow will produce more milk than if she is only milked, as suckling stimulates her best.

Check your milking technique

A clean and calm environment is essential. A quiet routine, familiar surroundings, gentle handling and washing the teats will stimulate milk release in the cow. You may have to tie the back legs of a kicking cow together using a strip of cloth or leather. If you are using a small seat, you will be more comfortable, too, and it is easier to hold the bucket tightly between your knees that way.

Use both hands

Start milking with both hands on the two front teats. Grasp one teat with your whole hand, exerting a gentle pressure with your thumb and forefinger around the top of the teat. This prevents the milk from flowing back into the udder. Close the other fingers, one by one, from top down, squeezing the milk out. Then release the grip of your thumb and forefinger to allow the milk to flow down

from the udder into the teat again. Repeat the whole process with the other hand.

Try to work in a steady rhythm with both hands. Never pull the teats! stripping will be necessary only with very short teats. Use sufficient good udder cream in this case. Pulling and stripping may be painful and can promote mastitis.

When the fore-udder is nearly empty, change to the back two teats. When the milk flow ceases, you may go back to the front teats, or you may let the calf finish off and take the last few drafts. If the calf is already weaned or is not allowed to suckle, the best practice is to use an effective teat dip right after milking.



The "squeeze"-method as shown in this illustration is the best method to milk cows and goats.

Plant trees for environment and income

Tree nurseries are useful as a source of trees for your farm as well as for sale.

The Organic Farmer

If every farmer was to plant five trees every year, our farms would become important sources of trees in the future, reducing the pressure on our few remaining forests. Trees have also become a source of income for many farmers and even youth groups who have set up nurseries and plantations. Putting up a tree nursery even for commercial use is not difficult; if it is a small farm nursery, you do not need a working shed for soil potting, a tree shade is often enough.

Choosing a site

Avoid setting up a nursery along valleys, hills and sloppy areas.

Selecting nursery soil

Well-composted manure or surface forest soil can be used to make the seedbed (do not use soil from cultivated land!) The soil should be collected and kept in the nursery for at least two months before use; this allows for germination and elimination of any weeds in the soil and also decomposition of crop residue. Forest soil should be sieved to remove stones or undecomposed pieces of trees before being mixed with other ingredients in the following ratios:

- Forest soil 5 parts
- Composted farmyard manure 1 part
- Crushed stones 1 part
- Crushed clay to (0.5 cm) 1 part
- Pine soil (for pine seedlings) 1 part

Seedling bed preparation:

The soil is either put in prepared seedling beds or in polythene bags (10 cm



wide and 15 cm long) or locally available containers such as milk packets, and tins. When using containers, ensure you puncture some holes on the sides and bottom to allow for air and water circulation. The seedbed should be at least 18 cm high.

Water the soil before putting it in containers. The soil should be filled to the top and then pressed to make it firm, leaving a space of 1 cm depth at the top.

Transferring seedling to a bed

If the seedlings are planted in a sowing bed, they can be transferred when they have developed the first leaves with a tiny shoot at the centre. Water the seedbed before pricking (uprooting) the seedlings to loosen the soil around the roots and ensure no damage is made to the leaves during the removal.

Always use a stick with sharp edges or a dippler to dig out the seedlings; place them immediately in a water container to ensure the seedlings roots are not exposed to direct sunlight or dry wind. Hold the seedling by the leaves and not the stems to avoid injury to the stem, which can allow entrance of disease-causing bacteria.

Observe the following tips

- Before planting the seedlings, cut the long roots by a third of their actual size.
- During the actual planting do not bury the stem in the soil.
- Seedlings in a flat bed can either be transferred into tubes or seedling beds. Seeds planted in a seedling bed should be planted in a regular pattern to allow easy access during weeding and root pruning. For fast-growing species like cypress or pine, seedlings are planted at a spacing of 7.5 cm by 5 cm.
- Mark the planting spots on the seedling bed.
- Potted seedlings should remain in the shed for two weeks. They are then taken out and placed under a tree or structure with a light shade after which they should be left to grow in the open. The roofing material in a seedling bed

should be left for two weeks but the shade needs to be reduced gradually for a period of one week. The shade should then be removed completely after one more week to allow the seedlings to harden.

