

The Organic Farmer

The magazine for sustainable agriculture in Kenya



Nr. 27 August 2007

Green manure is best fertilizer

Mucuna or crotalaria or purple vetch (pictured) are not just weeds. Used properly, they are the best way to improve soil fertility.

The Organic Farmer

Crop yields in sub-Saharan Africa have hardly increased since the 1960s. The reason for this poor performance is the declining soil fertility in the continent. On 85 percent of the African farmland, the yearly loss of nutrients is more than 30 kg per hectare – much more than on all other continents. The poverty of the African farmers is the main reason. Smallholder farmers in the region do not have the means to access inputs (such as fertilizers) and extension services needed to raise their productivity. At the same time, traditional methods of replenishing soil fertility, such as fallowing or rotations, are no longer possible due to the diminishing size of land holdings.

A way out of this sad development is the use of green manure legumes to improve soil fertility. Legumes such as lablab, desmodium and purple vetch have many benefits, including soil fertility replenishment, soil and water conservation and weed and pest control, not to forget their use in human and animal nutrition. Research done by the Kenya Agricultural Research Institute (KARI) as well as by many other institutes

in this issue



The fruit fly can cause great loss to farmers' mango trees. How can they control this pest? *Page 4 and 5*



worldwide is pinning much hope on the use of green manure legumes and their addition of nitrogen to the soil

TOF on air!

On Thursday of every third week of the month, you can hear *The Organic Farmer* on the Kiswahili Service of KBC from 8.30 pm to 8.45 pm. In the next programme we will talk about income generation with dairy goats, poultry and mushrooms. Tune in on *Thursday 20th August, 2007, 8.30pm!*



(the most important nutrient for crop production). However, the change is slow and is not seen for three to four seasons.

According to KARI studies in the Kenyan highlands, legumes such as mucuna, lablab, crotalaria and canavalia, planted as a monoculture during one season, added 2 – 15 tonnes of organic matter per hectare and were contributing 35 – 150 kg nitrogen under the same area. Research by scientists and farmers in Kisii discovered the benefit of these legumes in intercropping with maize: Before the use of green manure, the yields were 12 bags of maize per acre, and afterwards, the yield rose to 20 bags per acre. See pages 2 and 3

Dear farmers,

One of the most frequent requests we receive from the farmers throughout the country is to provide them with financial assistance for buying farm inputs. We lack resources to help the farmers. As much as farmers are eager to improve their production and income, their request is a clear indication that they are unable to access credit in the local financial institutions. This is mainly because of the many conditions attached to loans.

As we have reported many times in this column, there are many low-cost methods farmers can use to improve their production. One of these methods is to incorporate green manure legumes into their cropping systems. These legumes contain important nutrients such as nitrogen that help improve soil fertility. Although many farmers already know that legumes offer a simple and cheap method of improving soil productivity, many have largely ignored this advice; most of them burn bean residues after threshing the beans.

Apart from the above-mentioned financial dilemma, behind this behaviour lies a structural problem. "Many rural households and have neither the labour to devote to careful crop management nor time to learn new techniques", writes Robert Tripp in an article for the British Overseas Development Institute. Added to this is the fact that new technologies such as the green manure method may require some additional labour, even though it would be more than worthwhile.

We would really encourage small-scale farmers to open their minds and try new methods that could help improve their yields. It is only those who are ready to adapt to new ideas that manage to survive in the rapidly changing situation in the agricultural sector. Instead of looking for solutions to their problems elsewhere, it is time farmers tried to find the solution within their own farming systems and practices. In other words, the farmers' future lies in their own hands.

Finally, we have one point to make: Many farmers' groups are complaining that they do not get our magazine from their distribution institutions, or group chairmen do not hand them out. We know that this may be a genuine problem. Those groups who are unable to get their monthly copies can write to us, giving their full addresses so that we can send the magazine directly to them.

OPINIONS

Quote: There is, of course, a gold mine or a buried treasure on every mortgaged homestead. Whether the farmer ever digs for it or not, it is there, haunting his daydreams when the burden of debt is most unbearable.

Quote: Life on a farm is a school of patience; you can't hurry the crops or make an ox in two days.

