

The Organic Farmer

The magazine for sustainable agriculture in Kenya

 BIOVISION Nr. 42 November 2008



Demand for rabbits growing

Every week we get a number of calls from farmers asking if they can find market if they went into rabbit keeping. The worry from the farmers is understandable: Rabbits reproduce very fast. Farmers would have problems disposing the rabbits if there was no ready market.

In Nairobi, there are many hotels and restaurants serving rabbit meat. A spot check in a number of butcheries in Nairobi showed many of them stock rabbit meat; one kilogramme goes for between Ksh 250-400. However, most of the butchery owners complained that although demand for the meat was rising, there was need to create more awareness to consumers on the ben-

efits of rabbit meat compared to other meats in the market.

A good example for a successful farmer, who has never had any problems in marketing of rabbits, is Godfrey Gichuhi (see TOF No. 26, July 2007). The only problem for him is how to meet the increasing demand. "Every month, I sell between 400 and 500 rabbits. In fact, my main problem is where to find the rabbits whenever I get more orders than I can be able to supply", he says. Gichuhi supplies hotels in Karatina, Nyeri and even Nairobi. He sells rabbits for between Ksh 400- 500. Recently he got orders to supply rabbit meat and skins to buyers in China, but he cannot meet the required order for at least 200 rabbits per week. Farmers with rabbits for sale can contact Godfrey Gichuhi at P.O Box 137, Karatina Tel 0720 406 195 email: godfreygichuhi@yahoo.com

See Pages 4 & 5

TOFRadio



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Harvest and store grains well

Timely harvesting and proper storage of cereals is of great importance to farmers. A lot of maize is lost due to poor timing and lack of proper storage facilities. Mycotoxins (aflatoxins) develop when maize is poorly stored.

See pages 2 & 3



Earthworms improve soils

To farmers, earthworms are just like any other creatures in the soil. But they convert organic material into very rich plant food while improving the soil fertility. They produce essential plant nutrients.

See page 7

Dear farmers,

Concerned about the future of his students, a primary school teacher in Nairobi set out to offer career guidance and counseling services to his class eight pupils. First of all he sought to establish the career preferences of these young learners.

The teacher was shocked to learn that out of the 44 pupils in his class, only a miserable 3 wished to, in future, take technical courses such as carpentry, masonry or tailoring. The rest preferred courses tailored for white-collar jobs such as secretarial training, engineering, marketing, accounting, medicine and law. Of course, apart from the so-called better salaries associated with these professions, office jobs are also prestigious to those who hold them, their families and the general public. The low figure of pupils willing to pursue technical education featured earlier in this statistics is a sign of the bad and sorrowful reputation of skilled labour. Our country badly needs good auto mechanics, carpenters tailors, masons etc. Unfortunately, our school and college curricula have completely neglected technical education and majored in cognitive skills.

Take agriculture for example. Although it is said to be the backbone of Kenya's economy with more than 80 percent of our population engaged in it, the same is not reflected in our education system. At the primary school the subject is inexistent while in secondary schools, it is offered as an optional subject. Consequently, students are not prepared to appreciate the importance of agriculture and the varied opportunities that it offers.

Since we have very few people trained in technical skills in agriculture, our agro-based industries that specialise in value addition and marketing are dominated by foreigners. Our farmers and even traders are confined to being primary producers of agricultural products, which fetch very low prices in the market. If this country is to say good bye to massive unemployment, our education system must emphasize on technical skills especially in agriculture with special emphasis on value addition.

How to protect cereals after harvest

If they can observe simple storage tips, farmers can save their stored maize from pests and spoilage.

The Organic Farmer

Farmers incur heavy losses during storage; the United Nations Food and Agricultural Organisation (FAO) says farmers in Africa lose between 15 and 40 percent of their harvest due to poor storage facilities. This loss can be prevented if the farmers can take a few simple measures to reduce the losses. If they had good storage facilities, farmers could withhold their maize stock and sell when prices improve.

