

The Organic Farmer

The newspaper for sustainable agriculture in Kenya



Nr. 13 May, 2006

Weeds reduce your harvest

Weeds cause great loss to farmers if they are not controlled early and disposed in the right way.

The Organic Farmer

Like a thief who steals in the night, weeds take away a large portion of a farmer's crop yield if they are not controlled on time and in the right way. Every year, smallscale farmers in Kenya and in most African countries lose between 15 and 90 percent of their crop due to weeds. Research shows that farmers can harvest up to 2.6 tonnes of maize per acre if they practised timely and proper weed control methods. However, the average maize yield in most parts of the country is 0.8 tonnes per acre which is a result of poor weed management, among other factors.

One of the causes of this loss is lack of knowledge on the dangers posed by weeds in our farms today. Unlike diseases or pests, weeds do not show any symptoms, but they compete for essential nutrients that the crops need for proper growth. They take light and water from the crops and push them out of their growing



space. They also shelter pests and diseases that attack the crops.

Hottensiah Mwangi, a weed scientist at the Kenya Agricultural Research Institute (KARI), says many farmers do not regard weeds as a major problem. After planting their crops, they ignore the weeds and only start weeding after the weeds have completely covered the crop, which by then have taken away the nutrients, light and water that would have been utilized by the crop. The crop becomes weak, in the process reducing the overall yield. According to Hottensiah Mwangi, smallscale farmers weed late because they have to work elsewhere to raise money for other pressing needs such as food for the family.

Poor weeding methods also play an important role in promoting the regeneration of weeds. "When weeding, many farmers tend to cut down weeds, such as couch grass, into small pieces which are then thrown away around the farm. Many of these weeds do not die but instead sprout and spread", Hottensiah Mwangi adds. Careless disposal of weeds after weeding is another factor responsible for weed transfer from one part of the farm to the other. Many farmers throw weeds by the roadside after weeding. These weeds are then washed away by run-off water to other farms where they grow and spread.

Dear farmers,

Kenyan farmers believe agriculture is the most important economic activity in the country. Most farmers would like to transform this sector into a sustainable mode of production that helps to improve the living conditions of their rural communities. Many have formed farmers' groups and even established Savings and Credit Cooperatives (SACCOs) to attain these goals. But they are frustrated in their quest for better returns due to lack of reliable markets for their agricultural produce. These are some of the insights we have gathered after going through the answers to the questionnaires we sent out to you. Hundreds of farmers completed the questionnaires and sent them back to us. We are very grateful and thank you all for making this exercise a success.

The analysis of the questionnaires (see page 2) was an interesting and instructive experience for this newspaper. Not only do the farmers appreciate the information we give in *The Organic Farmer*, they also put into practice the many useful tips we give in every issue. The feedback from the farmers points out areas that need improvement. One of the recommendations is that the Government needs to do more in support of agriculture, mainly through rehabilitation of roads and provision of credit to smallscale farmers. Although all farmers are happy with the information we give on crop production, many feel that we need more coverage on the problems facing the livestock sector. We have responded to this request immediately, as you can see on page 5.

Close to 94 percent of the farmers who answered the questionnaires would like us to organize workshops where they can gain more experience in organic farming. Due to our limited resources, we may not be able to organize such training courses at the present time. The newspaper is already giving you a lot of practical information on farming. What we request of you farmers is to ensure that you work together, share your experiences among yourselves and with those who have not understood the benefits of organic farming. In this way we will build a strong organic farming community in the country.

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Fodder tree crops have many advantages for a farmer.	

Deworming



Regular deworming of livestock is important to improve their health and production. See page 4

See page 3

MY OPINION**By Michael Korkoren**

The long rains are here with us again. It is so good to stand outside and watch the green surroundings of my home. The shamba is flush with the young maize and beans planted a few weeks ago. The animals also seem to rejoice in the new pastures that have just sprouted. Now is the time to fulfill all the promises the government made to counter the effects of drought, for instance to build dams and give farmers seeds. But now that the situation has improved, these things have been forgotten. But remember, the next disaster is waiting.

Michael Korkoren, Farmer, Kapsabet

The Organic Farmer

The Organic Farmer is an independent newspaper for the Kenyan farming community. It promotes organic farming and supports discussions on all aspects of sustainable development. *The Organic Farmer* is published monthly by ICIPE and distributed free to farmers. The reports of *The Organic Farmer* do not necessarily reflect the views of ICIPE.