Quote: No one hates his job so heartily as a farmer. *H.L. Mencken*

Quote: Never answer a question from a farmer. *Hubert H. Humphrey*

The Organic Farmer

The Organic Farmer is an independent magazine for the Kenya 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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Layout

In-A-Vision Systems (k)

Mixed cropping is good practice

Planting different crops on the same land has many advantages for the small-scale farmer.

The Organic Farmer

A short while ago, farmer Zachary Mwarari sent us an SMS asking us to show the difference between intercropping, mixed cropping and associative cropping. There is no sharp line to draw, as all three are somewhat related, and all three methods play a major role in sustainable and organic agriculture. Since many farmers send us questions on this issue, we feature it together with the article on legumes on page 3.

Different needs

"Associative cropping" means the growing of two or more crops on the same field at the same time. This method relies on the simple fact that different plant species, or even varieties, have different needs for nutrients, water, light, etc. Different plants require different amounts of nutrients to produce a good yield. Some plants have an especially high demand for specific nutrients. While some plants like full sunlight, others prefer half-light. Plants growing in poor soils prefer to be shaded more than plants growing under ideal soil conditions.

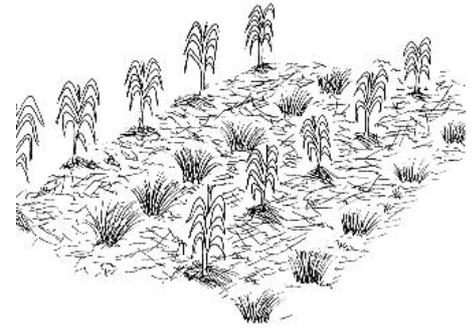
There are two different ways to associate crops:

Mixed intercropping: Two or more crops are randomly sown at the same time, and share the same space (row), or can even be planted in the same hole.

Intercropping in lines: Two or more crops are sown at the same time in neighbouring lines in the same field (as Kenyan farmers do with maize and beans).

Since different plants have different needs, the root competition should be minimal, and the periods of most active nutrient uptake should not coincide. A farmer has to carefully select the plants that can be planted together (associated):

- Crops with strong rooting systems should be associated or alternated with plants with a weak root growth.
- Planting distances should be such that nutrient competition between plants can be minimized.
- Deep-rooted crops are best grown together with shallow-rooted plants to maximize efficient use of space.
- Mixing broad and small-leaved plants or creepers with plants with



Row intercropping

taller stems ensures good soil cover and moisture retention.

- Leguminous crops (e.g. beans) may be grown in association with crops or before crops which have a high demand for nitrogen (e.g. maize).
- Perennial plants can be effectively associated with seasonal plants.

Benefit of associating crops

- Due to the more efficient use of space (over and under the ground), and because of beneficial interactions between the mixed crops, this method permits more intensive production.
- The yields are usually lower for each crop than when the crops are planted separately, but the total yield of the field is usually much higher when two or more crops are grown.
- Diversification is important: Mixed cropping reduces the dependency on only one crop. If one crop fails, the other one will provide food. Intercropping spreads the economic risk among various crops.
- The different crops do not mature at the same time. This means that one crop will remain and provide the much-needed cover when the other crops are harvested. And, there is not so much work in harvesting the entire field at the same time.
- Soil quality improves when nitrogen-fixing plants (such as beans) are mixed with crops or when a green manure legume is planted for this purpose (see page 3).
- Intercropping means that there is less need for rotating crops from one season to the next.
- A variety of crops reduce pest and disease attack compared to single cropping systems. The deterring or attracting effects of some plants helps to prevent pest attack on other crops. Planting garlic or onions next to other plants, for example, helps to repel pests such as nematodes; their smell makes it difficult for the insect to detect its target crop.

Legumes are a cheap source of nitrogen

When it comes to fertilizing the soil, green manure legumes are best. Small-scale farmers rarely use this method, however.

Philomena Nyagilo

Instead of spending money on commercial nitrogen fertilizers, farmers can use green manure legumes to improve soil quality and get a better harvest. However, using up space in a small shamba for plants that cannot be eaten is a very strange idea to many farmers.

