

# The Organic Farmer



The magazine for sustainable agriculture in Kenya

Nr. 48 May 2009

## Mbaazi repels red spider mites



Did you know that a row of pigeon peas (*mbaazi*) can protect your crops from harmful pests such as spider mite? Read more about natural pest control methods on page 3

## "I went home empty-handed"

*For small-scale farmers, getting subsidized fertilizer can be very difficult and frustrating.*

### The Organic Farmer

Farmers were full of hope when the government announced the arrival of subsidised fertilizer that would cost Ksh 2,500 a bag at the National Cereals and Produce Board (NCPB), instead of paying Ksh 3,000 for the same in agrovet shops. In the last few weeks, many small-scale farmers have called the TOF magazine complaining about their difficulties in obtaining a bag of subsidized fertilizer. One small-scale farmer from Subukia wrote to us his frustrating experience:

"Full of hope, I went to the NCPB Depot. On arrival, I found a long queue of farmers from various parts of the district at the gate of the depot. Those in the queue told me that I could not be allowed to buy the fertilizer unless I filled in a special form from the agricultural extension officer of my home area proving that I was a farmer and detailing the size of

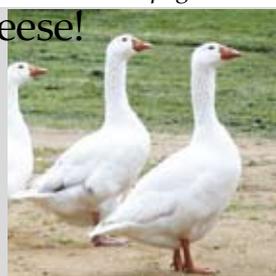
my land. As I pondered my next course of action, including how much it would cost me to go all the way to our divisional headquarters, some farmers advised me to 'see' the security guard at the gate. The guard told me that I could get the document if I gave him some chai of Ksh 200."

"Meanwhile, as I talked with the guard, pick-up vehicles and trucks were going in and coming out of the depot laden with fertilizer. One of them belonged to a local politician and others to prominent agro-veterinary shops in the town. The queue grew longer as the day wore on. Some farmers started leaving the depot, but I decided to hang on until the closing time at 12.00 noon. Eventually, just like my colleagues, I also had to go back home without the fertilizer. The following day I decided to buy the commodity from a regular agrovet at Ksh 3,000. I felt so bitter and enraged. It is like always: People with connections make their profits, the wananchi and especially we the small-scale farmers go home empty-handed!"

See also the editorial on this page

## Geese, geese!

These birds are easy to keep, they need care and plenty of short grass to pick. Pages 4 & 7



## Dear farmers,

If you have been reading newspapers, watching television or listening to the radio in the last few months, you may have realised one thing: Well known agricultural organisations worldwide, experts in agriculture and governments have recognised the special role small-scale farmers will continue to play to ensure food security in future. Poor countries with a large population who can no longer feed themselves rely on small-scale farmers to meet their food requirements. But when we compare the nice promises with the reality, things look quite different, at least in Kenya. Let us give some examples:

- Due to corruption, small-scale farmers who have tried to get the subsidized fertilizer from The National Cereals and Produce Board have been unable to buy even a single bag of this important farm input, as you can read on this page.

- Improving farm output needs investment. Up to now there is not a single-credit scheme in the country ready to offer farmers affordable credit, likewise, there is no bank willing to give small-scale farmers loans at a low interest rate.

- What happened to the seasonal credit schemes which worked so well two decades ago?

- Why do small-scale farmers have to wait for months to get paid for the maize and wheat, which they delivered to the NCPB?

The government, no doubt, has very good policy initiatives and strategies for improving food production in the country. But all these documents have never been implemented and are gathering dust in government offices. Availability of funds may only be a part of the problem; but even worse is lack of political will or the inability to translate these strategies into concrete action. Getting things done does not require a lot of funds, but determination. Well sounding words, blueprints and promises alone cannot change anything.

The long and short rains last year were inadequate, which led to crop failure in many food producing areas. So, one would have expected that this year, we would do everything to enable farmers produce more food. Right now, hungry Kenyans have to depend on well wishers for food aid. Our farmers have proved that they have the capacity to produce food if they got the necessary support. But this is lacking.

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# Lupins are good fodder for your livestock

Farmers have many methods to improve the livestock feed, for instance with lupin seeds.