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Farmers like their occupation

The readers of our newspaper have to struggle hard, since every shamba has to feed an average of 9 people.

The Organic Farmer

When a newspaper like *The Organic Farmer* carries out a survey of its readers, it is not because the editors are curious or are trying to spy through the keyhole. Rather, we want to know a few things: Who are we writing for? What are their needs? What are their problems? Can they be solved with the information we give? How can a newspaper like *The Organic Farmer* help to improve the income of smallscale farmers?

The questionnaires we received from you farmers gave us the answers to all these questions. We sent out 500 questionnaires, and 323 farmers answered and sent the questionnaires back to us. We thank you, the farmers, for the feedback! In this first article we will inform you about the social structure of our readers. In the June issue of *The Organic Farmer* we shall write about the critiques on our newspaper and the areas in which the farmers want us to improve.

Proud to be farmers

Most of our readers truly are smallscale farmers. There are huge differences in the size of the shambas. Shambas vary from 0.8 acres to 19 acres (0.32 to 7.6 hectares). On average, our readers own a shamba of 4.74 acres (1.9 ha) and 9 people live on the income from the shamba (We calculated these averages by adding together the total of the sizes of the shambas or the numbers of dependants or animals of all responding farmers together, and dividing it by the number of responding farmers). The families have on average 4 to 5 children, and the farmers are very eager to send them to school.

Most farmers are proud of their occupation. They would also like to see their children become farmers, because they believe farming is one of the careers that provides self-employment. Many of the people answering our questionnaire showed a preference for agriculture since they know it is the mainstay of Kenya's economy; other reasons given was for food selfsufficiency and the possibility of earning an extra income from food sales. Only 10 percent of our farmers advice their chil-

dren to look for a job outside of the agricultural sector. These farmers have quite a strong point: salaried employment in industries or in offices provides a regular income - if one can find employment!

Lack of credit

Our farmers are well organized. Four out of five farmers are members of a farmers' group. Unfortunately, membership to SACCOs (savings and credit organizations) shows a different picture. Even though the farmers underline the importance of SACCOs, only one-third are members. This attitude should change, because SACCOs provide affordable credit to smallscale farmers. One of the big challenges facing smallscale farmers is the lack of credit to improve production in their farms. That is why we urge you farmers to join a SACCO and to support each other in accessing credit for farm development.

Organic farming is widespread

About a third, or 100 farmers responding, have an additional job, and only 102 can rely on a relative (son or daughter) working in town. Only 10 percent use an irrigation system. More than half of the farmers have a mobile phone, and one-third own a bicycle. Our farmers live an average distance of 6.8 km away from the nearest market, a walking distance that takes 55 minutes. This explains why so many farmers complain of the bad roads interfering with marketing of their produce.

One-third of the farmers practise conventional farming, and two-thirds use a mixed system of organic and conventional production methods. The main crops planted by most farmers are maize and beans, half of which are sold and therefore contribute to the farmer's income. Nearly two-thirds of the farmers sell their products through middlemen, while only 10 percent sell directly to schools, churches or similar institutions. The farmers who responded to our survey own on average 3.7 cows, 2.5 goats, 2.3 sheep and 7.9 chickens. This explains why farmers have requested the newspaper to write more articles on livestock keeping. If you look at page 4 in this issue, you will see we have done exactly that. We will have more articles on livestock health in future issues.

June issue: what farmers want to read in our newspaper.

Increasing yields through strict weeding

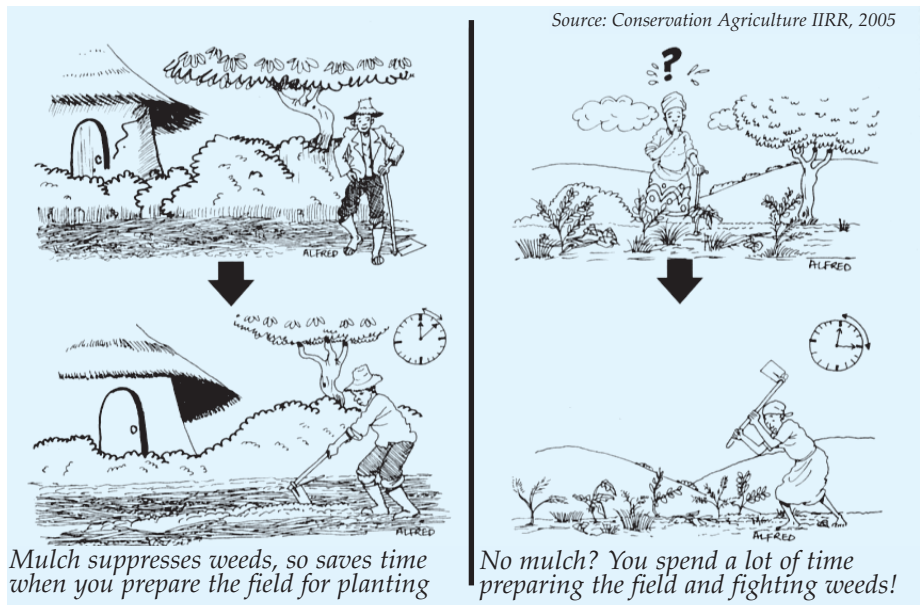
If a farmer does not control weeds early and in the right way crop yields are drastically reduced.