The green manure method is a pillar of organic and sustainable farming. Green manures are plants grown to accumulate nutrients for the main crop. When they have built up the maximum biomass, they are cut and incorporated into the soil. This fresh plant material will decompose within a short period of time and release

nutrients quickly. This is different from crop residues, which decompose at a slower rate and will therefore contribute more to the build-up of soil organic matter than to fertilizing the crop.

Increased yields for the farmer

Green manures penetrate the soil with their roots, bind nutrients and support the infiltration of water into the soil. The contribution of organic matter to the soil from a green manure crop is comparable to the addition of 9 to 13 tonnes per acre (0.4 ha) of farmyard manure.

Leguminous plants fix nitrogen from the air into the soil. This nitrogen enriches the soil and feeds all plants in the area. The portion of green manure-nitrogen available to a crop planted later is usually about 40 to 60 percent of the total amount of nitrogen contained in the legume. For example, a purple vetch crop that accumulated 90 kg of nitrogen per acre prior to plowing down will contribute approximately 45 kg of nitrogen per acre to the succeeding grain or vegetable crop. Lesser amounts are available for the second or third crop following a legume, but increased yields are apparent for two to three growing seasons. Other advantages of green manure are as follows:

- Some green manures can be used as fodder plants, or even to provide food for human consumption (e.g. beans and peas).
- By decomposing, green manures release all kinds of nutrients, including phosphorus, potassium, calcium, magnesium, sulphur, and others. They are accumulated by cover crops during a growing season. When the green manure is incorporated or laid down as mulch, these plant-essential nutrients become available during decomposition.
- Green manures suppress weeds and protect the soil from erosion by wind and water and direct sunlight. Soil cover reduces soil crusting and surface water runoff during rainy periods.

Important points to consider

Green manuring is an inexpensive way to improve soil fertility and the nutrition of the main crops grown. There are some aspects which must be considered:

- Green manuring requires some additional labour.
- If green manures are intercropped



Legumes: nitrogen factories

All plants need nitrogen to grow well. In theory, there is no lack of nitrogen. Air consists mainly of nitrogen (78 percent), but most plants are not able to take nitrogen directly from the air; they need it in modified form. Some plants, especially from the legume family, are capable of fixing nitrogen directly from the air with their roots, and changing it into a soluble form as nutrients. Some of this nitrogen is spread in the soil and can be used by neighbouring plants. That is why intercropping is important (see page 2). The effect is even better when legumes are dug into the soil. They enrich the soil with nitrogen, and plants growing next on the same field benefit from this readily available nitrogen.

Legumes: Lablab (above), mucuna (below). (Photos courtesy of Top Tropicals)



with the main crops they compete for nutrients, water and light, but the benefit of having a source of high protein food (e.g. beans) may outweigh this.

- If there is not enough food available in a farmer's family and little space on the shamba, it may be more appropriate to grow a food crop rather than a green manure and recycle the crop residues, or to intercrop a green manure crop with the main crop. ■

How to use green manures

- If you grow green manures in crop rotation, the time of sowing must be chosen such that the green manures can be cut down and worked into the soil before the next crop is sown.
- Green manures need water for germination and growth!
- If legumes and green manure are grown in a field for the first time, inoculation of the seeds with the specific rhizobia (soil bacteria) may be necessary to benefit from nitrogen fixation by the legume; you can find the inoculation material in Kenya Seed Company stores and shops.
- In the undersown method, the green manure is sown at the same time as the main crop or a little bit later, if the green manure grows faster than the main crop.
- The time gap between digging in the green manure into the soil and planting the next crop should not be longer than 2 to 3 weeks, so as to prevent nutrient losses from decomposing green manure.
- Green manures are worked in easily when the plants are still young; if they are taller or too bulky, it is preferable to chop the plants. The best time to dig in green manures is just before flowering.
- Green manures should be incorporated near the surface of the soil, not too deep: In heavy soils, dig in 5 to 15 cm; in light soils, 10 cm to a maximum of 20 cm!

Protect your mangoes against fruit flies

Fruit flies cause great losses to mango farmers. Here are some methods to control these pests.

Sunday Ekesi (ICIFE)*

Mango production is continually gaining recognition for its potential as a major source of income, especially for smallholder farms. The total area under mango production in Kenya alone is estimated at 16,000 ha. Mango exports from Africa were estimated at 35-40 thousand tonnes annually and worth around KSh 3 billion (US\$ 42 million). The EU remains the largest destination market for export from Africa.