**John Cheburet**

As farmers in Kenya continue to grapple with the high cost of animal feeds, a crop not yet known to most farmers is slowly taking root as a preferred protein supplement for dairy farmers. This is lupin, a leguminous plant. Like most members of this family, lupins can fix nitrogen from the atmosphere into ammonia, fertilizing the soil for other plants.

There are two types of lupin; bitter lupins and sweet lupins. Bitter lupins are used for soil regeneration and cannot be used for feeding livestock because of poisonous alkaloids found in the leaves, pods and seeds. Sweet lupins pose no dangers of poisoning livestock because of low percentage of alkaloids. Sweet lupins can be grown anywhere in the highlands where rainfall is over 900mm in a year.

There are two cultivars of the sweet lupins

- Blue lupins (*Lupinus angustifolius*). Major varieties are Uniwhite, Uniharvest and Unicrop. Unicrop is early maturing variety. It takes 3-4 months to mature. Unishite and Unihar-



White lupin beans (above); a flowering lupin plant (right) (Photos TOF)

vest are late maturing. They take 6-7 months to mature.

- White lupins (*Lupinus albus*) The major variety is Ultra. It takes 4-5 months to mature. Ultra is a good seeder giving up to 6 tons of dry seeds per ha per year while Uniwhite and Uniharvest are high in herbage yields giving about 4 tons of dry matter yields per ha.

According to Frederick Wambiru of KARI Ol Kalau, the Ultra variety has been under trial and has shown satisfactory results. The centre is now in the process of bulking the seeds for farmers.

## Nutritional Composition

The composition of the grain and especially the high protein content makes white lupin highly suitable for animal diets as a protein-rich product. Lupin seeds are a product of nutritional importance due to their high protein content (37%), soluble fibre (35.5%), crude fibre (13%), fats (10%) and ashes (4%) as well as acceptable levels of thiamin, riboflavin and vitamin E.

As an animal feed, Wilson Wekhulo of KARI Kitale says that lupin is used together with maize as a home made alternative to dairy meal for farmers keen on getting more milk while reducing the cost of animal feeds.

## Preparation and planting

- Prepare land like for maize and beans, so as to have a uniform, firm soil that will maximize germination. The land should also be level and free of depressions to permit uniform depth of seed placement.

- Plant early to avoid heat and water stress during flowering and pod fill.
- Plant Lupin seed at a spacing of 45 cm between rows and 30 cm between plants.
- Use 1 to 2 handfuls of compost or farm yard manure per hole. Lupin can also be planted between maize rows at a spacing of 30 cm from hole to hole
- Plant 2 seeds per hole

## Management and Harvest

- Keep the field free of weeds by regular weeding.
- White lupin is relatively tolerant to diseases. However, rotate lupin every



1-2 years to avoid soil borne fungal diseases.

- Start to harvest when the pods begin to change colour from green to yellow, and the lowest leaves begin falling off.

- 1/2 acre produces 4 to 6 bags of lupin seed, which will be enough to feed 1 dairy cow for 1 year.

- If lupin is intercropped with maize, 1/2 acre can produce about 2 to 3 bags of lupin seed, which with 6 to 9 bags of maize can feed a dairy cow for 3 to 4 months.

- After harvesting lupin pods should be dried and threshed like beans.

## Utilization

- To prepare the animal feed, the seeds are ground with maize seed in the ratio of 1:3 (1 gorogoro of lupin seed and 3 gorogoros of maize grain). 1kg of this supplement can substitute 1kg of dairy meal.

- Feed 2 kgs of the the mixture per medium cow per milking. Fresh herbage can also be used as a livestock feed.

- Introduce the mixture gradually for cows being fed with lupin for the first time. Add a little mineral salt, molasses or other feed to the mixture to encourage the cow to start eating it.

Interested farmers can get small quantities of seeds for bulking purposes from The Officer in Charge, KARI Ol joro orok, Telkom wireless number 020 2026510

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# Go organic on pest and disease control

*Farmers know the benefits of organic pest and disease control methods, but they prefer chemicals.*

## The Organic Farmer

The period between May and July is a very delicate time in crop production. This is the time farmers will be trying to tend their crops to protect them from diseases and pests. Pest and disease pressure tend to increase during this period especially when it is warm and wet. The farmers' first line of defence against pests and diseases is to use chemical pesticides because they are fast acting and seem to solve the problem immediately.