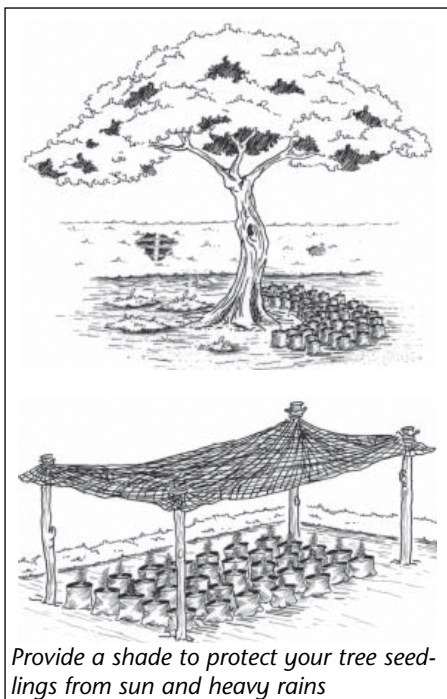
Watering: Watering should be done twice a day, in the morning and in the evening for seedlings that are exposed to sunlight. Seedlings in the shade can be watered once a day.

Disease and pest control

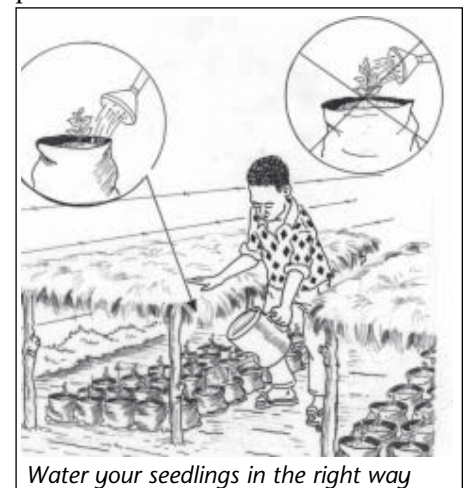
Nursery caretakers should observe the seedlings every day for any sign of disease or pests. These should be reported to forest extension workers in your area for examination.

Planting seedlings in the field

Only healthy seedlings with a high chance of survival should be removed from the nursery for transplanting. They should be of right size (30 cm to 50 cm), which have signs of vigorous growth. Hardening of seedlings (through reduction of water applied and root pruning) should be done. Seedlings should be removed from the nursery with minimum disturbance to the soil holding onto the roots. With potted seedlings, the container should be removed just before planting and the ball of soil loosened to allow free movement of air and water around the plants.



Provide a shade to protect your tree seedlings from sun and heavy rains



Water your seedlings in the right way

Lucky winners of the TOF competition

First prize:

Ibrahim M. Wakayula

A good example of a creative and hard working farmer is Ibrahim Mbule Wakayula of Maeni Cooperative Society in Kimilili, Western Kenya. In September 2007 he read an article in TOF on indigenous chicken. He raised the number gradually to 180 chickens in June 2009; two months later, he sold 100 chickens at Ksh 500 each, in one lot. With this money he bought chicken wire, a portable brooding box; and he planted 600 stems of bananas and 2500 stems of cassava as a diversification process.

He is now a major supplier of cassava cuttings in the district, and his well-managed farm is a model where other farmers and schools come to learn. "TOF encouraged me to prepare an accurate inventory of my own resources and to organize my record keeping", Ibrahim says. "It showed me the preparation of simple feeds and the importance of production standards and diversification, because, as TOF tells us, a farmer has to be a planner, a manager, an accountant and a marketing specialist and a researcher at the same time," he says.



The winner's well-managed farm is a model to other farmers, schools and agricultural institutions who come to learn from him. Ibrahim Wakayula (inset)

Second prize: Salome Nanjala Wamalwa

In 2005, Salome Nanjala sold her local cows and bought a good Friesian cow, which gave her only 7 to 10 litres of milk per day. The TOF article about proper feeding of cows in April 2008 opened Salome's eyes. "I did not know what is meant by basic diet in terms of pasture grasses and fodder." Immediately she planted a lot of Napier grass and about 600 calliandra trees. It was not an easy task since she had to balance between food and fodder production. Salome's cow is now producing more than 17 litres every day. The Calliandra leaves feed her cow and the soil with nitrogen, she says. "My lifestyle has surely changed for the better," she adds.