Three types of pests

In each region where mango is grown, it is attacked by fruit flies of different types.

- One of the major pests of the fruit fly family is *Bactrocera invadens*. In addition to mango (which is the primary host), the insect also attacks other cultivated fruits such as oranges, tomato, banana, guava, custard apple and avocado.

- Another fruit fly is *Ceratitis cosyra*. In addition to mango, it also attacks guava, custard apple and marula. The insect gradually has been pushed away by other fruit fly species from the lowland areas, but they remain a threat to mango production in the highlands.

- Third in terms of economic importance on mango are *Ceratitis rosa* and its close relative, *Ceratitis fasciventris*. Apart from mango, they also attack a broad range of cultivated and wild fruits.

Fruit flies cause direct losses to mango when the female fly lays her

eggs under the skin of the mango fruit. The eggs hatch into whitish maggots that feed in the decaying flesh of the fruit. Infested fruit quickly rot, causing considerable losses in production.

In the past, yield loss on mangoes in Kenya, Tanzania and Uganda due to the indigenous fruit flies range between 30 to 70 percent, depending on the locality, season and variety. This problem became aggravated by the fairly recent introduction of *Bactrocera invadens*, and damage has now increased to between 40 to 80 percent, especially in lowland areas where it is now the dominant fruit fly pest.

Control methods

There are several methods of controlling fruit flies. The approach that is being promoted by ICIFE is to adopt a combination of methods by applying Integrated Pest Management (IPM) techniques.

Baiting technique: The traditional method of fruit fly control is based on use of food baits. The bait attracts the fruit flies from a distance to the spot of application, where the flies feed on the bait, ingest the pesticide and die. The bait is normally applied to a 1 square meter (1 m²) spot on the canopy of each tree in the orchard on a weekly basis, starting from when the fruits are about 1 cm in size and continues till the very end of the harvest. Several commercial baits are available in the market, such as NuLure, Buminal and Solbait, that can be mixed with pesticide such as Spinosad and applied as above. Another commercial product is GF-120 (Success). This bait is already pre-mixed with pesticide (Spinosad)



Fruit flies: *Ceratitis capitata* mating



Bactrocera invadens male enlarged 800 times (Photos courtesy: Robert Copeland) and can be applied using the on-label information on the container.

Major problems in the use of baits in Africa is that they are expensive and inaccessible to a large number of fruit growers. Research at ICIFE has shown that a protein bait from brewer's yeast obtained as an industrial by-product provides good control of mango infesting fruit flies when applied in low volumes as spot spray to 1 m² of mango canopy or to the mango trunk. Research is continuing to formulate the bait to enhance its attractiveness to fruit flies. The new bait should be available as an alternative to imported products in the very near future.

Soil inoculation: During development, mature maggots of fruit flies drop from the fruits to the ground, burrow into the soil and form a resting stage called the puparia. An important part of fruit fly suppression research at ICIFE includes soil treatment with a fungal pathogen to kill the mature maggot and puparia. The active ingredient in the granules is a fungus called *Metarhizium anisopliae*, a naturally occurring fungus that is used worldwide as a biological pesticide for controlling different kinds of insect pests. The fungus is formulated as granules and can be manually distributed by hand and then raked into the soil under the mango canopy. Application is usually done once in



Healthy Tommy mangoes (L). Infested mango fruit full of maggots(R). (TOF / R. Copeland)

continued on page 5

Common mango varieties grown in Kenya

A mango orchard should be kept clean to prevent pests and diseases. Good care can improve productivity and income for farmers.

The Organic Farmer

Like other farmers, Linner Sigei from Bomet is interested in mango production. She has 50 grafted mango trees which are about four years old now, and wants to know if she can grow them organically. Yes, she can, as we have shown already in TOF January

Controlling the fruit fly...

Continued from page 4

the season at the onset of fruiting; the fungus can persist in the soil for over one year. Additional research is still being conducted on the appropriate formulation and the product should be available in the near future for application by farmers to control the pests.