But as we have mentioned before, farmers are already having problems with a range of chemical pesticides that do not work against the same pests anymore. This means that the continued use of pesticides has made the pests to develop resistant traits that enable them to survive pesticide application. To go round this problem, chemical companies are being forced to develop stronger pesticides that can kill the pests; but some of the chemicals being used have serious side effects, not only to the environment but also to other beneficial insects that control these pests naturally. Most chemicals in the pesticides do not break down completely when used on target crops; chemical residues remain on the crop to the time of harvest which has dangerous side effects to people who eat food prepared from such crops. Some of the side effects include allergies,



Chemicals are easy to use but they affect people and the environment. (Photo TOF)

liver and kidney complications that are difficult to cure.

There are many safe, natural and simple methods that farmers can use to protect their crops from pests. In the past issues of *The Organic Farmer*, we have explained the various methods that farmers can use to protect their crops without using chemicals. One of these is the use of plant extracts. If properly used, plant extracts cannot only prevent pest damage, they can also control common fungal and bacterial diseases while saving the farmer a lot of money they would otherwise use to buy chemicals.

### Marketing of chemicals

However, there is only one problem that we have noticed with farmers: Preparing plants extracts requires some

labour; the farmers have to follow the instructions carefully to ensure the biological pesticides are effective when used to fight pests. Many farmers are not ready to do the extra work required to prepare plant extracts. Farmers prefer the easier way out, to the benefit of the chemical companies. They are spending millions of shillings every month to advertise various chemical pesticides and fungicides in the local FM radio stations that are reaching many farmers in rural areas. Of course, the companies do not tell farmers the side effects of the chemicals they are selling.

It is only the wise farmer who knows the danger posed by chemicals who has adopted plant extracts and other biological methods to control pests and diseases. These organic farmers spend less money, have healthier crops and their income is also higher because they spend less in terms of inputs. Healthier crops can also withstand diseases and pests. For those farmers who find it time consuming to prepare plant extracts to control pests, local companies have started making organic pesticides some of which are given below:

**Nimbecidine:** This is a pesticide made from neem oil that can control a wide range of insect pests and mites and nematodes. It is safe and does not harm beneficial insects.

**Thuricide HP:** This is a pesticide made from *Bacillus Thurigiensis* (Bt) that effectively controls cabbage looper and other pests in tomatoes, cabbages, coffee and citrus fruits. Bt

**Pyegar:** This is a pesticide made from pyrethrum extract that is very effective in the control of all types of pests that attack a range of crops.

**Phosphite:** This is a fungicide that can be used to control a number of fungal diseases.

## Natural barriers that keep pests away

Organic farming educates farmers on an integrated system of pest and disease management where the farmer, for instance, tries to restore the natural balance between pests and their predators. In this system each organism has an important part to play in the ecosystem; for example, a few pests in a farm may not be a threat to your crops if there are predators which feed on them. This helps to keep the predators alive. The predators on the other hand ensure the pest population does not increase to a level where they can be a threat to your crop.

The use of chemicals disrupts all these systems because chemicals kill the predators or beneficial insects, therefore allowing the pest population to increase to a level where they can devastate an entire crop. Disease control is also possible in this system if the farmer practices crop rotation and intercropping (some plants such as the

African marigold which many farmers consider a weed can help repel many pests). Crop rotation eliminates the problem of pests or diseases that attack a particular crop.

For example if maize is rotated with potatoes which are affected by bacterial wilt, the disease disappears in 3 to 4 years because the disease causing bacteria cannot survive long in a maize field. Planting hedges that separate one crop from another also helps to control pests; for example a tithonia hedge can act as a barrier to insects such as aphids. A row of pigeon peas (*mbaazi*) can protect your tomatoes, potatoes and even cabbages from red spider mites. Beans planted around tomatoes, potatoes or any crop also attract aphids and many other insects that may attack the crop, thus protecting it.

Farmers can order the TOF plant extracts special issue for more information. TOF

# Geese are precious and good askaris

*Geese are easy to keep. They provide farmers with meat and supplementary income.*

**Valerie Corr**

Geese are part of the duck family. However, they are much bigger and, unlike the ducks, they feed entirely on grass and other herbage spending very little time in water even if they need a pond for swimming. The goose (a single one) is a robust farm bird, is one of the fastest growing avian species commonly raised for meat. Goose rearing requires little attention and it ideally fits into integrated farming systems. Geese offer nutritious and delicious meat, large eggs and rich fat for cooking as well as soft down feathers for bedding and clothing. A goose can live in excess of 20 years. So if looked after properly, it is an easy domestic animal to keep as well as a cheap and productive asset.