Wrong timing

Most farmers leave the crop in the field for too long after it matures. Some maize varieties open their sheath (maize cob covers) too early exposing the grains to water and pests while the maize is still in the field. Maize should be harvested immediately it matures; for example, most varieties grown in

mid- March and April are ready for harvest between October and November. Maize not harvested early is prone to pest damage and rotting especially



Sorting and shelling: Before storage, the maize should be sorted to remove rotten grains that may have been damaged by insects and mildew (mould). Research shows that sorting maize before storage can reduce loss by up to 36 percent. Shelling helps to check pest damage because most pests prefer maize when it is still on the cob for easy movement.

Drying: The maize should be dried a few days before storage. Drying gets rid of excess moisture which is responsible for decay and development of mould (aflatoxins) during storage. Direct sunlight kills pests that have not gained entry into maize and beans. The maize should be turned and stirred to ensure it dries evenly. Drying also helps to bring down the moisture level. Grains should be dried to a moisture level of 13 percent which is ideal for long term storage.

Control methods

Ash/chilli mixture: Ash/chilli mixture and a thick layer of rice husks covering stored grains is said to be effective in preventing the larger grain borer attack. The chilli should be dried and pounded into fine powder. Sieve cold wood ash from the fireplace. Mix 2 kg of wood ash with 1 teaspoon of chilli powder. Mix them thoroughly. Add 1 part ash/chilli mixture to 4 parts of dried maize grain.

Red soil

The common red soil has been used to protect stored grains against pests. The soil should be crushed into fine powder and dusted on stored maize and beans. The dust prevents the pests from drilling holes or even laying their eggs on the dusted grains. The laterite in the soil rubs off the waxy coating on the insect's body dehydrating and killing them. In sealed storage pots, insects suffocate because enough dust is poured in with grain to exclude air. Trapped insects dehydrate and die as their outer covering is damaged by abrasion (rubbing).

Air tight container

Air-tight container can protect stored grains from infestation by pests. The containers are useful for small-scale farmers with a few bags of maize and beans or traders who sell seeds and grains. The grain should be harvested, shelled, winnowed and cleaned of all

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Publisher African Insect Science for Food and Health (icipe), P.O. Box 30772, 00100 Nairobi, KENYA, Tel: +254 20 863 2000, e-mail: icipe@icipe.org, website: www.icipe.org

Editors Peter Kamau, Peter Baumgartner

Secretariat Lucy W. Macharia

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Advisory Board Nguya Maniania, icipe, Charles Kimani, farmer, Wangige, Joseph Mureithi, KARI, Henry Kiara, ILRI, Christian Borgemeister, icipe, Sunday Ekesi, icipe

Address *The Organic Farmer*

P.O. Box 14352, 00800 Nairobi, KENYA

Tel: +254 20 445 03 98, 0721 541 590

e-mail: info@organickenya.com,

www.organicfarmermagazine.org

when wet conditions persist. Loss from maize that is harvested at maturity is less than that of maize that overstays in the field after maturity.

Construction of stores: A good store should be well constructed. It should have enough space for air circulation at the base and the upper section; pests prefer a warm environment and will keep away if the store is not comfortable for their stay. A good store should have 40-50 percent open space for the stored grain to dry properly. The store's platform should be 60-90 cm above the ground to allow for air circulation. Iron sheet roofs do not harbor pests. Wood and grass used in building stores encourages breeding of the larger grain borer.

Cleaning: Weevils can live in cracks in the wood of the store, they can remain there until the next harvest. Thorough cleaning of the store is therefore necessary before fresh grain is stored to reduce infestation during storage. All equipment used for storage including earthenware, plastics, synthetic or sisal sacks should be disinfected preferably in hot water to kill any pests or their eggs. Cow dung may be used to plaster granary floors and walls. Fresh eucalyptus tree leaves can be burnt to repel any pests in the store before storage.

The unseen poison in animal feeds

Be careful with grain that appears mouldy; it may be infested with mycotoxin which is poisonous.

