

The Organic Farmer

The newspaper for sustainable agriculture in Kenya



Nr. 21 February 2007

Keep an eye on bean flies!

Bean flies are very small, but they cause a lot of damage if the farmer does not take action.

Su Kahumbu

Have you ever had the problem where some of your beans do not do as well as others? Where all of a sudden you notice stunted growth, yellowing of leaves and collapse and drying of the entire plant? One may even give up on the idea of being able to save the weak plants, resulting in loss of yield and waste of planting time, as well as loss of income. One might feel this is due to nematodes, poor seed quality or poor soil fertility. But more often than not, the culprit is the Bean Fly or Bean Stem Maggot.

Bean flies are especially active following the rainy season. They usually do not occur during the rainy season and during prolonged dry spells. They can occur more frequently when using drip irrigation. This insect can cause up to 100% seedling mortality



Black bean larvae on the root of a bean plant

in a susceptible variety when infestations are high.

Small flies ...

Make a simple experiment. Select a poorly looking bean plant. Simply lift an entire plant from the soil and where the soil meets the stem you will notice browning scar tissue, which is sometimes swollen and flaky, around the stem. Peel a little of this crusty scar tissue back and you will notice small shiny black cylindrical larvae or pupae!

Bean flies are among the major pests of beans and related crops, including cowpea, soybean and mung bean. The adult fly is about 2 mm long with clear wings that reflect a metallic blue colour in sunlight. The wings do not fold over but form a 'v-shape' when the fly is resting.

... big damage

The eggs are deposited directly into the stem, leaf or emerging bean. Incubation lasts 2-4 days, after which the larva, a small white maggot, eats its way to the root zone where pupation takes place. Some types travel through the leaf and stem tissue to pupate near the root collar. During this travelling, the larvae feed extensively in the stem tissue. The duration of the larval and pupal periods is about 10 days each. *continued on page 6*

— in this issue —

Compost, the best feed for plants

Compost plays a central role in organic farming. *The Organic Farmer* carried an article on compost nearly two years ago, in our first issue! But: Nearly every week farmers are sending us questions on compost. We have therefore decided to provide farmers once again with additional information on the correct way of compost making. *Pages 4 and 5*

Choose maize varieties very carefully

Whenever trying out a new seed variety it is advisable to test the seed on a small portion of land before large scale production. *Page 3*



Dear farmers,

In the past 20 issues of The Organic Farmer, which we have so far produced, we have given you plenty of information, new ideas, tips and advice on ways to improve your farming practices in a way that makes farming a rewarding and profitable venture. Organic farmer Su Kahumbu has always answered your questions in a brilliant way. There is no doubt that you have at your fingertips some of the most up-to-date information any farmer needs to improve production. But our major worry has always been, "Do the farmers really utilize the information we give them every month"?

We are asking this because one of the major complaints we get from technical personnel and research scientists who have interacted with many of you out there, is that many farmers hardly follow the advice given by our experts. Many researchers who have put up demonstration plots among the farmers in various parts of the country, are really disappointed. When they go back, they find that the farmers have gone back to their old ways of doing things.

Every year, scientists all over the world spend billions of dollars in research funds to investigate ways to control diseases, fight new pests, propagate new varieties of crops, or devise new ways to improve soil fertility. These research findings have helped revolutionise agriculture and even tripled food production for farmers in developed countries.

In Africa and here in Kenya, in particular, we have premier agricultural research institutions which are internationally recognized, such as ICIPE or the Kenya Agricultural Research Institute (KARI). It is sad that even farmers living next to such institutions do not use them to improve their methods of agricultural production.

Of course farmers may be cautious about trying new ideas for fear of not getting the expected results. But this is not an excuse for not trying. One can even set aside a small portion of land and try a new method or crop variety being introduced. Many of these ideas and techniques have been tried elsewhere with great success. There is no reason why they cannot work here in Kenya. Our farmers should accept change and embrace innovative methods of farming in order to increase their yields and income.

OUR OPINION

The Organic Farmer would like to welcome Dr. Joseph Mureithi to the Advisory Board of our newspaper. He is the Deputy Director of the Kenya Agriculture Research Institute (KARI) and in charge of Research and Technology. Joseph Mureithi brings not only a wealth of experience, he is also a respected and committed scientist. Anyone dealing with the needs of small-scale farmers, with the improvement of soil quality, or with research for better yields, will find the name of Dr. Mureithi. Karibu!

The Editors

The Organic Farmer

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



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Layout

In-A-Vision Systems (k)

Blight-resistant tomato developed

The new variety will make growing of organic tomatoes much easier.