Additional control methods

Orchard sanitation: Poorly managed or abandoned orchards and a variety of wild hosts can result in a build-up of fruit fly populations. Orchard sanitation, which entails the collection and destruction of all unwanted fruits containing fruit fly maggots on the tree and on the ground, can significantly reduce damaging fruit fly populations in the orchard. This is a very laborious exercise, but can be quite effective if the fruits are collected regularly and destroyed twice a week for the entire season. The collected fruits should be destroyed by either burning, burying (at least 50 cm deep), or putting them in tied plastic bags and exposing them to the heat of the sun for a few days until the fruit is rotten and all the maggots in the bags are dead.

Mechanical fruit protection: Wrapping or bagging of individual fruits with newspaper or plastic bags to prevent adult fruit flies from laying eggs on the fruits is also a practice for producing fruits that are free from fruit flies. To be effective, the fruits must be wrapped or bagged well before fruit fly attack, at least one month before harvest. Although laborious, it is an effective method for expensive fruit species produced for export or fruits produced in backyard gardens for family use.

**Dr. Sunday Ekesi is a Senior Scientist at ICIPE and leads the fruit fly programme.* ■

2006 and as we report here again. Mango trees develop into well-shaped trees within the first four years and do not require pruning unless there are excessive branches or unless they acquire an unusual shape. The orchard should always be kept clean to prevent pests and spread of fungal diseases. The most common diseases are powdery mildew and anthracnose. Powdery mildew is a serious disease in all mango-growing areas in Kenya. Infections can lead to complete crop loss. Anthracnose is also a common disease limiting production, especially in areas with high humidity. Farmers growing mangoes conventionally could use chemicals such as Benomil or sulphur mixed with a sticker. For those growing mangoes organically, copper oxychloride may be used to control these diseases.

Fertilizer application

For farmers who prefer growing the fruit organically, well-prepared compost can be applied every one or two months around the tree following the drip line (where the tree's absorption roots are located). Farmers must be careful not to apply too much compost, as this tends to promote rapid tree growth at the expense of flowering and fruiting. For the mangoes to be certified as organic, the orchard has to be inspected to ensure all certification requirements are met. It is recommended that soil and leaf samples are taken for analysis before any fertilizer application is done in order to know the plant's nutrient requirements.



Kent variety: The Kent variety has a large greenish-yellow fruit with a red or crimson blush on the shoulder. Its flesh is juicy, melting deep yellow and fibreless, with a rich flavour. The Kent tree is large and vigorous with a dense upright canopy. It is late-maturing and is suitable for export.



Ngowe Variety: Ngowe is the most easily recognised of the local mango varieties. Ngowe mango trees are comparatively small and round in shape. The fruit is good for commercial production and export, however the tree is susceptible to powdery mildew.

Haden variety:

Because of its good quality, seeds from the Haden variety are used as parent for several other varieties of mangoes. It produces medium to large-sized fruit and is very juicy with a pleasant aroma. The Haden variety has an attractive appearance and is suitable for commercial production.



Tommy Atkins variety: The Tommy Atkins variety has become an important commercial variety. It has a firm, deep-yellow flesh, medium juice, and moderate fibre and pleasant aroma. It is good for export because of its longer shelf life. It can also resist anthracnose and powdery mildew.

Apple Variety:

This variety originated from the Kenyan coast. It has a rich yellow/orange colour when ripe, with medium-to large fruits that are round in shape and smooth in texture and that do not have fibres.

The tree is susceptible to anthracnose and powdery mildew. ■





Compost kitchen waste well before use

Can I use kitchen waste directly on bananas? Or which is the best way? P. Gachanja, Ruai Tel. 0722 304 469.

Yes, you can use kitchen waste directly on bananas, although it would be better to first compost this waste. By directly applying the fresh waste, the nutrients will not be evenly distributed to the banana roots. However by composting, and then feeding the plants, you will have a better result. If you must feed the bananas directly, try to disperse the different kinds of waste evenly around the plants, and then be sure to cover the roots with grass, hay or banana leaves. These will act as a mulch, thereby reducing the likelihood of nutrients escaping through evaporation, soaking or rodent damage. Beware of rats and other rodents, and even dogs, that may be attracted to the direct fresh waste.