William Ayako

Mycotoxins are the most significant threat in grains (maize, wheat, barley etc.) that form the bulk of human and livestock feed in feed manufacturing. There are two types of mycotoxins, those that develop in the field prior to harvesting (arising from field moulds) and those that develop after harvesting during storage (caused by storage moulds).

Over three hundred strains of mycotoxins, among them aflatoxin in maize, have been identified and new strains are still being discovered. As moulds grow, they use the nutrients in the grain and therefore reduce their nutritive value. If they continue to grow further, they produce the toxins (Mycotoxins). Unless the growth of moulds is effectively controlled they cause serious damage to the grain.

The occurrence of mycotoxins in both grains and feed can adversely affect productivity and profitability of poultry and pig flocks. Even though there are recommended agricultural practices to reduce the formation of mycotoxin during crop growth, harvesting and storage, significant feed contamination still exists whereby poultry and pig farmers continue to incur losses. There is also a serious growing concern over contamination of human foods by mycotoxin.

Prevention is important

The occurrence of mycotoxins happens when favourable conditions for their development are created. Specific mycotoxins appear to be limited to certain environmental conditions and specific crops. Regional and geographical distribution of different fungi and



Moisture in maize causes the growth of mould (aflatoxins)

Photo TOF

Practical control measures

An important first step in controlling mycotoxins is preventing mould growth. There are several strategies for doing this:

Moisture control: This is the cheapest and the easiest way of ensuring safe storage. To minimize the potential for 15 cm mould growth and mycotoxin production, grain moisture content should be reduced to below 15 % within 48 hours after harvesting.

Aeration and temperature control: The interaction between moisture level and temperature is the most important factor affecting grain preservation during storage hence; both should be kept as low as possible. Temperature can be achieved by regular aeration. Aeration is effective for the control of fungal and insect infestations.

Moving or turning: Regular turning of grain in storage facilities is a good control of temperature, moisture level and insect infestation. In a way, this is a form of aeration. It also enables detection of any developing insect infestations.

Minimizing mechanical damage: Although most mould pathogens can directly penetrate plant tissues, mechanical damage provides additional entry point and therefore should be minimized.

Selection of resistant cultivars: Selection of cereal cultivars resistant to *Fusarium* and other mycotoxin-producing fungi is currently viewed as a possible option for reducing mycotoxin contamination in grains and feeds. **W. A.**

their toxins may be the cause of different crops being affected. Prevention of formation of mycotoxins in feed is the most appropriate strategy and economic approach in their control in feedstuff.

It has been widely known that moisture, temperature and aeration are primarily the environmental factors controlling fungal growth. However, moisture is the single most important factor. So if commodities are dried to less than 14 % moisture, minimal fungal development can occur.

Farmers can easily achieve the recommended moisture content by sun-drying grain to a level that is easy to grind or mill into flour as in this case the moisture content should be below 14 %. In addition moisture metre (moisture detector) can be used to determine moisture level in the grain.

Reducing risks

It has been proved that the risk associated with mycotoxin contamination of feed can be reduced through implementation of different approaches:

Dilution: Animal feeds severely contaminated with mycotoxins can be diluted with non-contaminated feed to achieve final concentration of mycotoxin that does not affect the performance of the animal.

Diversion: Some species of animals are more tolerant to a particular mycotoxin than others. This fact can be used to divert the mycotoxin contaminated grains to less susceptible species. The best example is diversion of contaminated grains from pigs to dairy cows.

Physical methods: Many physical methods such as cleaning and segregation of mould-damaged grains from the intact grain, milling, thermal

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Expensive analysis

It is simple to detect grain that is infested with mycotoxin. Any grain that is visually mouldy is obviously infested with some strain of mycotoxin. However laboratory analysis of grain for mycotoxin is quite expensive. In Kenya, this analysis can only be done at the University of Nairobi and costs more than Ksh 3,000 per sample.

Rabbits can support your whole family

Rabbits are easy to keep, provide you with healthy meat and can give you a good income.