Mature geese are independent, larger than other poultry species, and thus less vulnerable to predators. When kept in small flocks and allowed to roam about in the farmyard or field, they require less attention than any other domestic bird. They adapt easily to captivity, and if small quantities of supplementary feed are provided in the evening, they will even return home by themselves. But they are known to be messy birds, and it is better to house them a little away from the farmhouse.

## Geese like short grass.

Geese should not be overcrowded. The house can be of simple construction providing ample shelter, clean dry bedding and protection from predators. They must have a plentiful supply of short green grass on which to graze (not more than 12 cm long). If they are to live on zero grazing and in pens, then they must be supplied with cut green grass in generous quantities. If longer grass is fed, it can cause crop binding, which will kill the bird. But if you prefer healthy geese and quality meat, they must have space for roaming.

Geese can play a crucial role in weed control and pest management in integrated farming systems. They relish grasses and shun most broad-leaved plants. They have shown particular preference to troublesome perennial grasses.

Normally geese need very little supplementary feed if they are on free range but will benefit from dry layers, pellets and or wet wheat or maize at night. By wetting the grain, you make it more digestible and less attractive



to marauding rodents. They will also enjoy chopped-up green vegetables but this should only make up 10 percent of the diet. Goslings (young geese) learn by example and will eat whatever they see the adults eating.

Geese also require grit (which can be made up of crushed egg shells, calcium, phosphorous and bone meal) and pure sand which they will peck at freely. It is essential to the digestive system, to help break up the grass. They must always have an easy access to clean drinking water.

## KSh 2500 - 3500 for a goose

The flesh of a goose is delicious but is a dark meat and contains a high percentage of fat making it very rich.

Geese lay about two clutches of ten eggs each in a year. The eggs on an average will weigh about 115g each. They can be hatched using a brooder hen or in incubators at a temperature of 37.8 degrees Celsius, and they hatch in about 40 days. The goslings can be reared in brooders generally used for rearing chicks. They should not be let in to ponds and pools for swimming.

Only when they are over ten weeks of age, should they be let out to roam freely in the farm. Geese will be ready for mating in about two years, and they should be paired with ganders (a male goose) of the same age. One gander is sufficient to fertilise five to seven geese.

## Worms the only threat to health

The main problem with geese is that they are susceptible to gizzard worms which will kill them if left untreated. Gizzard worms are a very common parasite and geese should be dewormed at least twice a year with 1 ml Levamisole 7.5%. (Consult your pharmacist who

will advise you of similar products available) Never use more as it is easy to overdose and this may kill the bird. This treatment is not suitable for goslings of 10 weeks and younger.

Alternatively, use Flubenvet which is a multipurpose wormer and covers gizzard worms. It is a powder which sticks readily to feed. The correct dose (on the pack) should be administered for 7 days. It is suitable for goslings and it is advisable to treat a hen when she starts sitting, as well as the gander.

Apart from worms, other problems associated with geese are bad legs and bacterial infections passed on by wild fowl and rats. If they are lame, worming should be your first defence. In case they are showing signs of swollen legs or ankles, they may also need antibiotics. But if they are eating a good diet of green grass, vegetables, pellets and wheat (which supplies vitamins and minerals) they should not develop leg problems.

If a bird is not eating, treat it with antibiotics immediately if you are certain it does not have worms. Laying birds sometimes suffer from complications associated with laying. This is prevented if adequate grit containing sufficient calcium and phosphorous is available.

## Geese are good askaris

Geese with their sharp eyesight and wide field of vision, combined with their strident calls, make excellent guards against approaching intruders or predators.

They will ferociously charge at strangers entering the farms, and they cannot be cowed into silence by intruders. They are thus good tough watchdogs for the farms.

# Parasites on livestock: small but dangerous

Farmers have many methods to fight external parasites on their livestock.