The Organic Farmer

A weed is any crop that grows where it is not needed. Weeds compete with cultivated crops for nutrients, moisture, sunlight, and space. They shelter pests and diseases that attack the crop while reducing crop yields and farmers' income.

In Kenya, ploughing the land is the most common practice used by the farmers to control weeds. They plough several times to remove weeds during land preparation. What they do not know is that ploughing buries many weed seeds. At the same time, it brings other seeds buried in the soil to the surface where they germinate. Tractor and ox-drawn ploughs also play a major role in spreading weeds in cultivated fields. The plough cuts down the weeds and pulls them along, as it is pulled by the tractor or oxen. The small pieces are then spread across the field. They grow vegetatively and cover parts of the farm that were previously weed-free. Burning crop residues may also stimulate the growth of some types of weeds.

In organic farming and conservation agriculture, weed control is very important. If a farmer does not control weeds properly, they may spread to a point where crop yields are drastically reduced. It is always wise to control



Mulch suppresses weeds, so saves time when you prepare the field for planting

No mulch? You spend a lot of time preparing the field and fighting weeds!

them in their early stages of growth. A farmer should not allow weeds to compete with their crop. If they are left long enough to produce seeds, weeds tend to reproduce fast, making it even more difficult to control them. Weeds need slashing, even after harvesting, to stop them from producing and setting seed.

Control methods

Minimum tillage is a system of agriculture that ensures the soil is disturbed less during cultivation. If this system is used, most of the buried weed seeds are not brought to the surface.

Good cover crops spread over the soil quickly and suppress the weeds

before they can grow. The farmer should select cover crops that have several uses, for example food crops, fodder crops or those that provide firewood. Cover crops such as lablab can cover the soil completely in two months.

It is important to weed once in order to give the cover crop a chance to get established. If the rainy season is long enough, farmers can schedule the planting of a cover crop such that it will remain in the field even after the main crop has been harvested. The cover crop spreads over the soil, suppressing the weeds. Good cover crops include desmodium.

Mulching

Weed seeds germinate easily if the soil is bare. Crop residues left on the surface as mulch makes it hard for weeds to grow because they do not have enough space or light. Farmers should take care to ensure that the mulch does not kill the young crop seedlings. The mulch will not only manage weeds; it will also reduce the soil temperatures, conserve moisture, facilitate water to sink and add organic stuff into the soil.

Crop rotation and Intercropping

Planting a different crop in each field than the one grown previously breaks the life cycle of weeds. There are fewer weeds, and they are easier to control. Intercropping helps cover the soil and smother weeds that grow between the rows of the main crop.

A farmer can pull out weeds by hand; slash them with a panga, sickle or slasher. Try not to disturb the soil too much if you use a hoe or other implements.

Useful tips on weed control

1. Slash weeds immediately after the harvest and during the dry season to prevent them from producing seeds.
2. Before you plant, slash any plants (weeds, cover crop, stalks left over from the previous crop) in the field.
3. Dig planting holes with a hoe or open planting furrows with a ripper or subsoiler.
4. After the first rains have fallen, allow weeds to grow or new weeds to emerge. Then weed them out before planting.
5. Plant a cover crop between the rows of the main crop.
6. Check for weeds every week and control them by pulling them out by hand or scraping the soil surface with a hoe. Do not disturb the soil too much.
7. Harvest the main crop and allow the cover crop to grow.
8. Continue checking for weeds and pull them out before they can flower and seed.
9. Harvest the cover crop seeds. You need them for the next season.
10. Crush the mixture of crop residues and cover crops using a sickle, panga, knife roller or any other implement 3 weeks before you expect the first rains to begin.