Third prize: Johnson Mwaura

Johnson Mwaura's contribution to our competition was nearly a brochure. A TOF-reader since 2005, he not only wrote about his strict crop rotation practice, he also sent us a sketch on how he divides his shamba into small portions. This allows him to plant very many different crops according to the rule: When one fails, the other one will grow. More over, he sent us photocopies of his records: From each crop, he knows what he has invested in labour and seeds, and what he earned, this way, he gets a clear picture of the performance of his farming operations. We congratulate him, since fellow farmers in the neighbourhood are now imitating him.



Fourth prize: Wilson Barchiba

Wilson Barchiba, a farmer from Kabiyet location of Eldama Ravine read an article on the advantages of sweet lupin as animal fodder. After a frantic effort in search of seeds, he managed to get one kilogram, which he multiplied till he got enough to meet the feed requirements of his dairy cows. Intercropping the nitrogen fixing lupin with maize also improved Wilson's maize yield considerably; moreover, he discovered that the lupin, planted between his passion fruit rows, repelled aphids due to its strong smell. Now even the neighbours have learnt from Wilson and are using lupin in animal feed formulations; this efforts have improved milk production and income for them."



Fifth prize: Ann W. Karue

It was a hard job for Ann W. Karue, to change her sloppy shamba into a fertile land. But after reading TOF since 2007, she began the fight against soil erosion by digging trenches and planting rows of Napier grass. At the same time she produced compost, improved soil fertility with green manure and dug a water pond to get water for irrigation. After nearly two years, Ann saw the first results in better harvests. Looking back, she says: "The main hurdle was the lack of manpower." But she has overcome this, it gave her incentive to begin rabbit and beekeeping, and one day she will have fish in her pond, which are also a source of water during the dry seasons.



Consolation prize winners

The following farmers have won a consolation prize high quality panga worth Ksh 650. In the coming 4 weeks we will inform them how to collect their prizes.

NAME	REGION
Adwanyika .K. Tom	Jebrock
Bege Bernard	Ortum
Cheruiyot Paul	Olunguruone
Gachara Johnson	Kirinyaga
Karugo Francis	Murang'a
Kiguru Joshua	Kandara
Kimani Mary Wanjiru	Murang'a
Kiplagat Edward	Eldoret
Koskei Geoffrey	Bomet
Lyomu Joseph	Webuye
Makokha Ramadhan	Mumias
Makuthi Simon	Laikipia
Masea William	Subukia
Mathia W. Nancy	Molo
Methuselah Rop	Mosoriot
Muhia Anthony	Kiambu
Mulanda William	Turbo
Munge Daniel	Naivasha

NAME	REGION
Munyari Charles	Subukia
Mwangi John	Kabazi
Mwangi M Wamaita	Kapenguria
Ndathi Joseph	Kerugoya
Ngigi Stephen	Kerugoya
Njeru Wellington	Kianyaga
Ntunyi Joseph	Kitui
Odoyo Gabriel	Nyangande
Oguma Festus	Ngiya
Omuka Livingstone	Naitiri
Otieno Joseph	Homabay
Onyango Grace	Bungoma
Shivachi Jesse	Lugari
Simiyu Chililia Jane	Wacheka
Sprite John	Kitale
Tanui Robert	Kuresoi
Waiyaki Watson	Kitale
Wanyonyi Richard	Bungoma

How to prepare a rabbit skin

Rabbit skins vary widely in quality and value. Different rabbit breeds produce different types of skins. The skins from young rabbits are of poor quality and are of less value and therefore fetch poor prices in the market. Farmers should always prepare skins from adult animals. Rabbit farmers should keep to the following guidelines to produce high quality skins that can find a buyer:

- Check the rabbit hair to ensure it does not come off easily when pulled.
- Exercise care to avoid cuts or tears when skinning the animal.
- Remove any body fat or meat tissue attached to the skin. Turn the skin such that the inner part is exposed out while still warm and moist.
- Use wire stretchers or shapers to stretch the skin to their full length when drying- be careful when doing these to avoid stretching the skin out of shape. The front and rear legs should tied to

the ends of the wires and stretched to retain the shape of the skin.