## The Organic Farmer

External parasites such as ticks, lice, fleas, leeches and even flies are a real nuisance to livestock. We are not just talking about minor discomfort here. Losses can occur from these parasites due to irritation, blood loss, depressed appetite, and decreased rate of weight gain. Mange, for instance, which is caused by mites, can affect the mammary gland and interfere with milking. Studies have shown that even mild infestations of parasites could cost you half a kilogram of milk production per head per day. This loss accelerates too quickly if the animal is not treated.

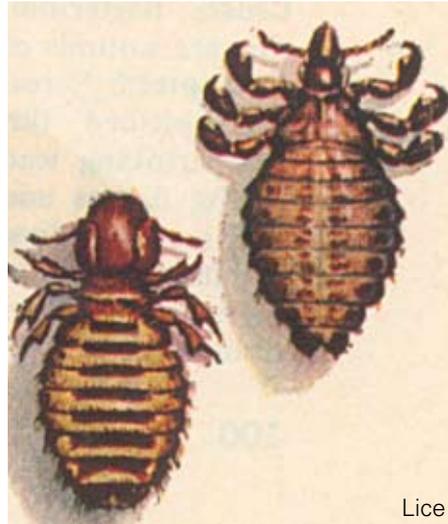
Another major economic loss due to parasites is skin damage. Indeed, tanneries are rejecting up to 35% of sheep skin and 56% of goat skin due to mange and lice infestation. External parasites transfer diseases between animals by sucking blood. Therefore, they should be kept firmly under control. The worst of all these external parasites is the brown ear ticks (see box on this page).

Acaricides are commonly used against external parasites. They are applied by dipping or spraying of the affected animals. These chemicals are expensive. To save money, many farmers do not apply them according to the instructions on the label. Instead, they add too much water and in the long run, the chemicals do not work efficiently.

Apart from chemicals, farmers can use other methods through a combination of prevention and control with organic methods. If an infestation occurs, it should be treated promptly.

### Watch the livestock carefully

A farmer can save money if he observes his animals regularly. Most of the parasites



Lice

are however tiny and cannot be easily seen. In such cases, there are many clear signs for the diagnosis of parasitic infestations and of livestock diseases. Some of them are listed below:

- Constant rubbing against the fence, trees or any other equipment.
- Lethargy (weakness) and depression.
- Low appetite indicated by reduced intake of water and feed.
- Reduced production of milk and poor rate of weight gain.
- High fever.

### Prevention methods

Prevention is an important method of avoiding losses and damages:

- Always separate new arrivals for at least three weeks. Check these animals very closely for any signs of infestation and treat them if necessary.
- Separate animals that display early signs of infestation.
- Reduce animal stress; the animals should have access to the outdoors, pasture for ruminants, fresh air, direct sunlight, shade and shelter. Well kept animals are much less affected by parasites.
- Provide good quality feed with appropriate mineral supplements. Parasites prefer animals with a weak immune system, an indication of stress or poor nutrition. Animals that repeatedly have problems with external parasites often have some other underlying problems, perhaps internal parasites. The weakest animals (and thus the most stressed) are the most likely ones to develop parasite problems.
- Clean the environment off harmful pathogens and livestock parasites with a proper waste management and recycling of biodegradable materials.
- Use clean equipment for watering and feeding.
- Free-range chicken and ducks in the compound are an ecological control

of disease causing vectors; they are able to eliminate a lot of ticks from the pastures.

•Know the life circle of parasites: Eggs of parasites are normally not killed by chemical and organic treatment methods. Lice eggs, for instance, need 8-19 days to hatch as nymphs. This means that after treatment, eggs can still hatch and continue the infestation. It is important to repeat the treatment every week until you are sure the parasites have disappeared.

### Treatment of lice, fleas and mange

Like all external animal parasites, lice, fleas and mange (caused by mites) are common primarily in the cold season from June to September. They are a problem in all types of cattle, but especially in dairy cattle which are housed in closed quarters. There exists various methods of control:

**Diatomite:** Naturally, diatomite has very sharp edges. It kills insects and mites by piercing their exoskeletons and causing them to "leak" and die. Diatomite is not toxic, but farmers should take care when applying the powder. As a precaution, do not purchase the diatomite that is sold for pool filtration. This is not the same as is needed for parasite control.

**Garlic:** Garlic powder has an active ingredient called allicin. It can kill or repel parasites and also has excellent antimicrobial properties. Feeding a garlic tincture in conjunction with external treatment has shown positive



Flea

progress, especially with mange mites.