If a farmer controls the weeds regularly, they should be easier to control in later seasons. Remember it can take 3 to 5 years for the number of weeds in the soil to be reduced to a minimum.

However it is important to check for weeds continuously and to pull out any that try to sprout. If this is done, weed control will be less work.

Worm control improves livestock health

Farmers should not treat their animals for worms without seeking veterinary advice.

The Organic Farmer

Control of worms in his cattle and sheep was for many years a problem to Johnson Mwaura, a farmer in Kiambogo farm in the Molo area of Nakuru district. The cost of deworming drugs was not only prohibitive, but also he did not know how to administer the drugs. But three years ago, a neighbour who is also a senior official in the Department of Veterinary Services advised him to try "Pymac," a by-product of pyrethrum which is also used as animal feed. He also taught him other preventive deworming procedures.

Pyrethrum by-product helps

"Every day I feed my animals with Pymac which I mix with maize bran to reduce the bitter taste. The health of my cows and sheep has improved tremendously. I would recommend it to any farmer who wants to control worms in their livestock," Mwaura says.

Many farmers do not take the problem of worm control in their livestock seriously, yet worms play a big role in livestock health in many parts of the country. Livestock owners do not give the right doses, which has led to worms developing resistance to some of the drugs in the market. According to Dr. Gideon Kikuvu from the Kenya Veterinary Laboratories, farmers under-estimate the danger of worms.

Worms reduce milk production

Animals infested with worms are often in very poor body condition; they are weak, thin and vulnerable to



Johnson Mwaura uses Pymac to fight worms in his animals.

(Photo TOF)

all types of diseases. They lose weight and their milk production is drastically reduced. He says worms can also get entangled in the animal's intestines where they cause blockages.

The common symptoms of worm infestation are a rough hair coat – the animal's hair comes off easily. Some worms cause diarrhoea, while others cause swelling in the lower jaw. Young animals have a swollen stomach and may even die if they are not treated on time.

Advice from veterinary personnel

Dr. Kikuvu is quick to add that farmers should not rush to buy worm drugs whenever they observe these symptoms in their livestock. Indeed, he says the major problem now facing the Department is that farmers do not consult veterinary personnel whenever their animals are affected; instead, they buy and administer the drugs themselves.

He says the danger here is that there are different types of worms and each of these requires a different mode of treatment. For example, an animal could be suffering from tapeworms but a farmer may administer a drug for liverflukes. Although there are drugs that kill many types of worms, he says it is only the veterinary personnel who know which types of worms are common in an area and who are the only people qualified to administer the correct drugs at the right dosage. Liverflukes, for instance are common in farms located in swampy areas because the worm resides in snails during part of its life cycle. Many farmers in such areas may not know

this and are likely to administer the wrong drugs for worm control, he says. Farmers should know that a limited number of parasites help the animals develop resistance to re-infection.

Natural remedies for worm control

Organic farming encourages the use of natural remedies for worm control. Apart from Pymac, neem cake is also a good natural dewormer. Many communities in Kenya have indigenous knowledge of plant based preparations for worm control. According to research undertaken by the Practical Action NGO (formerly ITDG) Turkana and Samburu communities use three plants to control worms. These are *Myrsine Africana* (Segetetich-Kalenjin, Mugaita-Kikuyu) *Albizia anthelmintica* (Mwowa or Kyalundathi-Kamba) and the *Hilderbrandtia sepalosa* (Jirmach-Orma or Mtikiti-Kiswahili). However it is recommended that herbal deworming is done together with other worm management procedures that reduce infestation in non-affected livestock.

Pasture management

Dr. Kikuvu says farmers should ensure that adult cows and sheep are separated from the calves and lambs. The reason for this separation is to ensure that the young animals which are more vulnerable to worms are protected. This means that if the adult cows are grazing in paddock A, then calves should be assigned paddock B. If the adults are to be moved to paddock B, then the calves should be moved to C and so on. In this way, the adult animals cannot expose the young ones to worms found in the dung.

Useful tips

- Farmers should deworm their animals two weeks after the onset of the rains. This ensures the worms do not compete for nutrients with the animals when the pasture is available. In many areas, this should be in the March - April and October- November short rains.
- Farmers should also deworm at the onset of dry season (November-December), during this period there is little pasture, so this practice ensures that the animals utilize all the nutrients they can get from the limited pasture instead of sharing it with parasitic worms.