- Hang the skins in a well-ventilated drying area, not in direct sunlight. After the skins are dry the wire stretchers are removed. For packaging, storage and transport, naphthalene (moth crystals) and parachloro-benzene may be placed in the packaging container to repel any pest that can damage the skins.



Workers in a Chinese factory making jackets from rabbit skin

Answers in brief

Going organic

I would like to practice organic farming and I have 20 acres. How can I go about it?

We get quite a number of questions similar to yours. We have some material which can give you more information how to go organic, for example our TOF-leaflet No. 1 "Organic agriculture" has details on these. Send us your address and we shall send you this information.

Cow leasing

I am the chairperson of Shirombe youth group and I am interested in acquiring a loan in form of a dairy cow as you mentioned in the TOF Nr. 56 January 2010 kindly assist me. Bernard Omboko.

You can get in touch with Juhudi Kilimo, the company that runs the cow-leasing project. Their address is K-Rep Centre, Wood Avenue, off Argwings Kodhek Rd, P.O.Box 10528-00100 Nairobi Tel. 020 390 6000/0711 058 000 0722 420 352.

Potatoes

How can we get the certified potato seed?

Please get in touch with KARI National Potato Station, Tigoni Tel. 020 202 205 2, 020 202 321 3 or 0735 458 481. They will provide you with contacts of certified seed producers near your area from whom you can buy certified seeds.

AI for Donkeys?

Do we have A.I for donkeys, goats, sheep, dogs and chicken?

R. Nyabuya

Artificial insemination services for sheep and goats exists, details of which you can get from livestock extension personnel in your area. But we do not have any information on AI services for the other animals you have mentioned.

The right maize variety

Which is most suitable maize seed that can do well in the current heavy rains? 0726 080 073

Different maize varieties do well in different areas. To know which seed variety is suitable to your area, you can use your mobile phone to get the information. Go to messages, write the word MAIZE * YOUR DIVISION send the message to 3000. You will get a reply on varieties suitable to your division, their qualities and how long they take to mature. You can also call Kenya Seed Company on Tel. 0716 647 693 or 0733 854 713 for any information you may need on seeds. KEPHIS has a similar service; write the message: maize /name of your division, SMS this to 2964- you will get information on seeds suitable to your area. You can also call KEPHIS on 0722 516 221 or 0733 874 274

Mexican marigold against aphids

I collected Mexican marigold leaves, chopped into small pieces then boiled together in water and used the solution to spray my vegetables against aphids which proved to be effective. Now I wonder whether I followed the right procedure. Stephen Ngigi, Farmer in Mutira, 0711 848 005.

It seems that you chose the right procedure. But let me add some remarks about what is important when preparing and using plant preparations. Botanical pesticides can be just as effective as synthetic ones. However, to achieve good results, some experience and knowledge is required.

Crucial points to remember

- Concentrations of active ingredients in plants can vary widely depending on the region and time of the year. This makes it difficult to find the correct and effective dilution.
- The preparations have to be used immediately as many of them lose their effect quickly when stored or exposed to light. Always keep them in a dark place!
- When extracting the plants by boiling or soaking them in water, make a concentrated solution. Use e.g. 1 kg of chopped or pounded fresh plants (or 200g of dried plants) and 2 litres of water.
- Allow enough time for the ingredients to diffuse into the water: at least one hour after boiling, and overnight if soaked in cold water. Strain this concentrate.
- You may have to apply them more frequently than synthetic pesticides because they break down faster.

The effective concentration

The concentrate is usually diluted with one or several parts of soapy water (5g or one teaspoonful of soap for every litre of water). Soap helps to distribute the liquid on the whole plant surface. Often in seeds and fruits (e.g. chilli, neem seeds, castor beans, garlic) pes-



ticidal compounds are more concentrated than in flowers and leaves and need to be diluted with more water. If you have a recipe, follow the instructions. In case the effect is not sufficient, prepare a more concentrated solution the next time! Always record the quantities you used for the preparation and the effects you observed.