**Pyrethrum:** Pyrethrum is very effective against mites and lice. It contains pyrethrin that kills insects on contact and can be used in liquid or powder form.

**Soap:** Soaping animals removes the waxy cuticle that protects insects and mites from drying out. It kills lice and mites, but repeat treatments will be necessary, especially with heavy infestations. Repeat the treatment in one week to do away with the lice from newly hatched eggs. Use pure soaps and avoid detergents.

**Plant oils:** A thin coat of vegetable oil in the affected area will suffocate

continued on page 6

## Series on parasites

External and internal parasite infestation are a serious problem among livestock keepers. However there are various methods farmers can use to protect their animals against them. Starting this month, we will bring you a short series of articles on parasites and how to control them. In this issue we give you tips on external parasites such as fleas and lice. In our June issue we will feature the control of ticks in livestock and in July we will give you tips on internal parasites.





&gt;&gt;&gt; from page 5: Parasites

insects and can probably kill insect eggs. Apply a light coat of oil to the areas of infestation. Also run oil along the neck and spine to cover some of most commonly infested areas. As with soap, repeat treatments may be necessary. One can also use various essential oils such as anise, camphor, eucalyptus, rosemary etc.: 1 part of each with 2-3 parts of any other oil. Good results are attributed to raw linseed oil, applied with a stiff brush.

**Neem Oil:** The neem tree is the source of this natural pesticide. A combination with oil is effective against all external parasites.

**Aloe:** Crush the leaves of aloe and sisal plant leaves and extract juice to make equal portions of juice. Mix with 10 litre of water and leave for 2 days. Apply the mixture on the animals once a day for 2 days to control lice and mange.

#### Fighting leeches

Leeches affect livestock that drink in shallow water. They suck a lot of blood from the animal by attaching themselves to the lining of the mouth or throat. To remove leeches, use alcohol, salt, soap, or lemon juice or just pull them off. The best way is to slide your fingernail under the front and tag on the tail to gently cause the leech to break the suction from the animal. This method substantially reduces the risk of bad infection.

**Tobacco:** Mix 50g of tobacco powder (snuff) with ½ litre of water and flush the animal's mouth with the mixture. The leeches will detach and fall off.



## Do you want your own TOF copy?

Since we started publishing *The Organic Farmer* magazine, we have always insisted that it should be shared among members of farmers' groups across the country. Apart from reaching so many farmers, the idea behind this distribution system was that this would encourage you to come together, read the magazine and share the ideas, tips and new farming methods featured in each new issue.

The system would require well-organised farmers' groups that hold regular meetings. Such groups should build up a file with all issues of *TOF* to ensure that the few copies they receive are well-stored. This method would enable any member wishing to get information on a particular topic covered in one of the magazines to borrow the file and make reference. While some groups have adopted this system, many others have not been able to keep all the copies in a way that is accessible to other members. Some groups' chairmen rarely share the magazines with other members and distribute them within their extended family. Others prefer to give copies only to a section of the members denying others a chance to read.

This is one reason why farmers from many parts of the country keep calling us to send them a particular issue of the magazine which we produced months ago; most of which have run out of stock. Other farmers would like to keep the magazines to themselves for reference when they need it. We understand the problem, but this goes against the spirit and purpose of the magazine: That each copy should be read by at least seven to nine people, as is the case at the moment.

In the past few weeks we have received more than 300 fresh applications from individual farmers who want to get their own *TOF* copies. We have stretched our resources to the limit: Even after raising the circulation to 18'000 copies, we have realised that we are unable to meet the demand from farmers. Very few copies remain for our own use in the office, which means that we can no longer send more copies to new subscribers. Our budget has now risen to more than Ksh14 million a year.

To overcome this problem, we are starting a new subscription service for farmers. Those who wish to receive their own copies can pay a yearly subscription fee of Ksh 840. With this amount *TOF* will cost you only Ksh 70 per month. This is a negligible amount of money compared to the value of information and the knowledge you will acquire from the magazine. We will not make any profit from this subscription fee because this is exactly what we pay for the production of one copy in one year. Of course, we know that this new service will increase our administrative burden. We will accept only yearly payments, from January to December. If a farmer would like the individual *TOF* for this year, he has to pay Ksh 490 by end of May to get *TOF* from June to December 2009. Immediately we receive the payment, we will start sending you the copies. Renewal of subscription for the year 2010 has to be done by end of December 2009. You can send the money through M-pesa to our special subscription telephone number 0717 444 405. Send in a separate sms your name and full address.