New methods to fight bacterial wilt

Planting mustard in rotation controls bacterial wilt in potatoes and tomatoes.

Anne B. Nganga

Bacterial wilt in potatoes and tomatoes is a big problem for farmers in Kenya. So far the only control methods have been to use clean seed and use of fields that have not yet become contaminated by the disease. This is because the disease stays in the soil for a very long time infecting any susceptible crops planted there.

The Australian Center for International Agricultural Research has discovered a method they call bio-fumi-

gation. This practice reduces the incidence of bacterial wilt in heavily infested soils from 50-100%, depending on the soil structure. It seems to work better on sandy and light soils than on heavy clay soils, but research is ongoing, so the method will be further tested and developed in Australia and in the Philippines.

Reduction by 70 %

Bio-fumigation is the process whereby naturally occurring chemicals called isothiocyanates are released from brassica crops (cabbage family). They suppress soil-borne organisms such as the bacterial wilt.

How do the chemicals get out of the plants and into the soil? The answer is short: The chemicals are released when the cell walls of the fresh plant are broken down. Chopping plants very finely is the best possible option. But there still remain large pieces of unbroken leaves in the field. Phillipine farmers use a rotary hoe or rotavator to chop leaves and mix them into the soil. With this method, they reduce bacterial wilt by 50-70%. In Kenya,



Potatoe farmers incur huge losses due to bacterial wilt (Photo TOF)

several trips over the field with a light disc harrow would probably produce the same sort of result.

Mustard is very effective

The scientists tried many different brassicas, and found that mustard (a common weed in most areas), radish and broccoli were the most efficient at reducing bacterial wilt in tomatoes and potatoes. They had very good success with throwing out handfuls of



Mustard, an old medicinal plant

The mustard family belongs to the Brassica genus, which also includes broccoli, cabbage, sukumawiki (kale), cauliflower, turnips and radishes. Mustard is one of the oldest spices and one of the most widely used. The Chinese used mustard thousands of years ago and the ancient Greeks considered it an everyday spice. The first medical mention of it is in the Hippocratic writings, where it was used for general muscular relief. Even now, milled mustard seeds (mixed with water) are used to treat rheumatism and pain in the joints.

If mustard can be used against bacterial wilt, we may suddenly get a huge demand for cheap mustard or other cheap brassica seeds, which can be collected from the wild or grown for the purpose in a small plot in a corner of the garden. Mustard produces seed within a very short growing period (usually 1-2 months).

seed of radish and mustard between the crop, immediately before planting the tomatoes or potatoes. Mustard is at the same time a type of green manure, which feeds the soil.

Farmers have to prepare the soil well in order to make the seeds germinate, grow and cover the soil as a lush green blanket. Farmers can then chop these plants into the soil just before planting tomatoes or potatoes, bearing in mind that the leaves have to be hacked as finely as possible. Other green manures may work as well, for instance old cabbage stems and leaves will help. Sweet potato vines seem to have a good effect, even though they do not belong to the brassica family.

Kenyan farmers with bacterial wilt problems should try out this method. It might work not only in the Philippines, but also in Kenya.

Crop rotation is important

A strict crop rotation with non-susceptible plants such as corn, beans and cabbage, provides some control of bacterial wilt for at least three years. In the case of a brassica crop, plant them immediately before you grow tomatoes, potatoes or tobacco. Care should also be taken to ensure the seed potatoes planted come from a clean source. Before harvesting the brassicas, broadcast, if possible, any brassica seeds available and let it grow to have a good soil cover. This cover is then chopped finely into the ground along with the leftovers of your cabbages or broccoli.

If the same crop is grown for several consecutive years on the same land, yields tend to decline (or more fertilizer will be needed to reach the same yield). Diseases are common and the yields are reduced. When different crops are grown in sequence in the same field, each crop uses the soil in its own particular way and thus reduces the risk of nutrient depletion. A well-balanced alternation of crop species also prevents the development of soil-borne diseases. Therefore, cultivation pauses must be respected for the same crop and among crops of the same plant family.

To avoid the development of persistent weeds, slow growing plants should be grown after crops with a good weed suppression. Change crops with deep roots with those that have flat, shallow rooting systems which also helps to suppress the weeds. (See also page 3).