Val Corr*

Many Kenyans, especially the men, would not contemplate eating rabbit meat. However, I have always been of the opinion that if every Kenyan family kept a few rabbits, their children, at least, would eat meat every day. Rabbit meat is totally fat and cholesterol free and has the highest protein of all domestic livestock.

Rabbits are easy to keep, cheap to feed, breed quickly and are ready for slaughter within four months. They carry much more meat than a chicken of the same weight and are very easy to cook.

Enough feed and water

Rabbits need to feed on rabbit pellets or rabbit ration sufficient to last them through the day. Green fodder is essential but can be fed in relatively small quantities. There is very little that rabbits will not eat – including potato peelings, carrot peelings and other vegetable scrap. They thrive on weeds (especially chick weed and thistles). Lucerne and Napier grass ('thara'), if it is available.

- It is essential that they receive plenty of clean water. It is a fallacy that rabbits obtain sufficient water from their food. It is surprising just how much water they drink in 24 hours.
- Earthen ware bowls with a small lip seem to be the best for water and food, as they are too heavy for the rabbits to turn over.
- It is always a good idea to put minerals in the feed (Coopers Maclick powder is a good one).
- We place a square of sacking under the feed bowls to prevent food being dug out of the bowl and spilt onto the floor which is waste.

Enough meat

If you decide to keep rabbits I am sure you will find it very rewarding and it is an excellent opportunity to teach children about responsibility and the care of animals – and you may be lucky enough to be able to produce enough meat to sell to your neighbours!

**Val Corr, Lake Breeze Farm, Eburru, Naivasha. If you wish to contact her for further advice, please call 0734 913 049.*



Housing and bedding

To grow healthy, rabbits must be fed properly, housed properly and kept clean. It is best to house them off the ground as follows:

- The house should be 90 cm off the ground, be 90 cm high and 90 cm square. Because mabati comes in 2.5 meter lengths, it makes sense to build blocks of houses 1.80 meter wide so that one sheet can be used to cover the two houses.
- The floors should be of chicken wire so that droppings and urine fall through to the ground. This can then be swept up daily and used as compost (see end of the article).
- The house should have a layer of hay as bedding. This is a very important part of the rabbits' diet; they will eat a lot of this bedding during the night.
- Rabbits must not be in windy conditions, so it is advisable to cover the ends of the building with shade nets and to have 'roll down' shade netting curtains at night.



Rabbits need clean house with adequate space, light and comfortable bedding

- Their houses should be cleaned daily. Wet bedding should be removed and put on the compost, dry hay can be returned and some more added. If rabbits are left on soiled bedding, it is not only uncomfortable but it will encourage flies which will, in turn, cause disease.

How to slaughter a rabbit

It is important that the rabbit is killed very quickly. The quickest and kindest way to do this is:

- Hold the rabbit in your left hand by its back legs. With your right hand hold the rabbit between your index and middle fingers, under the chin and against the base of the skull. Lift your right hand to shoulder height, stretching the rabbit, and pull the head quickly and sharply. If you try to do this any other way it will not work.
- The rabbit should then be hung by one back leg. The head is removed. The rabbit is gutted and entrails

removed. The feet are clipped off. A small slit should be made on the inside of the back leg that is not attached to the slaughter post. The skin is peeled off this leg. The skin is then gently loosened round the body and front legs. You will then be able to take the skin off the remaining back leg, and by pulling down, so that the skin is now inside out, you will be able to peel the skin off like a sock.

- The heads, spleens and heart make excellent dog food. The liver is a delicious delicacy and highly nutritious – your rabbit is now ready to eat.

Plan the breeding and care for the young

The doe (female rabbit) is a spontaneous ovulator; it is receptive to the buck as soon as she is introduced. The doe is ready to breed at 5 months. She should be placed with the buck and mating will usually take place within minutes. When she has been mated properly, the buck will twist and fall over to one side. The doe can then be returned to her pen. It is not advisable to leave a doe with the buck for longer than 15 minutes as they will both get bored. If she is not mated in that time, return her later in the day.