Farmers' groups will continue to get their *TOF* copies free of charge. But they will have to prove that their groups really do exist. Groups applying for copies should include a photocopy of the registration certificate together with some details such as the number of members (men and women), describe how their group operates, including their management (their full address and, if possible, their mobile phone numbers).

The big demand for *The Organic Farmer* is a good sign – for us, the *TOF* team as well as you the farmers, this is a sign that you are interested and willing to improve your farming.

We will do our best to fulfill these expectations. *The Editors*

## Alert us if you do not get your copy

In the past few weeks we have visited various parts of the country and one problem we have discovered is that some farmers are no longer receiving their copies of *The Organic Farmer* magazine, yet they do not even inform us about it. Is it laxity? Or lack of interest because you get *TOF* free of charge? This behaviour is difficult to understand.

Several times we have reminded farmers to call us immediately if they fail to get their copies latest by the 15th day of the month. It

is a waste of resources if *TOF*-copies do not reach the farmers. While we are trying to investigate the source of the problem especially with Postal Corporation of Kenya, it is very difficult to help you if you do not notify us that you are not receiving your monthly *TOF* copies.

If *TOF* does not arrive on time, farmers can send SMS to our new SMS telephone number 0715 916 136 or call us on Telephone numbers 0721 541 590 or 0738 390 715

## Spider mite not easy to control

I have serious problems with spider mites which have damaged my tomatoes and are now attacking the black nightshade (managu) and eggplants. I have been using dictator pesticide but they keep on recurring. Please help. Tel. 0722 580 626.

Spider mites are a big problem especially if they are not controlled on time. They attack tomatoes, potatoes, tobacco, black night shade, and more than 300 other plant species. One mistake farmers make is to spray them with pesticides when it is already too late. Another problem is that when spraying pesticides, farmers do not apply the pesticide on all the affected parts of the plant including the lower part of the leaf. Spider mites are found in many colours. Adult females that attack tobacco are orange-red with reddish legs. Spider mites protect themselves from pesticides by use of silk threads that makes them stick to the plant leaves. They multiply very fast during the hot dry, dry weather, however their population declines during the rains.

### Blown by the wind

Red spider mites are blown by wind from one crop field to another. People walking across the fields also help in dispersing the pests as they attach themselves on their clothing or working tools. The most common spider mites in Kenya are the tomato red spider mite and the two-spotted spider mite.

**Control methods:** The best biological way to control spider mite is the use of their natural enemies, such as predatory mites or lady beetles. The predatory mites have been discovered in parts of South America but are yet to be introduced in Kenya yet. However the



main problem in Kenya is that farmers rely on dangerous pesticides to control pests such as spider mites which also kill the predators. Some biological pesticides such as pyrethrum extracts also kill the predators. Neem extract with a high proportion of oil has been found to be very effective, but farmers should be careful not to use too much neem oil as it can harm the plants.

**Field sanitation:** Farmers should ensure the field is kept as clean as possible and free of weeds.

**Intercropping:** Plant tomatoes together with crops as garlic, basil, and onions can give some protection due to their strong smell.

**Tomato leaves:** Boil one kilogramme of tomato leaves in 2 litres of water, cool and use as a spray.

**Castor oil (Ricinus):** Soak green castor oil seeds and leaves in water for 24 hours, filter and then spray. However be careful because castor oil seeds are poisonous. Do not allow people or animals to eat tomatoes sprayed with castor oil.

## ...answers in brief

### Eucalyptus

I have small piece of land on which I have planted eucalyptus trees. Is there anything else I can grow in between the lines as the trees get tall? James Kaburu Meru town. Tel 0725 511 334.

Yes you can plant maize or beans in the first year. However the eucalyptus tree grows very fast. In the second year the trees will have formed a canopy which makes it hard for any other plant to grow. Its water utilisation is also higher than many plants which tends to deny other plants intercropped with it a chance to grow.