Amaranth is healthy food

"We would like to grow Amaranth vegetables, but do not know how to do it. How is it planted and tended? How can we get seeds?" asks Ronald Mokaya of Kinyagu Self Help Group Box 995 Kitale

Ronald, I am so glad to hear you want to grow Amaranth! Our indigenous vegetables are highly nutritious and better for us than cabbage, as you will see from the table below. Apart from being easy and cheap to grow, these less costly and more environment-friendly crops help in ensuring stronger bones, lower blood pressure, fewer heart attacks, and less diabetes, less constipation and hemorrhoids. Amaranth should be part of everyone's diet, more so if we are ailing or recovering from illness.

	Amaranth (Terere)	Cabbage
Iron	8.9	0.7
Protein (gm)	4.6	1.7
Water %	84.0	91.4
Caloris	42	26
Carbohydrates	8.2	6.0
Fibre (gm0)	1.8	1.2
Vit C (M/G)	64	54
Calcium (m/g)	410	47
Phosphorus (m/g)	103	40
B-Carotene (mcg)	5716	100
Thiamine (mg)	0.05	0.04
Riboflavin (m/g)	0.42	0.10

Composition per 100 gram of edible portion of Amaranth compared with Cabbage. (Source: FAO)

As can be seen from the table, Amaranth is a much better source of minerals and vitamins than cabbage and has over 50 times as much B-carotene which is an antioxidant known to be useful for good health.

Planting can be done direct from the seeds. However, because Amaranth has a deep and wide hairy root structure, it will battle for nutrients if grown with very close spacing. My



Amaranth improves nutrition (TOF)

most successful crop was transplanted from a seed bed. Make sure your planting area is well prepared, incorporating plenty of well composted organic matter. When harvesting, remove the seed heads when very young, otherwise the plant will stop producing leaves as it goes to seed.

Amaranth seed when dried and milled produces a very nutritious porridge too!

Seeds are available at the Kenya Seed Company and Simlaw Seeds.

Soil fertility tip

The Amaranth root structure is very beneficial in improving your soil structure for the crop following in rotation. A root crop would be a good choice as a follow-on crop. Amaranth can also be used as a green manure when dug back into the soil.

•Farmers who would like to know more about Amaranth, should get in

Be careful with bird manure

Zachary Mwarari of Kilgoris has been advised that chicken manure if mixed with fresh cow dung and comfrey leaves can make a good foliar feed, when later on mixed with water and kept in an airtight container for three days. Does this preparation work? "I also want to know how to make other organic pesticides and herbicides. Can you advise?"

Most organic material, when composted or turned into a liquid tea, are good fertilizers. However, I would be cautious about using any of the animal manures as foliar applications. They are good as a top dressing, poured onto the soil surface. As a foliar feed, you risk not only burning of the leaves due to the high nitrogen content, but also contamination of the crop with pathogens for instance E. Coli, a very harmful bacterium. I would rather use green manure teas, which are liquid manure made from the decomposition of green vegetation as foliar applications. The material used can be lucerne, tithonia, comfrey, nettle, weeds or any other suitable plant. A combination of these is better than any one used singly. And you should use it within one week of preparation of the teas! Remember, foliar feeds on products like sukumawiki can be quite harmful if not washed properly, and this may be the case during times of drought. I personally feel also that we must be very cautious about our use of chicken and poultry manure, due to the current Bird Flu epidemic.

contact with the NGO, Strategic Poverty Alleviation Systems, PO Box 7795, 00200 Nairobi, e-mail: spastrategysystem@yahoo.com

Su Kahumbu answers your questions



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What can I do against black ants?

Benjamin Lugano, Box 585, Kitale has a problem with black ants in his passion fruit garden. "I know they are beneficial because they eat aphids in the vines, but then they also sap the water from the fruits and in the process cause damage. How can I control them?"

Benjamin, your problem is actually caused by the aphids. The ants are merely taking advantage of the aphid population. Contrary to what you believe, the ants do not feed on the aphids; they "herd" the aphid and "milk" them like cattle. The aphids suck the sap from the plants and pro-

duce a sweet sticky substance, called "honeydew". This is what the ants are after. The ants become destructive when they carry the aphids to other plants and in the process transfer any other diseases or virus present on the host plant. If you reduce the aphid population, the ants will disappear. If

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Letters to the editor

Story on seeds helped us

I would like to congratulate you for your effort to make us more knowledgeable in farming, keep it up. I came across your March issue through a neighbour, after reading a topic on seeds I was really impressed because we only rely on local ones called 'moshi'. If the shops do not have genuine labels as we saw in the picture then we do not buy the seeds. Already I have sent a letter to the western seed company and the lot number I planted. With this remarks I say thank you for enlightening the farming community. My group through you will benefit. Thank you. Mark Otieno Owuor, P.O Box 45, Homabay Tel. 0735 691140

Copies not enough

Thank you for the farmers' newspaper you sent to our group. Please we would like to have more copies for our group and other groups because when we received them all the 24 member wanted but only 5 members received the copies you sent. Presently we are training farmers in our location. Each of the blocks require copies of the newspaper to update their skills. Please send us more copies, preferably 200 copies. Later we will provide you with a list of farmers who have received the copies.