Not all kitchen waste is suitable. The inclusion of meat and bone waste will attract rodents and will give off an offensive smell. Biodegradable vegetable waste is fine. Old newspapers and cardboard are also suitable. It is also worth noting that given the fact that banana roots will be beneath the added waste material, these need to be watered regularly for optimum absorption. Many banana growers plant bananas in deep holes and add composted waste into the holes, which gradually fill up as more compost is added. Watering a system like this is more effective, as the water and nutrients it carries are retained in the area around the banana roots.

Su Kahumbu answers your questions

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Control bean flies with sodom apple

What ratio of sodom apple fruit or leaves should I use to control the bean fly?

Peter Okello, Sondu Tel 0729 518 628.

Sodom apple solution is made using 1 kg of fruit and leaves to 3 litres of water. Be sure to earth up the beans stems that are already affected by the pest, to allow the beans to send down secondary roots.

If your field is seriously affected, lift and burn the beans. Bean flies are less prevalent during the rainy season, therefore plan your planting of beans accordingly.

If a field or area has a high level of infestation with bean flies, rotate with another crop. Bean fly maggots can persist in the soil for an entire season.

Sukumawiki is a nutritional powerhouse

Do you love kales – or *sukumawiki* (“push through the week” vegetable), as we say in Kenya? I really do. It is an amazing plant. It is one of the most potent health-promoting vegetables known. Sukumawiki is a nutritional powerhouse and is seriously underrated by being considered as a poor man’s food. Sukumawiki, a member of the brassica family of vegetables, contains all the important minerals and vitamins for human life and boosts the immune system. But Tiluk Samwel has some doubts: “Using sukumawiki as a vegetable causes heartburn and speeds up blood pressure more than local vegetables”, he writes to us. “What could be the cause?”

Sasa, Samwel! Sukumawiki does not speed up blood pressure, on the contrary! Sukumawiki is rich in potassium. Potassium is a mineral used by the body to eliminate blood impurities and improve overall circulation. Therefore, potassium is important in the reduction of blood pressure. However, potassium is partly lost in the cooking process, so it would be better to steam sukumawiki rather than boiling it. Alcohol and caffeine also block the potassium.

Eat Garlic!

Two foods that are especially rich in potassium and magnesium and are easily added to meals and can also be eaten raw are parsley and garlic. Researchers have found that people who eat one clove of raw garlic a day have lower blood pressure, because it helps improve cardiovascular health and prevents the arteries hardening. If you don’t fancy smelling of garlic, take a supplement. Other commonly available foods rich in potassium include bananas, avocados, leeks, spinach, peas, beans, chickpeas, lentils and nuts.

Heartburn? Change your lifestyle!

Samwel has another question: Can sukumawiki cause heartburn? One



in four of us suffers from heartburn. Heartburn is an irritating condition called acid reflux; it is very uncomfortable, causing a burning pain behind the breastbone and a taste of acid in the back of the throat or mouth. It occurs when acid is forced out of the stomach via the valve that connects the stomach to the gullet (oesophagus).

Most of the frequent causes of heartburn (or acid reflex) are related to your lifestyle. There are a number of factors that can contribute to the symptoms of heartburn, including smoking, eating too quickly, wearing your clothes too tight around your midriff, and consuming the wrong kinds of food and drinks (alcohol). In this context, *sukumawiki* can cause heartburn; however, this is very rarely the case and only happens if you have a very, very sensitive stomach.

Heartburn can be avoided by good eating habits. You should avoid

- meals containing fatty or spicy ingredients;
- sweet foods;
- eating quickly large portions and not chewing enough, which will force the stomach to produce more acid to digest the contents;
- beverages such as coffee, acidic fruit juices, carbonated drinks and alcohol; instead, you should drink at least 2 litres of water a day;
- eating a big meal immediately before sleeping.

Philomena Nyagilo



Letters to the editor

The E.A. Organic Mark is a step forward

The concern of Su Kahumbu (*TOF*, July 2007) is justified, but with some reservations of what might transpire on consultative forums before the implementation stage. It is my view, that it could be too early to worry on the outcome of the launch of the E.A. Organic Mark. It is important to note that the final draft of E.A. Organic Standard has not yet been perused, debated and ratified by the East African legislative assembly.