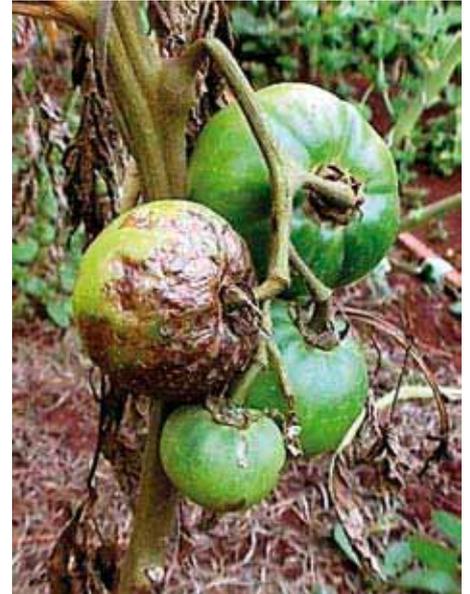
Markus Knapp*

Late blight, a disease caused by the fungus *Phytophthora infestans*, is a major disease of tomatoes in Kenya, mainly in the cool-wet season. It makes tomato growing in the rainy season very difficult and farmers have to spray fungicides regularly to control the disease. The only option for organic farmers is spraying with copper oxychloride (see The Organic Farmer Nr. 7, November 2005). Resistance to pests and diseases is an important part of integrated pest management (IPM) and organic farming and an ideal solution for small-scale farmers. Resistance is built into the seed and no additional inputs are necessary to make it work.

Researchers at the World Vegetable Center (AVRDC) in Taiwan and its Regional Center for Africa in Arusha have developed tomato lines that are resistant to late blight. These lines were obtained by crossing tomato varieties with wild tomato species that are resistant to the disease.

They require chemical spraying

The yields of these lines and the quality of the tomatoes are as good or better than varieties commonly grown in Kenya such as the Money Maker or Marglobe. Some lines also show resistance to Tomato Mosaic



Tomato affected by blight (Photo ICIPE)

Virus and Tomato Leaf Curl Virus, two other diseases of tomatoes that are very difficult to control. The resistant tomato lines are currently being tested by AVRDC and the Horticultural Research Institute Tengeru in Tanzania and are also used by ICIPE in a farmers' training project on vegetable IPM in Taita Hills and the Usambara Mountains in Tanzania. The resistant tomatoes do not require any fungicide treatments against late blight and will therefore save a lot of cost and labour for the farmers. They will also make growing of organic tomatoes much more easy.

ICIPE to start biological pest control

Before they can be distributed to farmers, these new tomato lines have to be tested according to national regulations and registered as varieties. This process has already started in Tanzania. ICIPE will also start experimental releases of a predator of the red spider mite, a major pest of tomatoes in the region. The natural enemy (imported from Brazil) will be tested in Kirinyaga district soon (see The Organic Farmer No. 6, September/October 2005). The Kenya Standing Committee for Import and Exports (KSTCIE) has granted approval for these releases in December 2006.

If the biological control proves to be successful, the release of the predatory mites can be combined with the use of tomato varieties that are resistant to late blight to solve two major problems in tomato production without using pesticides.

* Dr. Markus Knapp is a research scientist at ICIPE

Crop rotation important

Tomatoes are tasty and nutritious, they are easy to grow and contain vitamins A and C – especially when eaten raw. However they are not easy to grow if a farmer cannot control diseases and pests. If properly taken care of, a farmer can get 4 to 5 kilogrammes of tomatoes per plant.

Watering: Water once a week; at least one bucket of water every week is enough. Try not to water the leaves or even splash the water onto the plants as this can bring diseases. The best way to prevent some of the common tomato diseases is through crop rotation. It is important to remove and burn all diseased plants. Mulch heavily in order to retain moisture in the soil. If affected by bacterial wilt, do not plant tomatoes, potatoes or pepper in the same plot for at least five years. (TOF)

Know the right seed for your area

Although poor seed selection can affect your maize harvest, farmers still get poor yields because of poor crop management.

Peter Kamau

Selection of the right seed maize variety is still a problem for many farmers, yet this is a very important decision that determines the amount of harvest at the end of the season. Seed varieties are developed to perform best under different conditions. This depends on the altitude, rainfall, type of soil and temperature. Take the example of H614 maize variety, which is grown in most high altitude areas in Kenya. The main reason farmers prefer this variety is due to its ability to do well even under poor management. The variety is consistent and can withstand sudden climatic changes. The problem is that many farmers are ignoring advice given by seed companies when buying seeds. The result of this is that they end up planting varieties that are not suitable for their area and in this way get poor yields. Before buying seeds, a farmer has to know all the characteristics of the seed variety they intend to buy and if it is suitable to the climatic conditions in their farming area.