Advantages of plant pesticides

- They can easily be prepared by farmers if the plants are locally available.
- Toxicity of most plant pesticides is low. Nevertheless, take precautions to protect your family and farm animals from direct contact with the pesticide during its preparation.
- They often do not harm natural enemies of pests.
- Pest resistance is unlikely.
- They are quickly broken down and plants that have been treated can be eaten 5 days later. tsz

Our final request

We are interested in getting feedback from other farmers who are using homemade plant extracts. What is your experience? e.g. do you know recipes you can recommend? Have you tried preparations that did not work at all?

Copper and FPE

Is it advisable for me to mix copper with Fermented Plant Extract (FPE) in preparation to spray my coffee plants? Charles Kinyua, Farmer in Kamuiru, 0721 931 744.

We would not recommend it. To be sure you obtain the maximum benefits of both products, use each of them separately.

Copper is a very powerful fungicide which acts against all microorganisms. It should be used with restriction and care because it accumulates in the soil and is toxic for plant roots and soil organisms above a certain level. Therefore, use copper products always strictly according to the instructions given on the package!

Organic rice production is possible

Is it possible to grow rice organically? Dennis Muchira, Farmer in Ngurubani, 0722 643 463.

Thousands of farmers do it, otherwise it would not be possible to get organic rice in the supermarket! Nutrient management may be the main challenge in organic rice production. Rice, like all grains, requires sufficient nitrogen. Organic farmers often solve this problem by growing a leguminous crop, a cover crop or a green manure crop before the rice. This will provide a substantial part of the nitrogen. Another part can be provided with animal manures.

Weeds can be managed through crop rotation, clean seedbed preparation,

Prepare your compost on time

I was advised to apply synthetic fertilizer on my compost pile to accelerate the decomposition process. Is that true? Farmer, Gatuto

Yes, it is true. Nitrogen helps the microorganisms to break down mature and coarse plant material. But at the same time it is not particularly a good method to use. If you bought synthetic fertilizer, apply it to the crops directly instead of wasting it in a process that takes place without any expensive inputs. You may use green vegetation or fresh animal manure and urine to have the same effect.

There is no haste! With a bit of experience, it is easy to plan ahead in such a way that your compost is ready when you need it. Deposit all the organic material you find continuously in a heap. Make sure that rain does not soak it, as it washes away all the nutrients.

Preparing the compost

Two to four months before the planting season, just mix the whole material by turning and piling it up again beneath it. Check and correct the moisture if necessary. Cover the new heap up to protect it from rain and sun and leave it to mature. The only thing you have to do now is to make sure that it does not dry out. Sprinkle some household water from time to time if necessary. Meanwhile, start collecting the next batch.

You may also apply compost that is not fully decomposed. Just use small quantities and don't bury it in the soil. Make sure you apply it when there is some rain – it should not dry up in the sun. If you apply your compost together with some synthetic fertilizer (although this is not allowed in organic farming) you will have a double benefit: synthetic fertilizer promotes fast growth, while compost improves long-term soil fertility and storage of plant nutrients and water in the soil. tsz

field flooding, and mulching.

A rotation with different crops is essential for weed suppression and for soil fertility.

Typical practices:

- Rotation rice / grain crop (sorghum, corn, wheat, etc.) / legume (e.g. beans, peas, soybeans, cover crop)
- Rice is rotated with maize and other grains, legumes (e.g. cowpeas), cotton, sweet potatoes, tomatoes
- A frequently used cover crop before organic rice is purple vetch.





Benefits of lime and rock phosphate

Lime and rock phosphate are both very important natural fertilizers.

The Organic Farmer

When limestone or chalk are mined and pulverized, you obtain lime. When you mine and pulverize phosphorite, you obtain rock phosphate. They both have a highly beneficial long-term effect.

Liming

Lime is a natural rock mineral that consists mainly of calcium carbonate. Farmers all over the world use it to regulate soil acidity. Liming restores the chemical balance in the soil, which is disturbed where organic material (residue) is removed from the field and where mineral fertilizers are used regularly.

Farming makes soils acid

Soil acidification is a natural process in certain conditions. Organic acids from plants dissolve calcium carbonate in the soil and calcium is washed out, increasing acidity. In humid climates the process is more intense. But severe acidification is usually caused by agricultural activity. Where crop residues are not returned to the soil and ammonia fertilizers (e.g. DAP) are used, soils become more acid.

What happens in acid soils?