We have had instances of 'miracle births' which are recorded in some veterinary journals. We have also found that some does, who will not accept the buck, are already pregnant even though they have not been with a buck.

Important: a warm nest

Gestation is exactly one month and a doe will produce anything up to 10 kits (young rabbits). Eight is a perfect number as she has eight teats; but if well fed, they seem to manage more with no difficulty. Obviously, smaller litters thrive better than large ones.

Does tend to feed their young once a day, and usually at night. A couple of days prior to birth you will notice that she will start collecting hay in her mouth to make a nest. She will then pull hair from her chest and under her neck to line the nest. She will pull out more hair after the birth and cover the babies.

Take care of young ones

This is the time that the young have to be watched carefully:

- It is essential that the babies are not allowed to get cold, especially in the first few days after birth. The nests need to be checked to ensure that babies are not carried out of the nest by the mother when she stops feeding. It is quite safe to handle the young and replace them in the nest.
- The young should be weaned when a month old. Sexing baby rabbits is not that easy, but once you have got the hang of it, it gets easier: Hold the baby upside down in your hand and gently blow on the hair round the genital area and, with two fingers, gently separate the genitalia towards the head and tail. The males will show a small upward protrusion, whilst the females will only



show a small opening. This is easier done with two people, one holding the baby and the other doing the sexing.

- The males and females should be separated at this stage as they can start breeding when they are very young.
- They should then be put in separate weaning houses. A pen 90 cm x 180 cm can comfortably house 6 young rabbits. Remember that there are now more growing rabbits in one cage, so they must be fed adequate quantities of food and water if they are to grow satisfactorily.
- At weaning, it is advisable to routinely treat the weanlings with Coccidian powder (all animal pharmacies stock this for chickens). 1 ml per litre once a day for 3 days should be sufficient to protect your rabbits).
- It is also advisable to deworm them at this stage. Quarter ml of Albenda-

zol administered orally with a small syringe is sufficient for each rabbit. Be careful, not to put the syringe (nozzle) too far into the mouth or you may damage the throat.

- They should be ready to slaughter at 4 – 5 months.

Plan the breeding

Three or four does to one buck would be more than sufficient to keep a household supplied with meat all year round. You would therefore need:

- A pen for the buck
- A pen for each doe
- At least two weaning pens – one for males and one for females

If each doe is bred to the buck at intervals of, say, one month or longer, you would have a continuous supply of meat. Depending on how many does you keep, you can work this out:

- Gestation is one month
- One month with the mother
- Three months to slaughter

It is important that you plan your breeding – you could otherwise end up with more weanlings than you can comfortably cope with! It is very easy to get over crowded very quickly as rabbits are very prolific breeders. – A breeding doe, if looked after and fed properly, will serve you well for approximately 4 – 5 years. A buck if fed and looked after properly could last you longer.

It is advisable to keep a breeding sheet on the door of every doe pen. This should record her age, the date she is covered, date of birth, number of kits, any deaths, date of weaning, number of kits reared. *Valerie Corr* ■

Valuable compost

Sweep all the droppings and soiled bedding into a neat, square heap every day. If possible sprinkle with water or, better still, with EM1. After two weeks turn it over and keep moist until you have a lovely dark compost. If you keep other livestock (cattle, sheep, goats, donkeys and chickens) their droppings can be added to this compost for an even better end product. This would give you an endless supply of good compost for your shamba or, alternatively, a by product that you can sell.



farmers forum

>>> from page 2: **Storage**

residues. It should then be dried until it rattles when shaken. The farmer should inspect the grain and ensure there are no weevils. The containers should be clean and dry. Load the grains into the container until it is full to the brim and close tightly. It should be stored in a cool dry place.

Neem and pyrethrum extracts

Neem mixed with pyrethrum (known as Nimpyr) is very effective in the control of both weevils and the larger grain borer in stored maize. However larger quantities are needed (2 to 3 kg/100 kg of grain). Pyrethrum has an unpleasant odour while neem has a bitter taste. This can be eliminated by soaking the grain in water for some time and later washing the grains. Neem oil is especially effective when applied to stored beans, cowpeas and other legumes. ■

>>> from page 3 **Mycotoxins**

activation, and irradiation have been used to minimize the adverse effects of mycotoxins in animal industry. Some of these methods have some limitations and so are not widely employed in the feed industry.