Dr. Jenniffer Chumo, a maize breeder at the Kenya Seed Company advises farmers not to abandon seed varieties they have been growing in favour of new ones, without testing the suitability of the new varieties on their farms. "We often advise farmers not to abandon seed varieties they are used to in favour of new varieties whose qualities they do not know", she says.

Test on a small place in the shamba

Whenever a new variety is released, farmers are advised to isolate a portion of their land, plant and observe all its characteristics. Once they are sure the variety can do well, then they can adopt it.

Although poor seed variety selection is partly to blame for decreased yields in some areas, farmers are also to blame because of the way they manage their crop. According to the chief scientist at the KARI station in Kitale, Dr. George Ombakho, a maize variety may yield 6 to 8 tonnes per hectare (1 hectare is about 2.5 acres) while under research trials at the station, but when it is released to farmers, the yields goes down to around 2 tonnes per

hectare. He says farmers face many problems such as low soil fertility, late land preparation and planting, lack of weeding, and even wrong seed application methods.

"The main reason for low maize yields is general neglect by farmers", he says.

He advises farmers to buy only the maize seed varieties recommended for their areas. Below are some of the newly released maize seed varieties, their characteristics and the recommended areas for growing:

Highland varieties

H6213:

This is currently the most popular hybrid variety among farmers in highland areas. A late-maturing variety, it was released by the Kenya Seed Company in 2002. With an average yield of 52 bags per acre, it produces more than any other variety in this category. The variety does well in areas at an altitude of 1700-2100 metres above sea level and which receive an annual rainfall of between 1000-2000 mm. It has good standability (does not fall due its strong roots and stalks). It is also resistant to ear (cob) rot, rust, Grey Leaf Spot disease, stem and leaf blight. It can do well in Trans-Nzoia, Uasin Gishu, and tea growing zones of Kiambu, Nyeri, Meru, and Nyan-darua districts.

H6210:

Released by the Kenya Seed Company in 2001, it can produce up to 50 bags



H6213 maize variety

(Kenya Seed)

per acre and has good standability; the variety is resistant to ear (cob) rot, rust, Grey Leaf Spot, stem and leaf blight. It does well in areas with an altitude of 1700-2100 metres above sea level and an annual rainfall of 1000-2000 mm.

KH600-14E:

The variety was released by KARI in 2004. It has an average yield of 34-48 bags an acre (about 88-188 bags per ha) and does well in areas with an altitude of 1800-2500 metres above sea level and an annual rainfall of 1000-2000 mm. The variety has good rust and blight resistance. It can also withstand Grey Leaf Spot disease and has good standability and does not rot. It takes 150-165 days to mature. Areas where it can be grown include the slopes of Mount Elgon, Trans-Nzoia, West Pokot, Uasin Gishu, Nandi, greater Kericho, Nyeri, Laikipia and lower Nyan-darua.

KH 600-15A:

The variety was released by KARI in 2001. It produces 35-47 bags an acre. It can be grown in areas with an altitude of 1800-2000 m above sea level and an annual rainfall of 1000 to 2000 mm. The variety has a fairly good husk cover and standability. It can be grown in Bungoma, Trans-Nzoia, West Pokot, Uasin Gishu, Nandi, Kericho, Taita, upper Nyeri, Laikipia, Lower Nyan-darua, and upper Kiambu.

Medium-Altitude varieties

H516:

This is a new high-yielding variety for the medium altitude. It yields 28 bags an acre (70 bags per ha) and does well in hot, low-rainfall areas and matures in 3 to 4 months. It is resistant to foliar diseases and pests, has a good husk cover and good standability, and can withstand ear rot, rust, GLS, stem and leaf blight.

Other varieties under this category include H515, H513, and H511. The most suitable areas for these varieties are Busia, Kisumu, Siaya, Embu, Muranga, Nyeri, Nakuru and lower parts of Kisii.

Dryland, Low-altitude varieties

These include the Pwani (PH4 and PH1) which are meant for coastal areas. Dryland hybrid DH01 does well in all areas where Katumani variety is grown. These include Kitui, Makueni and Baringo areas. ■

I finally made my own compost

To me compost was compost and it did not matter how I prepared it so long as it decomposed well enough for use in the shamba.

By Peter Kamau

Over the years, the idea of compost making seemed to be a very simple affair to me. At our farm in Cherangani, Kitale, I would collect farmyard manure from the cattle boma and sheep pen and pile it in one big heap in the banana plantation behind the homestead. Here I would leave it to "burn" until it was ready for application on the bananas and maize field as an additional fertilizer, after the usual application of DAP fertilizer. We had to be patient because the decomposition period for this manure would take something like one or even two years before we could use it.