Certification requirements

The three certification bodies such as Encert-Kenya, Ugocert-Uganda and Tancert-Tanzania, mentioned by Su Kahumbu are presumed to be recognized and acceptable by their respective countries. They would automatically qualify to oversee the certification process based on the E.A. Organic Standard. I do not foresee any objection on the use of the certifying body's symbol and that of the E.A. Organic Mark on products certified in accordance with E.A. Organic Standard. The future E.A. Organic Accreditation Committee should be able to ascertain a reasonable and affordable charge payable by the certification bodies for the use of the Mark. The cost of the Mark would most likely be passed by the certifying body to the producer who in turn could raise the selling price to the consumer. The cost implication of the E.A. Organic Mark is therefore crucial.

The insinuation by Su Kahumbu that the three certification bodies

could gang up and refuse to inspect and certify on the E.A. Organic Standard would be a scenario which could impel us to consider encouraging the formation of more certification bodies in the E.A. region. Allowing the formation of more certification bodies would create a competitive service providers situation.

Involve the certification bodies

It is possible that Tancert, Ugocert and Encert participated in the formulation of E.A. Organic Standard; their own standards should by now be revised to incorporate the requirements of the E.A. Organic Standard. It is encouraging on our part to note from Mr. Musa Njoka, the CEO of Encert, that their organic standard is already revised to accommodate the requirements of the E.A. Organic Standard. It is assumed that Tancert and Ugocert have also updated their standards.

Co-operation needed

To have an Organic Standard and its Mark for the region is a major step forward towards uplifting the economic base of our communities. This could also create the necessary and important international recognition of our capacity to initiate and manage a well-organized and significant organic industry. It is therefore important that all organic stakeholders should support that initiative.

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Mushroom-story helped us

We hereby kindly request to be put on your mailing list in order to receive monthly copies of *The Organic Farmer* magazine. We are a community-based organic group by the name Makerecha Organic Group. We came across a copy of your magazine from a friend of a member in the group. It happened to be the April 2007 issue on mushrooms and you can never imagine how much it has assisted us because that is what we are currently dealing with. We are 15 active members in the group who are interested in becoming more knowledgeable on organic farming. Your consideration will be highly appreciated.

James Gacheru,
P.O Box 521-00902 Kikuyu

Good training material

Mutuambay Self Help Group is undertaking farming activities in Meru North District. Our activities are spread in two sub-locations Morega and Anjuki. The group has started projects which are on-going and are doing well. We collaborate with agricultural extension staff. We also intend to start beekeeping projects.

We have decided to get information from your institution on organic farming technology, now that our group has become a source of information for the members and our neighbours who highly rely on chemicals in their farms and homes. We shall be ready for whatever feedback.

Rebecca Thairora, P.O Box 182 60607,
Mikinduri

Good tips for seed selection

We would be grateful if you include us in your mailing list. We have been reading *The Organic Farmer* magazine through others and it has been very useful to us. The February 2007 issue really updated us in selecting the right seeds for the season. Johari enterprise is composed of 10 peasant farmers and businessmen. We grow cereals, vegetables and fruits.

Lawrence J Opondo, Johari group,
P.O Box 242, Sondu

Students need magazine

On behalf of Young Farmers' Club in Netima High School, I would like to request you to send us a copy of the above magazine to help our club, which is involved in horticultural projects in our school. We badly need access to information on organic farming.

Mr. Nyongesa Wanyonyi, P.O Box 24,
Malakisi

Send me magazine

Kindly do send me a copy of *The Organic Farmer* magazine. I am an enthusiastic farmer and an ardent listener to your radio bulletin on KBC every week on Thursdays between 8.30-8.45. Congratulations!

Kennedy Messo, P.O Box 142-50241,
Kipkaren River

Magazine informs us

I am an organic farmer practising sustainable agriculture with my family members. So I request for monthly copies of your magazine. I will appreciate most because it will keep us on our toes and be alert with regard to the benefits of organic farming, sustainable agriculture, as well as sustainable development in our community.

Rila Wamukota Natwati, P.O Box
1996, Kitale

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

Spider mites are tricky to control

Spider mites are the most important non-insect pest of tomatoes. The pest is spreading rapidly into the drier areas of Kenya. The eggs, which are white/pink and tiny, are usually laid on the under-surface of leaves. The reddish adults (0.25 mm long) have eight legs, and produce a fine silk webbing on leaves which tends to protect them from predators.