Organic absorbents

Absorbents are substances which, when added to feed, are capable of forming other irreversible substances with mycotoxin in the intestine of farm animals. These substances are not digestible and hence they pass down the digestive tract and are excreted in the faeces. Their net effect is to reduce the amount of toxin absorbed in the blood of animals to the point that is not harmful to allow contaminated feed to be fed with minimal losses in performance.

Legal limits and regulation

It is important to note that the enforcement of legal limits for mycotoxins in animal feed is not only for protection of the health of animals. It is even more important for the protection of the consumers of any edible animal products that may be contaminated. The legal limits for mycotoxins reduce indirectly the financial losses due to the adverse effects exerted by some mycotoxins on animal productivity which is of a great economic advantage to animal keepers. ■

How to order your CD

The Infonet-Biovision CD contains all the information that a farmer may need. Farmers interested in buying the CD only need to send us airtime worth Ksh 200 through either our Zain line (former CELTEL) 0738 390 715, or through our SAFARICOM line, 0721 541 590. After sending this airtime, please send us an SMS detailing your full name and correct address. We shall send you the CD by registered mail.



Magazine good for reference

Recently I visited a Ministry of Agriculture office and I was impressed by what I saw. In the waiting room was a neat spring file where monthly copies of *The Organic Farmer* magazine are filed. I opened it and found almost all issues of the magazine where anybody interested on any topic regarding organic farming can make their reference. This filing system got me thinking. Every month, some of our fellow farmers are lucky



to get a copy of the magazine, but after reading it, we simply throw it in the nearest table and forget about it. If we have a problem on a topic which was carried in a past issue of the magazine, then we have to wade through all the paper work in the cupboard, the bookshelf or where we stack the piles of

old newspapers. Often we may not get the copy we want because it was either borrowed by a friend or even used by school children to cover their books. In other words we lose very vital information that can be used for many years

not only by us, but also our children. A good filing system is important for such a publication because we know we may need it later. Right now there are very few books on agriculture in our bookshops. The few that you find on sale are not relevant to our needs as farmers. The magazine has come to fill this gap and we should treasure and keep it in safe custody for our future reference. A small library at home can go along way to meet our information needs.

John Kiarie, Kiambu

Magazine has become the farmers' bible

The Organic Farmer magazine is now being referred to as a farmer's bible. It is proving to be a very resourceful publication. Going through each copy every month, a committed and focused farmer is now able to source all the necessary information from livestock to crop husbandry. On selection of marketable agricultural projects, the magazine is informative. Congratulations and keep on educating us. What the magazine teaches guarantees self-sufficiency in food production and incomes

to many rural households. Initially, labour is intensive and tiresome but the fruits are sweeter. With support from World Vision and the magazine we have done exemplary work in farming and are now influencing and converting neighbouring farmers to go into productive farming activities. I would like to urge all concerned to adopt and religiously practise what we have learned.

John G Njoroge, 3N Harvest

Questions? Ideas?
Complaints?
SMS us, and we shall get back to you.

0721 541 590 / 0738 390 715



Earthworms are good for soil fertility

Earthworms can improve the structure, increase fertility and even remove poisonous substances in the soil.

The importance of earthworms in soil fertility and structure cannot be overlooked. Without them, soil would most probably be compacted, infertile and perhaps even less stable and thus easily eroded by water and wind. So which are these little creatures and what is their role? Earth worms have been studied for many years; Charles Darwin alone studied them for 36 years and through these studies brought the importance of these wonderful creatures into the realms of science. There are thousands of types of earthworms. Different worms have different functions, some living within the top few inches of the soil strata and others living well below. Some only operate at night and are called night crawlers.