Most of the time, however, we could not wait for this long because we wanted to use it whenever we planted fruit trees such as oranges and avocados. In such circumstances, we had no option but to mix the fresh farmyard manure with the topsoil and put it into the planting holes! How some of the plants survived is a miracle which I cannot explain even now, but one thing I observed is that it took a very long time before the plants started showing any sign of proper and healthy growth, while others simply wilted and died.

I ignored instructions

My first opportunity to learn compost making came during a field day I attended at the Kenya Agricultural Research Institute (KARI) station in Kitale back in 1981. But I did not take much interest in the whole affair. To me, compost was compost, and it did not matter how I prepared it so long

as it had decomposed well enough for use in the shamba.

I held this position regarding compost until last year when we launched *The Organic Farmer* newspaper. I came to learn the value of compost, especially in addressing the problem of declining soil fertility and crop yields. In the late 1960s, we could harvest as much as 30 bags of maize per acre; now we can hardly get 15 bags even after using the same amount of chemical fertilizer. The damage caused by these fertilizers was very clear to me. Last September I decided to make my own compost and reduce the use of synthetic fertilizers.

Compost material carefully selected

The first task was to ensure I had all the material needed to make quality compost. To do this, I had to use four farm workers to provide the labour. We collected all the necessary material and brought it to the compost site. The plant material is carefully selected to ensure only plants rich in minerals and various plant nutrients or medicinal properties are used in order to enrich the compost. Composting needs to be done when there is plenty of plants to choose from.

One of the best plants for composting is tithonia, as it is rich in nutrients. As we did not have enough of it, we had to get it from neighbours. We got other plant materials such as maize stalks, and branches from various trees on the farm and cut all these into small pieces that would decompose easily. We also cut stacks of comfrey plant, which is also rich in nutrients and activates the decomposition process. Finally, we used 20 wheelbarrows of fresh farmyard manure.

I followed all the instructions we had given to farmers in the past edi-



Material ready for composting (foreground), a compost heap (background). (TOF)

tions of *The Organic Farmer*. After making each layer of compost with the required material, we would sprinkle 2 kg of rock phosphate and spray with a diluted solution of Effective Microorganisms (EM2) mixed with molasses. The addition of rock phosphate is important because most organic material has only small quantities of phosphates. The EM solution has many beneficial microorganisms that help break down the compost faster (ordinary compost can take up to 6 months to decompose while EM can help reduce this period by up to 3 months). Within a period of three months, we had managed to bring the compost to the required standard.

Cover the compost

As I write this article, the compost is ready for use in the next planting season. Many farmers do not seem to follow the instructions on compost making. It is very common to see heaps of farmyard manure in many farms today. The manure is not mixed with grasses and other material which could produce quality compost. Lack of proper cover leads to nitrogen loss and even the loss of other essential nutrients when it rains. Since I made the compost many of my neighbouring farmers have made visits to my farm to see how it is done. If they did it correctly, I am sure they would reduce their dependency on expensive chemical fertilizers which only damage their soils. ■



Adding rock phosphate supplements nutrient levels in compost

(Photo TOF)

It pays to make good compost

Making a compost heap requires labour, material and knowledge. Follow the steps outlined below and your soils will be better.

Felix Mbitu Murimi

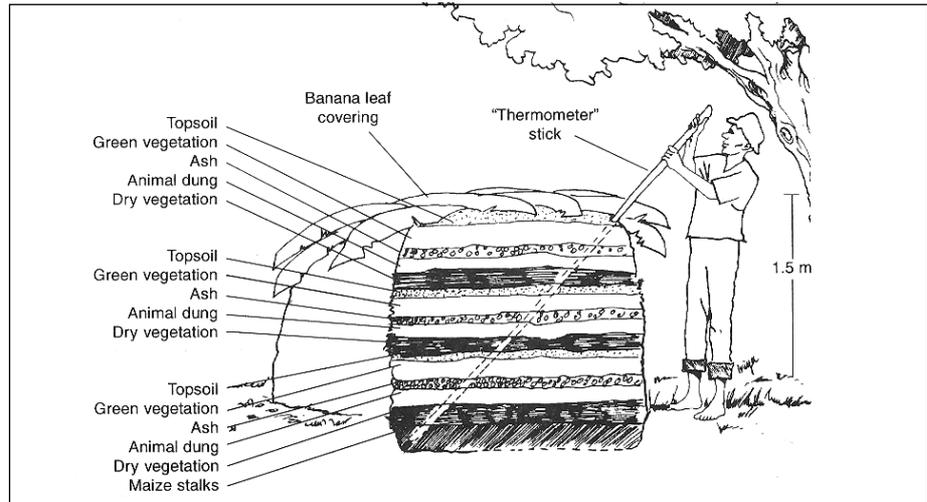
Farmers who need to improve their soil quality and fertility can save a lot of money. Instead of buying fertilizer, they can make compost. Of course, this needs a lot of labour to prepare and spread it over the farm, but compost is like gold for the soil. Well-made compost is an organic fertilizer that is balanced in plant nutrients. This organic fertilizer, known as humus, improves the soil fertility; it helps retain the soil moisture and mixes the soil with air (soil aeration). When properly made, compost becomes immediately available as plant food without the need to be first broken down by soil microorganisms.