### In need of Sudan grass

Where can I purchase Sudan grass? I need 2 kg for some push-pull trials I am doing. I have desmodium and Napier grass. I have a ready plot for this season. Organic farmer, Mai Mahiu, Naivasha Tel. 0724 308 361.

Farmer Kiarie from Nakuru has 50 kg of Sudan grass and is looking for a buyer. Ask him if he still has some for sale. Call on Tel 0721 484 199.

### Benefits of Amaranth

Does Amaranth have calcium minerals? Aggrey Mudete 0715 213 182

Amaranth is a good source of essential nutrients when consumed as grain or as a vegetable. Amaranth is a nutritious grain, with protein, particularly amino acid, Lysine, which is low in the cereal grains. Amaranth is also a rich source of dietary fibre, essential vitamins C, B1 and minerals like calcium, potassium, phosphorous, iron, zinc and manganese. Nowadays you can buy milled Amaranth in the supermarkets, 1 kg goes for Ksh 190. **TOF**

## Why your geese may not lay that golden egg

My geese stay too long without laying. Please help. 0725 695 253

A number of farmers have similar problems and are asking us why the birds take long to lay eggs. We have sought the answers from a number of experts who have given various reasons why the geese have stopped laying.

- Geese have very definite seasons for laying, and may be off at the moment. Flocks of domestic geese are known to synchronise their laying patterns and, generally, lay every other day.

- There may be dietary problems. i.e., are the geese getting enough water / the right feed including sufficient grazing / the correct housing / enough daylight hours/ are they penned or free range? Any one of the above



Canadian geese on the walk

could be the cause.

- A geese keeping lady in Nakuru has some other reasons. She advises fellow farmers that geese need a well protected nesting area away from prying

hands; any fumbling with their precious eggs will result in immediate rejection in laying. They also cannot sit on eggs that are tampered with!

This lady told TOF-field officer Isaac Maina the following story: "One day a neighbour's dog strayed into my compound and came across a number of eggs that the geese had laid in a thicket. The dog ate the eggs leaving the empty shells on the nest. On noticing the damage, the geese sensed danger and stopped laying eggs altogether."

If you have any additional advice on why the geese fail to lay eggs or tips about their general management, write to us. We will share the information with other farmers.

See also page 4! **Valerie Corr/TOF**

## tips and bits

from farmers for farmers

# Mosquito control project in Malindi bears fruit

The BioVision-funded malaria eradication campaign is a model for other mosquito-infested areas.

By Lucy Macharia

Malaria kills thousands of people in Kenya every year, but for the coastal town of Malindi, the disease had attained epidemic proportions, affecting more than 80 per cent of all children between the ages of 2 to 9 years and more than 50 per cent of pregnant women. Realising the danger posed by the disease, a number of community groups came together 6 years ago to educate the residents on ways of controlling the disease. The local youth formed 250 Self-Help groups under an umbrella organisation by the name Punguza Mbu Malindi (PUMMA). To support the initiative, The Kenya Medical Research Institute (KEMRI) together with the African Insect Science for Food and Health (ICIPE) sent scientists to work with the community on malaria control. The BioVision Foun-



Stagnant water pools are the breeding ground for mosquitoes.

dition for ecological development, which also funds The Organic Farmer has been financing the project since inception. The Ministry of Health and the Municipal Council of Malindi are also involved in the campaign. It uses integrated, environmentally friendly and cost effective methods of mosquito control such as the use of safe bacteria or Bt (*Bacillus thuringiensis israelensis*) to

kill mosquitoes in their larval stage.

Having identified mosquito breeding areas, the project has launched a public awareness campaign on mosquito control in homes, schools and other institutions. A clean-up exercise known as "shine the village", which involves filling up of pools with stagnant water, draining of abandoned swimming pools, blocked canals and distribution of free Insecticide Treated Nets (ITNs) is done in residential areas in the town and the surrounding areas. Every year the project organises a mosquito field week where all these activities, the climax of which is the Mosquito day, are commemorated. This year's event took place at the Malindi Municipal stadium on April 4. It involved a procession through the town, songs and speeches by local leaders urging the community to double their efforts on malaria control. Already the campaign is bearing fruits, KEMRI reports indicate that malaria cases have declined from 10,000 at the beginning of the project to only 5,000 last year.

## The Farmers Classified

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