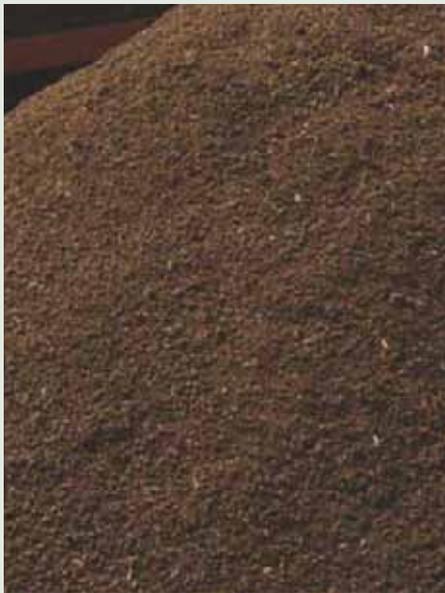
So what are the actual benefits of these worms?

Earthworms feed on bio-degradable organic matter. As the materials pass through the bodies of the worms, they change in their composition due to the action of enzymes within the worms. Worm excreta known as 'casts' are very high in plant nutrition-nitrogen, phosphorus, potassium and calcium. A word of caution here though-what goes in comes out. It has now been discovered that earth worms can also pick up soil contaminants (including toxic metals), some of which they can neutralise, others remain in the worms' bodies. Strangely enough, new findings are also showing that earthworms are one of the fastest creatures to adapt to contaminants in the environment and pollution. They actually breed better and live longer in areas that are most contaminated!

These contaminants could be from pesticide or fertilizers, hormones and antibiotics found in animal manure or other plant material. In the case of cleaning up contaminated soils, earthworms are now playing a major roll jointly with plants that have the capability of extracting soil contaminants. The worms process the contaminants in the soil and make them available for plant uptake. There is even talk of smelting these plants to extract the metals for reuse in industry! So apart



An earthworm (above) compost made using earthworms (below). (Photos TOF)



from the magic of improving the soil fertility by burrowing and creating water and air passages, breaking down bio-degradable matter into easily accessible plant nutrition and improving the soil structure, earthworms also help to clean polluted soil. They are really fantastic creatures. Here are guidelines on how farmers can make the most use of earthworms in organic agriculture:

Attract the indigenous worms into our fields

To do this we need to understand both what earthworms require and what repels them. They require damp soil with a lot of decaying plant material. I emphasise damp because worms cannot move through dry soil. They either die or tend to travel towards the damp soil. They do not like dry soil, or soil that is humus-free. They are eaten by ants (siafu) and birds, they therefore need sheltered areas. Simply put, land that is mulched, damp and has

a lot of plant material incorporated in the top 1 foot of soil will be a heaven for earthworms. Crops produced in this area should flourish. Note that earthworms do not normally feed on growing plants, seeds, seedlings etc

Create artificial wormeries

Here we create a small-scale heaven for the worms, allowing them to breed, eat and excrete safely under controlled conditions. Most wormeries are about 1-1.5 feet deep. They allow for drenching of the system with water and collection of the same water now termed as worm juice or worm tea. This juice is then diluted and used as a plant foliar feed.

Makes leaf mould

Leaf mould broken down by earthworms is extremely nutritious for plants. As you can imagine, the nutrients in leaves are collected from a soil depth most plants would be unable to reach. To produce leaf mould, simply fill a sack (gunia) with leaves, fresh as well as dry and leave in a shaded place. Make sure the leaves are damp and never dry out. Add a few earthworms and leave them to do their work. In a few months, depending on the amount of worms in the system, you will have a wonderful plant food. One thing to note: Earthworms are cold composters, do not try to add them to a compost pile that is too big and expected to heat up. However, do expect to find earthworms inhabiting a compost pile that has gone through its heating phase and is now completely cool. **Su Kahumbu**

Destructive earthworms

In the past few months, new findings are beginning to reveal the destructive nature of some earthworms. It is said that in the US, exotic earthworms are in fact feeding on delicate forest mosses threatening the extinction of this moss and resulting in degradation of the top soil. It is feared this may result in the extinction of other delicate soil organisms and thus the fertility of the forest soil in the future. Note: These worms are exotic and not indigenous. So as we utilise the benefits of these worms locally, let us keep in mind the likely damage they can cause if we were to introduce exotic worms into our soils. **SK**

tips and bits

from farmers for farmers

Save your beans from destructive pests

One of the major causes of bean loss during storage is damage by grain weevils (bruchids). Bruchids drill holes and feed within the beans, leaving them with many holes and low weight.