Evans Konjae, Obwanchani youth group, P.O Box 18, Karota.

Black ants ...

continued from page 6

the problem is disastrous, one can spot spray the aphid with a pyrethrum based spray. I like pyrethrum, as it breaks down within hours and does no damage to mammals. Alternatively, you can sprinkle the aphids with diatomite; this will not kill them immediately, however and they may still walk off, spreading viruses until they die. The sharp crystals of the diatomite shred the bodies of the aphids, causing them to lose their body fluids and leading to eventual death. If the problem is not severe, look around for ladybirds on your other crops and transfer them to your plants with aphid problems. Ladybirds feed on aphids; however it is their larvae that do most damage to aphid. The larvae of the lady bird beetle is small an speckled black and white.

Strengthening agriculture

We here at Ukambani Christian Community services are happy to have received several copies of the organic farmer newspaper January 2006 issue. Thanks a lot and there materials will strengthen our sustainable agriculture component in training and sensitizing our farmers in this semi arid area of Kenya, as the country goes organic in farming. This is an assurance that the information and experiences will be disseminated to the farmers and be of help. Thanks again for being associated with you. We need more support and collaboration in terms of material and experience sharing.

John Mutua, For Director UCCS
email: uccsack@swiftkenya.com

Learning new methods

The Multi-plant International Medicinal Conservation is a community project with 30 members. We came across your November 2005 issue and the farmers were very much interested in the information it contained. We request you for monthly copies of the newspaper to enable our farmers learn new agricultural methods. P. Your assistance will be so useful to this community.

Joannes Samikwo, P.O Box 50 30201, Endebess

Let us work together

We thank you very much for your wonderful and educative agricultural magazine that we received for the first time last month through V.I Agro forestry project in Kitale. The Nabwami Community Based Organization (NACOB AO) is a non-profit organization operating in Machewa Location, Saboti Division in Trans-Nzoia District. It is an umbrella of 24 self help groups drawn from the Division. The organization has 275 registered members, A chairman, secretary and treasurer have been appointed from amongst the members. These officials run the activities of the organization on a day-to-day basis. We therefore request for partnership and a monthly supply of The Organic Farmer Newspaper for each group. Your assistance in this matter will be highly appreciated.

David Were Masibo, Chairman,
email: nabwaid@yahoo.com

Dear Farmers,

As part of our efforts to serve the organic farming community effectively, we would like to create a database of organic farmers in the country. We are interested in:

- Your names,
- Addresses, Location,
- Farm acreage,
- Are you an organic farmer?

To make it easy for you, we have a special telephone number: given above. All the farmers can provide these information through short messaging service (SMS). *Come on Farmers, Tuma jibu. Asante.*

SMS ONLY

We use newspaper to teach farmers

I am very glad when writing this letter for the work you are doing for us. I am a volunteer field educator in our group but you have made our work easier because we get some of the details from the organic newspaper and our member are happy for that. Secondly, as you can see in the figures we have given in the questionnaire crop yields are not very high because we are in a semi arid area at the border between Nyeri and Laikipia. So we need additional advice on crop production and livestock keeping.

The members are grateful for the work you are doing to educate them on new farming methods.

Haron Mwangi Gichama,
Nairutia Primary School,
P.O Box 175, Mugunda Via Nyeri

I have received copies

Thank you very much for your quick response in sending me 50 copies of *The Organic Farmer*. I got them in good time and in good condition.

I can assure you that they are being put to good use and will be read by many farmers in the various groups in my location. I hope that we will continue to receive this publication and other information that can be of assistance to our farmers.

Chief Joseph K. Mutai, P O Box 69,
Kaptagat.



How to plant fodder trees

Fodder trees and fodder hedges help farmers to optimize the use of their available land.