What materials do we need?

The requirement for composting is organic material such as animal manure, crop remains, kitchen and household waste and hedge cuttings, but not seeding weeds. It is useful to include some plants with a lot of nutrients. All kind of legumes leaves (for example crotolaria, desmodium, soybean, lablab etc.) add lots of nitrogen to the compost. Coffee husks, banana stalks, sweet potato vines, etc. are important as sources of potassium. Excellent for compost are the leaves of tithonia and comfrey, since they add not only nitrogen and potassium but also help speed up the process of breaking down organic materials of plant and animal origin to produce humus.

How to prepare compost

1. Select a place which is sheltered from the wind, rain, sun and especially runoff. If animal manure is available, make the compost near the cattle boma (because of the manure-transport). Make a rectangular pit 4 feet by 5 feet; don't make it too large as you must be able to work on it without stepping on the pile. Take care that you have enough space around the compost heap.
2. Dig a shallow pit (1 foot deep), put the soil on one side; you will need it.
3. Put at the bottom of the pit a layer of rough materials such as maize stalks and hedge cuttings. This improves the air circulation in the pit. The maize



stalks should be chopped into small pieces to accelerate decomposition.

Sprinkle some water on this layer.

4. Add a 1 foot layer of green material (preferably legume cover crop materials or kitchen waste which are rich in nitrogen) and water carefully. This layer forms organic composting material.

5. Add a 2 inch layer of topsoil or old manure or old compost to ensure the presence of microorganisms; they are vital for decomposition.

6. Add a thin layer of wood ash and water adequately. The ashes contain valuable minerals including potassium, phosphorus, calcium and magnesium. The ashes also neutralize the acids produced during decomposition, especially by the animal manure.

7. The next layer should be of green materials (1/2 foot thick). Use green leaves from high-protein leguminous trees like calliandra, leucaena and sesbania. Very good are also hedge cuttings of plants like tithonia as well as comfrey.

8. Sprinkle a little topsoil or old compost which are useful for decomposition.

9. Add more layers in turn, starting with dry vegetative materials, then animal manure, followed by wood ash, green vegetation and topsoil. Remember to sprinkle water on every layer. Build the pile up to 1.5 m (5 feet). A well-made pile has almost vertical sides and a flat top.

10. To complete the pile, cover it all over with a layer of topsoil about 10 cm thick. This layer prevents plant nutrients from escaping from the compost pile. Lastly, cover the whole pile with dry vegetation such as banana leaves

to reduce the moisture loss through evaporation.

11. Take a long, sharp, pointed stick and drive it in at an angle so that it passes through the pile from top to bottom. This stick is your "thermometer". After three days, decomposition will have started in the pile, and the stick will be warm when you pull it out.

12. Pull the "thermometer" out from time to time to check the progress of the pile. The "thermometer" tells you also how dry or wet the pile is: it should be moist but not wet.

13. Sprinkle water on the pile occasionally, about every three days, depending on the weather. If it has been raining, there is no need to water.

14. After three weeks, turn the pile over. Do not add fresh materials except water. The "thermometer" tells you when you must turn the pile: When the stick is cold, then the pile is too wet, the bacterial activity is suppressed through lack of oxygen (air). If the stick shows a white substance (a white fungal cover), the compost heap is too dry. Water the pile if necessary. Turning the pile is important: It mixes the different layers and makes the decomposition faster and more complete.

15. The compost should be ready after 4 weeks. Check the temperature: If the stick feels warm, the pile is still decomposing, and the compost is not yet ready. Properly decomposed compost should have a fresh, earthy smell and contain no grass, leaves or animal manure.

Note: If you have access to EM (effective micro-organisms), there is no need to add soil, a pile can be started on a flat surface. (see page 4)

Be careful with *Datura stramonium*

What medicine/pesticides can be obtained from *Datura stramonium*?
 Caroline Nkatha Kithinji P.O Box 38, Igoji

Datura stramonium, also called Thorn Apple or Jimson Weed, is a tall annual weed with angular leaves. This plant is very poisonous and must not be ingested, as the other names indicate: Angel's Trumpet, and Zombie's Cucumber. *Datura* is occasionally used as an available alternative to illegal drugs. Typically it is not illegal, although some states in the USA do

have laws regulating its consumption.