Control methods:

1. Mix the dry beans grain with wood ash for every 90 kg bag of beans.
2. Mix a teaspoonful of corn oil like Elianto for every 1 kg tin of beans.

Sunning and sieving

If you have 1 or 2 bags of beans and you live in an area with adequate sunlight, drying the beans and then sieving them kills the eggs and larvae and makes the adults to fly



away. For this method to be effective, farmers should do the following:

- Spread out the beans in a mat under the sun for about 6 hours.
- After sun drying, sieve them using an ordinary kitchen wire sieve

During the first 3 months after harvest, sieve the beans once every 2 weeks. After 3 months, sieve the beans once every 3 weeks. The method not only saves money. The beans are not harmed or damaged and they germinate well if they are used as seed. The taste of the beans is not affected and there is no risk of poisoning from use of chemical pesticide.

Diatomite can control pests

Diatomite is white powder made up of millions of fossilised microscopic plants called diatoms,

which have sharp edges that pierce insects killing them. It is one of the most



effective natural pest control compounds that does not affect the quality of grains and is not harmful to both humans and animals. Diatomite is mined at Gilgil by the African Diatomite Industries. A 20 kg bag retails at Ksh 350. A ½ kg of the powder is enough to protect 1 bag of maize, wheat, oats, rice or even sorghum. It is applied directly to the grain and mixed with a shovel. Diatomite should be washed off and the grain dried before consumption. *Farmers interested can contact African Diatomite Industries P.O Box 32 Gilgil Tel. 050 401 209, 050-401 5209 Mobile Tel.0722 277 120*

THE Farmers Classified

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To advertise contact: James Wathuge 020 356 4106, 0720 419 584, 0733 893 300, email: thefarmersclassified@mailnew.com.com

THE LIMURU AGRICULTURAL YOUTH CENTRE

(FORMERLY THE LIMURU BOYS CENTRE)

P.O. Box 30496-00100 - NAIROBI

Tel: Wireless: (020) 2012283

Head Office Email:

kenyaymca@wananchi.com



LEARN TO LIVE



MANY PARTS ONE BODY

Training Opportunities.

We are in the process of admitting school leavers to the following programmes for January 2009: -

	Minimum Grade	Duration
1. Certificate in General Agriculture D 1½ Years
2. Certificate in Agro-processing D 1½ Years
3. Certificate I Animal Health & Production D+ 2 Years
4. Certificate in Motor Vehicle Engineering D+ 1½ Years

Interviews in progress for January 2009. For more information contact:

Principal

P.O. Box 30496 - 00100 Nairobi. Email - layc@wananchi.com

Tel: 020-2012283, 0734-964586, 0724-655763

Our institute is situated in Tigoni along Limuru Rd.



R U an org farmer?

We are looking for a wide variety of organic products - vegetables, meats, grains, fruits, dairy products, value added products etc.

Those wishing to join the Green Dreams supply chain can call:
Angela on 0726-600-519 or Michael 0735-187-804 for more information. Or visit us at our office every Wed from 9.00am at Mountain View Estate, after Kangemi, Hse No 196.

Anything fresher is still growing!!

Farmer's Diary

Brookside dairy farmers training days:

Month	Date	Venue	District
October	31	Mundoro	Gatundu South
November	7	Sabatia D.F.Coop	Koibatek
November	21	Kathangariri	Embu
November	28	Tetu	Nyeri South
December	5	Sotik D.F.C.Soc	Buret

CONTACT PERSON: S.N. KARIUKI 0733 - 270986