Eric Lumosi Asiligwa

No doubt, trees on a farm have a lot of advantages, especially fodder trees (see TOF Nr. 12, April 2006). There are more benefits if the farmer knows where and how to plant fodder trees and what type would help him most. There is always some space: a shamba of 2.5 acres has over 400 meters of external boundary, plus additional sites along the internal boundaries and around the homestead. Several sites are therefore available to plant fodder trees.

When to plant?

The best time to transfer seedlings to the field is at the beginning of the rain season, when the soil has enough moisture and continuous rainfall is expected for more than two months. Before removing the ready seedlings of around 25 cm height from the nursery to the planting site, they should be exposed to harsh field environment: remove the shading materials covering the nursery and reduce watering to only once to every 2 to 3 days. This process is called hardening of seedlings.

How to plant?

Choose a site on which to plant the fodder trees and clear all the weeds from it. Dig planting holes about 20 cm wide and 30 cm deep. Apply a 1-kg tin of manure to every hole and mix well with topsoil of the planting hole. Add a tin full of fresh ash to every 20 liters of manure. Fresh ash keeps pests like termites away too.

After planting the seedling in an upright position and mixed soil returned to cause a firm grip, water them well to enhance their chances of survival. Ensure that the seedlings retain some soil attached to their roots, to enhance their survival rates. Overgrown seedlings can be uprooted when the ground is really wet. Cut the stem to 15 cm above the ground and then cut the main root to 20 cm long. Finally cut the lateral roots 5 cm from the main root.

What next?

Fodder trees can be grown for fodder alone or to provide other products like firewood, stakes, seeds, or services like soil erosion control, shade or ornamental purposes. Whatever



Calliandra: source of protein

One of the best fodder trees is Calliandra. This shrub grows to 4 to 6 meters, requires rainfall that is above 1,000 mm per year. It does better in well-drained soils, as it does not tolerate water logging. Fodder is ready for harvesting in the ninth month after planting, 4 to 6 harvests are possible per year. Calliandra is of great value because of its high protein content. It can assist a lot when the livestock are fed only on grasses like Napier, which are often low in protein.

the case, it is important to manage the trees in the correct way. What does this mean in terms of fodder trees?

Fencing: Make a fence around the tree to prevent it from being destroyed by livestock and wild animals.

Weeding: Seedlings grow slowly and can easily be choked to death by weeds, which compete with them for water and nutrients. They can also harbour pests. Keep the area around the seedlings clear of weeds

Thinning: Trees need enough room to grow strong and healthy. If planted for fodder, space the trees about 50 cm apart. To grow trees and shrubs for firewood and stakes, space them 1 meter apart, and to control soil erosion, reduce tree spacing to about 30 cm apart.

Mulching: To conserve soil moisture, the area around the trees should be mulched. Take care: Do not place the mulch in direct contact with the trees, since the moist and cool environment could encourage pests and diseases. Also avoid mulching where there are termites, as this may increase damage of the trees by the insects.

In the next issue: Protecting the trees from pests and diseases

Market place



Internet-information: Some readers have requested us to provide them with internet sites that give information on organic farming. There are hundreds of websites. Here are We give you some of the most important ones:

www.oisat.org
www.une.edu.au
www.new-agri.co.ke
www.organicconsumers.org
www.organic.com
www.planorganic.com
www.ofrf.org/GENERAL
www.fao.org/ORGANICAG
www.soilassociation.org
en.wikipedia.org/wiki/organic_farming
www.ifoam.com

If you need more information, you may find it here: Soon, BioVision, the sponsor of our newspaper, will soon open a similar service for farmers in East Africa.

Traditional vegetables: The Rural Outreach Programme has seedlings of indigenous plants for sale. Farmers interested can get in touch with them through the following address: Thomas Wakala Mutuli, ROP, P.O. Box 29086, 00625 Nairobi
Tel. 0735 568 824;
e-mail: thomasmutuli@yahoo.com

Energy saver: James Olwangu from Kakamega sent us this photo. He wonders why many farmers throw away charcoal dust at a time when energy is becoming a problem to many rural households. He advises farmers to mix the dust and the small charcoal particles with wet soil



and then mould them into balls. They should dry in the sun for five days. If two of the balls are placed into a burning jiko, they will burn for hours.

Tissue Bananas: In the last issue of *The Organic Farmer* I read the interesting story on Tissue Bananas. Does somebody in the Nakuru-region have seedlings? If this is so, please call Isaac, 0735 442 433. Thanks!