It can be used as a fungicide, insecticide, and a nematicide, but must be used with absolute caution. It is helpful against cutworms, nematodes and some fungal diseases. Due to its poisonous nature, it is better used as a pour-on into the soil rather than a spray. If it is to be used as a spray, it is better used on plant parts that are not eaten. If it is applied against fungus on courgettes, tomatoes etc., then do this only before the fruiting stage.

All parts of the plant can be used. They may be dried in the sun and used as a powder, or one could crush a few leaves and add to 1 litre of water for use as a spray (one could add a little soap in the spray mixture to act as a sticker).

Scientists in Spain studied the relationship between maize and *datura* over 4 years in a flood-irrigated field. Results: Maize yield was decreased by 14-63% when competing with the weed. Yield was worse as the time between crop and weed emergence decreased. ■



...controlling bean fly damage

continued from page 1

This feeding activity destroys stem tissue and reduces lateral (side-ways) root formation. Some plants try to compensate by forming new roots above the

damaged areas. Young seedlings and infested plants under stress wilt and die within a short time. Older and more vigorous plants may tolerate the damage, but growth and yield will be affected.



Prevention and cure

- If infestation is high, spray young bean plants with a biopesticide (neem, pyrethrum, sodom apple, etc.) at weekly intervals up until the flowering stage.
- Earth up around already-affected stems, allowing the bean to send out more roots.
- Do not over-water beans when using irrigation, especially drip irrigation.
- Add neem cake or pymac (pyrethrum cake) to planting holes and later also around bean stems.
- Mulch young beans.
- Be vigilant, deal with the problem before it becomes a disaster. ■

Are mushroom and honey organic?

Q.I have always wanted to start mushroom farming but I would like to know whether it has to go through the certifying procedures or is it already a known fact that its organically accepted? And how about beekeeping? Can we also say it is naturally organic (honey production)? Wilson K Barchiba, Kibasiso Libraries, P.O Box 376 Eldama Ravine. Tel. 0725 556 292.

A. The question of whether honey is organic by default is commonly asked. The answer is very clear from all certification bodies. Honey may only be called organic when certain requirements stipulated in the Organic Standards have been met. Firstly, the forage area of the bees (which is up to a radius of 2-4 km) must be free of any toxic contaminants. A beekeeper neighbouring a conventional flower farm may not be able to achieve certification if the certifier feels his bees forage in a high risk zone.

Beekeeping, like animal husbandry in general, must be carried out with full respect for the hive, the queen and the growing brood. Harvesting of honey therefore must be done with consideration given to minimal destruction of the complex hive structure and setting. Devastation of a hive is prohibited, queen bee mutilation (wing clipping) is prohibited, the use of some sanitizers and antibiotics are prohibited for hive sanitation, the feeding of bees with sugar water is

restricted unless under emergency conditions. Extraction of honey from a hive cannot be complete as a percentage must be left behind for the growing brood. Beehives are also subject to a conversion period of one year. These are just some of the conditions an organic bee producer must consider. Again, to prove compliance of the organic conditions, a beekeeper must keep comprehensive records.

Organic standards for mushrooms

With regards to organic mushrooms the culture medium for mushrooms shall contain ingredients such as organic grain and straw when applicable. Other ingredients in the culture medium and the inputs used in the mushroom production shall be in compliance with the organic standards for crop production. Thus if the straw, maize stalks, etc. upon which the mushrooms feed and grow is of conventional origin, the mushrooms may not be sold as organic mushrooms. ■

Su Kahumbu answers your questions



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Paper changing agriculture in Kenya

We are among the beneficiary organizations that receive *The Organic Farmer* magazine regularly here in Kitale. Information on sustainable agriculture gained from the newspaper is now at the fingertips of our staff. Besides training local communities, we have also devised a way through which all partner farmers' groups get access to the vital information through the magazine. We now have a library where we stock the magazine; we lend the farmers' groups each of the monthly issues. After reading, they return it back to us and we give them some more copies. Our librarian ensures that all new copies have been circulated to all our farmers' groups.