Transmission: In warm dry weather, mites can multiply and spread very quickly; heavy rains or irrigation can reduce the population. They can be dispersed by the wind – or even on the farmers' trousers!

Damage: Spider mites prefer the underside of leaves, but in severe infestations will occur on both leaf surfaces as well as on the stems. Heavily damaged plants are weakened, produce smaller and lighter fruits, or can even be killed as result of feeding by large numbers of spider mites.

Control: Patrol the field regularly to determine the level of infestation.

- Cultural practices help control mites. Keep the field clean and keep it free of weeds. Old crops or weeds infested with spider mites are ideal breeding grounds for these pests – remove them or burn them immediately after harvest. Sticks for holding tomato plants should be scrubbed with water and soap before using them again.
- Natural enemies such as ladybird beetles, lacewings or predatory mites can control the spider mites. Therefore avoid broad-spectrum pesticides, especially those based on pyrethrum, since they kill the predatory mites, causing spider mite numbers to flare up. You should therefore use pes-



Tomato plant and fruit infested by spider mite (Photo courtesy ICIPE)

ticides (botanical or synthetic) only when it is really necessary. If you want to use neem, look for a product that contains a high proportion of neem oil, as it is more effective.

- Intercropping with garlic, basil and onion can give some protection due to their strong smell.
- Tomato spray: Boil moderately 1 kg of fresh tomato leaves in 2 liters water; cool and use as a spray.
- Castor oil plant (*Ricinus*) spray: Soak green seeds and leaves in water for 24 hours, filter and spray. Caution: Castor bean seeds are poisonous, so do not allow people or animals to drink the spray or eat tomatoes with spray on them.

Farmers like growing tomato varieties which do not require stakes for support. But these varieties are prone to tomato blight, especially during the wet season as they are near the ground. The varieties pick up contaminated water on the ground leading to rapid infection of the tomato plant by both early and late blight. Farmers are advised to plant these varieties only during the dry season when there is less water on the ground. They could also reduce the blight problem by going for varieties that require support with stakes, but care should be taken when irrigating to ensure

contaminated soil does not come into contact with the leaves or the stem, thus reducing the chances of spreading the diseases.



Tomato varieties not supported by sticks are prone to blight. (Photo TOF)



Market Place

Training: Baraka Agricultural Training College offers a wide range of short courses for farmers, development workers and rural business people: Sustainable agriculture July 29-August 4, Participatory project planning August 5-18, Introduction to beekeeping August 12-18, Bee equipment-making August 19-25, ICT for rural development September 16-23, Processing of bee products August 14-20, Sustainable Development October 28 – November 24, Microsavings and Credit Scheme November 4-11, Animal health November 18-24, Community Development November 25-December 1. Charges vary between Ksh 6000 and Ksh 8000 covering tuition, food accommodation and training. Participants must apply at least three weeks in advance to book a place. The college also offers a 16 month Certificate in Sustainable Agriculture and Rural Development. The deadline for applications is August 8, 2007 for the 2007/2008 academic year. Application for a 16-month Diploma in Sustainable Agriculture and Rural Development course that caters for students in East Africa will close on August 8, 2007.

Organic Produce: David Gakere, a Kenyan resident in Johannesburg is keen to contact local exporters or farmers growing organic produce. He would like to buy only certified organic produce. Those with these products can contact him. Write to: gakere@mweb.co.za

Land for sale: 25 acres in Passenga scheme, well-drained fertile soils on a gentle slope, currently under potato and oats; clean freehold title. Electricity and piped water available. Contact Waiyaki Mungai Tel. 0723-787171.

Amaranthus Seeds: Ronald M Nyabuya has about 300 kg of Amaranthus seeds. Any farmer interested in buying them can contact him. Write to Ronald Nyabuya P.O.Box 995, 30200, Kitale, Tel.0721 562 678.

Charcoal Stoves: Aruba Farmers Group are making charcoal stoves for chicken rearing. Any farmer who is interested can contact the group coordinator, Mr. Kibiwot Cheruiyot, at the following address: William Kibiwot Cheruiyot P.O. Box 596, Kitale 30200 Tel. 0728 342 166.