With increasing acidity, magnesium, potassium and sodium are washed out and acidity increases further. Soil tests will always show nutrient deficiency

Farmer's question

What is the difference between lime and rock phosphate. Are they fertilizers? Which role do they play in the soil? Daniel Munene Karubiu, Mutira, 0729 317 056.

whenever acidity levels are high. Most plant nutrients are made less available for the plants if the soil is too acidic and has a pH-value below 5. The pH-value is a measure for acidity and alkalinity. Acidity affects soil bacteria which are responsible for chemical and biological processes that help provide nutrients to plants thus enabling healthy plant growth. This means that with a certain level of acidity in the soil, plants will no longer grow properly because they do not get the nutrients they need for a healthy development. In addition, acids dissolve aluminium from the natural minerals in the soil, making it toxic to plant roots.

Benefits of liming

Liming therefore does not only just add calcium, which is an important plant nutrient. Liming also has the following benefits:

- It neutralizes acids and increases the availability of most plant nutrients (N, P, K and others). With regular liming, you make sure that the pH of your soil is in the desired range of between 6 and 7.
- It reduces toxic aluminium
- It improves soil structure, drainage and water holding capacity.
- It increases crop yields and soil fertility.

Rock phosphate

Rock phosphate is mined from natural rock containing a high percentage of phosphate, usually calcium phosphate (apatite). It is a very good natural source of phosphorus. We recommend adding rock phosphate to organic material like compost or manure to increase phosphorus availability to plants. A good method is to mix it generously into the compost while setting up the heap. Phosphorus availability is also dependent on the acidity level in the soil! A pH-value between 6 and 7 is best.

Farmers know little about lime

The over use of chemical fertilizers is one of the major causes of soil acidity. One solution to reduce soil acidity is to use organic fertilizers; they help build soil fertility and restore nutrient balance in the soil. Another method is the application of agricultural lime. Although some shops stock agricultural lime, very few farmers buy it because they do not know its benefits in neutralizing soil acidity. A 50 kg bag of agricultural lime costs Ksh 200; some agrovet shops stock it, so farmers can enquire on its availability in towns nearest to them.

TOF

Thank you for TOF

On behalf of the farmers in Loitokitok and the District Agriculture Office, I would like to extend my appreciation for your quick response by placing us in your mailing list for The Organic Farmer magazine. We will do our best to pass the messages acquired from the magazines and from Infonet.

B. Ngigi, District Crop Development Officer, Loitokitok District.

Bringing farmers together

Su Kahumbu again calls upon the organic farmers to come together with a strong movement that would have influence and be recognized at household, national and international levels. Truly, what is needed from us, as farmers, is our total commitment.

The government has a lot of assumptions, policies and structures that do not match with the aspiration of farmers. I propose that farmers jumpstart this initiative immediately; with at least 1 farmer with commitment from every district organising farmers forums to create awareness. There is no more time to waste. Ibrahim Mbule Wakayula, Maeni Cooperative Society, P.O. BOX 326 - 50204, Kimilili, 0735016202

It is a useful magazine

I came across *The Organic Farmer* magazine and for sure, I loved it. The information in the magazine is for sure very handy for both the farmer and even researchers alike. Why? It is presented in a well-synthesized and farmer friendly manner without losing the scientific bit in it. I happen to be a farmer and a student doing research in agriculture and I would like to get copies of the magazine. How can I get copies of this wonderful magazine? Mary Lucy Oronje, P.O Box 15,40612, Sawagongo, Tel 0722 838 717

Napier for sale: I have Napier for sale. The fodder is suitable for chaff cutting. HKM, Gakindu Tel0721150386.

Organic produce needed: We need asparagus, artichokes, beans, dried beans, wheat, cabbages, sukumawiki, spinach, potatoes, sweet potatoes, tomatoes, peppers, all types of fruits, honey, organic beef, eggs, value added products, sauces, dairy products, indigenous vegetables. I am also looking for a young black pig to breed with mine. Call Triza, Green Dreams Ltd Tel.0721 793 411

Dairy Goats: Farmers with dairy goats registered with the Kenya Stud Book (KSB), can give us their contacts so that we can link them with potential buyers. Many farmers are interested in high yielding dairy goats but they do not know where to get them. **TOF**