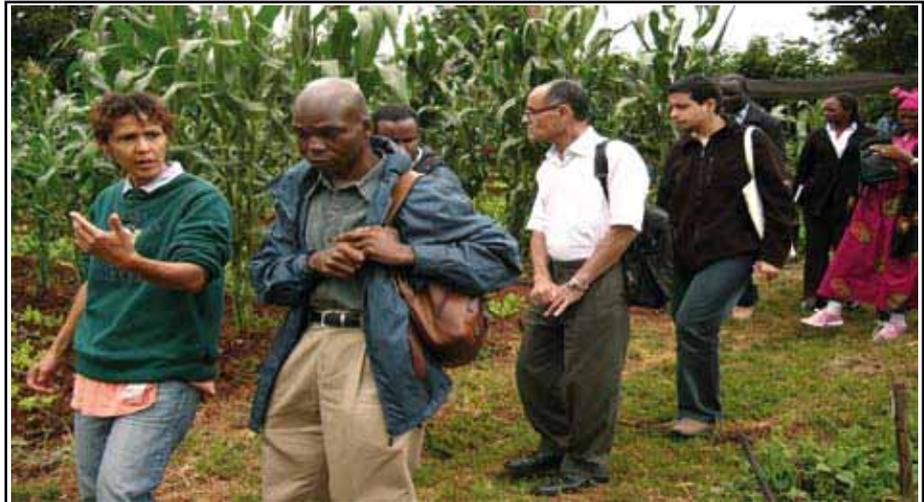
To guarantee excellent utilization of the newspapers, our staff usually make follow-ups to check if the farmers are following the advice as stipulated in your magazine. I am glad to inform you that the influence of this resourceful magazine is great and the impact is overwhelming. It has improved not only the knowledge and skills of our staff but also the production capacity of the farmers. Farmers now are able to formulate their own botanical pesticides with less supervision from our staff in controlling different types of pests and diseases. This has reduced expenses and increased the profit margin, especially for small-scale farmers who for decades have not been able to meet the cost of chemical pesticides.

On behalf of the YRREC and the entire community, I give a lot of credit to the farmer's magazine, the editor, sponsors and all other contributors whose effort has enabled the newspaper to be an important tool in transforming agriculture in the country. Keep sending us copies.

Moses K. Tenai, Coordinator, Youth for Rural Reconstruction and Environmental Conservation, P.O. Box 4541 Kitale Tel. 0724 523 676

We want organic poultry production

I would like to thank you for *The Organic Farmer* magazine that is very educative to farmers. On behalf of Kwinyinyia Farmers Field School



Participants attending a training programme on Organic Agriculture Development visit Su Kahumbu's farm in Tigoni. They were drawn from 14 African countries (Photo TOF)

members, I request you to send more copies of the newspaper to our group. We are 20 in number. We hope you will assist us. Thanking you in advance.

Beatrice Nyaga, P.O Box 69, Siakago.

I need back issues for our field school

My group is Midzimitsano Farmers' Field School. I have read the May 2006 issue of *The Organic Farmer* from a friend; I am very much interested in getting copies right from the first publication. I hope that my request will receive your consideration.

Francis Ngunyo Hinzano, P.O Box 285, Kilifi

Farmers in Paraguay ask for help

Receive greetings from the district of San Pedro del Parana Paraguay, South America! I'm a Kenyan missionary working in Paraguay. I work with the Pastoral Social promoting organic sustainable rural farming. We train our members on how to control pests and weeds without using chemical herbicides and pesticides. When I was recently in Kenya for holidays, a friend of mine passed me some past issues of "*The Organic Farmer*". I enjoyed all the topics you write on.

Some four months ago, the field agricultural technicians came across the problem of stemborer which affects sugarcane and maize. I was so delighted on reading about its control using the predator *Telenomous isis*! How can we get it here in Paraguay taking into account restrictions

of international movements of species of plants and animal products? Is it possible for ICIPE scientists to establish a center of field research here in san Pedro del Parana?

We can discuss practical details of such a venture. Congratulations for the nice work you are doing.

Our telephone numbers for contact are: +595 742 20151 / +595 975 659202

Fr Pascal Kinoti, svd, Coordinator Pastoral Social- San Pedro del Parana Itapua, Paraguay

Dear Father Kinoti,

We will forward your request to ICIPE.

Editors

Request for newspaper

We hereby request you for the above mentioned newspaper. We are a group of six farmers from Nyambaria sub-location, North Kitutu location Manga Division Nyamira District who want to know more about organic farming. We came across the September/October 2005 issue from a friend. We hope you will be sending us the newspaper on a monthly basis.

Nyauncho Nyangena, P.O Box 1165 Kisii

Dear Farmers,

If you have any questions or ideas for articles, or if you would like us to publish experiences about your shamba or within your farmers' group, please contact us. We shall get back to you!

SMS ONLY

Tuma maoni yako! Asante.



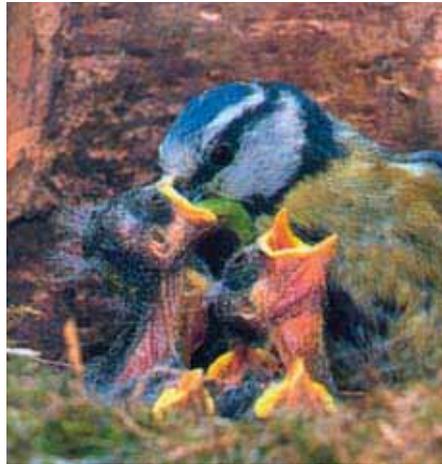
tips and bits

from farmers for farmers

Birds are useful in organic farming

About three years ago, I had to visit a friend in Nairobi. Since it was too early, I decided to while away the time in a local bookshop – the first time in my life! Of course, on the shelf were books about agriculture, flowers and vegetables. I opened a book and found something very interesting. I read that a pair of blue tits (a type of bird) will collect up to 15,000 caterpillars to raise a brood (raise their young ones). I also read that birds need a place to stay and to build their nests, and that the ideal habitat (living place) for birds is hedges.

Traveling home, I thought about birds and hedges. Some days later, I made some cuttings from a tithonia bush somewhere in the corner of my shamba. I planted them, and now, around two years later, I have a very nice hedge of tithonia, making boundaries between different parts of my shamba. They produce wonderful flowers, and a lot of birds are going in and out. Since I read in *The Organic Farmer* about the benefits of tithonia for composting, I regularly cut the leaves and throw them into the compost.



Blue tit feeding its young
Source: *Organic Gardening*

In January, your newspaper brought a series about agroforestry. You wrote about the benefit of fodder shrubs like calliandra, so I planted some of these bushes. Now they have grown into a thick hedge. The leaves I feed to my four cows. They just love the leaves of the calliandra, and the birds like these bushes. It is such a nice experience to listen to the birds sing early in the morning.

Phillipp Maina, Karatina

Use of legumes doubles maize yield

In the January issue of *The Organic Farmer* you featured at length the benefits of growing legumes. By chance I came across the same information in a scientific report conducted by scientists from KARI among farmers in Matunda area on the slopes of Mt Elgon, which I wish to share with other farmers.

The soils in Matunda (Mt Elgon region) were very poor. The objective of the study was to determine the effect of several green manure varieties on the yield of maize and beans as a way of helping farmers to practise sustainable methods of production to increase their yields and income. Several trials were conducted in which different varieties of green manures such as mucuna, soya beans, dolichos, crotolaria and purple vetch were planted using compost in combination with chemical (inorganic) fertilizers. Each of the green manure crops was planted between the rows of maize and beans alternatively over

a period of three years. From the findings mucuna had the highest ground cover followed by crotolaria, dolichos, soya beans and purple vetch in that order. Although there were no

significant difference in the yield of maize and beans planted between the various green manures, they all gave higher



mucuna

maize yields than what farmers had harvested before the experiment. Green manures in combination with chemical fertilizers gave higher maize yields than green manures on their own, (the organic matter from green manure helped to make efficient use of the applied inorganic fertilizer). It

Market Place



Tissue culture bananas. Do you need organically grown tissue culture bananas as from January 2007? Contact J G Njoroge 3N-Harvest, P.O. Box 82 Saba Saba Tel. 0721638034.

Organic Vegetables: I have organically grown capsicums, butternut, carrots, and courgettes. Interested buyers can get in touch with me at the following address: Joseph Njoroge, P.O. Box 52542, 00100, Nairobi, Tel.0721 647 618

Conventionally certified seed: Benjamin Lugano, the certified seedling grower from Kitale, will be operating a stand at this year's Eldoret Agricultural Show which opens on February 27. He will sell the following fruit seedling varieties to interested farmers: Hass and Fuerte varieties of avocado, passion; Kent, Harden and Tommy varieties of mangoes, tree tomatoes, oranges- Washington variety, paw paw, apples- ann variety. For details farmers can get in touch with him at: Lugano Horticultural Farm Enterprises, P.O. Box P.O. Box 323, 30200 Kitale Tel. 0733 990 574.

Articles wanted. Do you have something interesting you would like to share with other farmers? From now on, *The Organic Farmer* will award gift items for every article published. Karibuni.

was also observed that the maize yield obtained from use of green manure was the same as the yield from half the recommended rate of both compost and chemical fertilizers.

Benefits for farmers

The result of the trials show that the use of green manures on their own doubled the farmers' yields, but when used in combination with chemical fertilizers, the yields were three times higher. Since most of the farmers were resource-poor and could not afford the cost of chemical fertilizers, the research concluded that the use of green manures on their own was not only cost effective, but improved the soils in the long term while suppressing weeds and adding nitrogen.

Benson Wafula, Nairobi

Source: *Proceeding of the 18th conference and End of the Millenium Celebrations- 4th to 8th December 2000-Published by the Soil Science of East Africa, National Agricultural Laboratories P.O.Box14733, Nairobi.*