

The Organic Farmer

The magazine for sustainable agriculture in Kenya



Nr. 33 February 2008

Beware of fake seeds in the market

Poor selection of maize seed is to blame for the poor harvest obtained by many farmers.

The Organic Farmer

Small-scale farmers are increasingly finding it difficult, due to lack of money, to buy the required inputs to boost maize production. The problem is even more serious when it comes to maize seeds. Every year, many farmers buy poor quality seeds, often sold to them by middlemen, because it is cheap.

These farmers always end up with a poor harvest. Even for those farmers with adequate resources, poor selec-

tion of seeds has led to poor yield. Seed varieties are developed for use in different geographic areas, depending on the amount of rainfall, altitude, temperatures and other conditions. Competition among seed companies has created more confusion in the seed market. Many resources are spent on production and promotion of new varieties but very little time and resources are invested in informing and educating farmers. In this issue, we provide farmers with tips and guidelines they need to follow while selecting seeds to ensure that they get the best seed for their agricultural zones. See page 4 and 5



Good seeds are essential for a good harvest

Diseases threaten banana production

The Organic Farmer

Bananas are one of the most important tropical food crops in the world. However, their production in Kenya and the rest of East Africa is threatened by poor management and the spread of fungal and bacterial diseases. Consequently banana production has declined in all banana producing areas.

Most farmers do not know much about banana diseases. Like many other crop, bananas need proper management. This starts right from

the land on which they are planted. Bananas should be planted on land that has been left fallow for at least one year. Field sanitation is very important for keeping pests away. Cutting banana pseudostem and leaving it in the field overnight can serve as a trap for banana weevils. Take extra precaution in using animal manure as banana fertilizer. This type of manure promotes the occurrence of banana weevils.

It is very dangerous to obtain banana seedlings from neighbours because their banana crop may be diseased, and the disease could therefore be transferred into your farm. One source of clean banana seedlings is tissue culture bananas; farmers can get it from KARI research stations near them or certified seedling producers. Never buy planting material from roadside nurseries. More about banana diseases and how to control them on page 3.



Banana affected by Panama disease

A tragedy

We are really shocked by the wave of violence that has swept our country. As much as we condemn the vote rigging, which is the root cause of the unrest, we condemn the organized killing of our fellow farmers and innocent wananchi in parts of the Rift Valley province. We appeal to all of you, fellow farmers, not to listen to the voices of violence. Does one benefit from burning a neighbour's house? Can one fill the stomach with feelings of revenge? Fellow farmers, respect and take care of each other. Do not forget that it is the ordinary wananchi, who are struggling to earn an honest living, that have to bear the consequences of the fighting. (TOF)

Dear farmers,

It seems that with the higher living costs and the increasing prices for fertilizers, seeds and fuel, maize growing for commercial purposes is no longer viable for small-scale farmers. Since the beginning of the harvest season in October last year, middlemen have been paying as little as Ksh 800 for a bag of maize. This amount is a disregard of the small-scale farmers' work even when paying for labour cost at the rate of Ksh 20 a day.

It is simply not wise to invest in a crop that no longer ensures a good return. It would be better if farmers could store their

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maize until prices become favourable. But most small-scale farmers do not have safe storage facilities. And at the beginning of the year they need the money for school fees and other financial commitments and obligations.

What can be the solution for small-scale farmers? There is no perfect or simple solution whatsoever. What we recommend is that farmers should start diversifying their farming activities (apart from maize for self-consumption). At least those who can afford (or have access to) small loans should try alternative farming activities such as dairy farming, poultry keeping, mushroom production or even horticultural crops. These products are currently on demand in the market and are fetching good prices.

MY OPINION

Minimum tillage or reducing soil disturbance in agricultural systems encourages an increase in mycorrhizae or root fungi which are very essential for a healthy, productive soil. Mycorrhizae are negatively affected by soil heating especially when the land is put under fire to clear it for planting. They are also affected by ploughing or over-grazing. The fungi which occur around the root zone, extend to areas where the plant roots cannot reach. They facilitate water uptake during drought when there is little water in the soil. This makes it possible for many plants to sprout and grow healthy.

The farmer's weekly

The Organic Farmer

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Layout

In-A-Vision Systems (k)

Lucerne is a nutritious fodder

Only a few Kenyan farmers grow Lucerne because they do not know its advantages.

The Organic Farmer

Willy Kirui, a farmer in Elburgon, has been growing Lucerne, a highly precious forage legume, for his 10 dairy cows for the last 4 years. His cows like Lucerne because it is very palatable and nutritious. Before, he used to feed his animals on Napier grass and other fodder. When he introduced Lucerne to the cows' feed, milk production did not only increase (to an average of 18-20 litres a day), as farm manager Philip Rotich explains. "But also the animals became stronger and healthier." He mixes the Lucerne with silage made from green maize, and supplements it with concentrates. The farmer has 3 out of his 6-acres of land under Lucerne.

Lucerne is one of the most nutritious feed for dairy cattle. Many farmers ignore it because they think it is difficult to grow, but Lucerne can do well in most areas, especially with good management. There are three main varieties of Lucerne that are grown in Kenya – Cuf 101, Hunter River and Hairy Peruvian. Hairy Peruvian does well in high altitude while Hunter River and Cuf 101 are suited to lower altitudes.

How to grow Lucerne

Seedbed preparation: Lucerne requires fine, firm and a weed-free seedbed that is well prepared before the onset of the rains. The sub-soil should be well broken with forked jembe. Apply 10 tonnes of thoroughly decomposed farmyard manure or compost manure and dig it up to sub-soil.

Planting: Make furrows 30-40 cm apart and 2.5 cm deep. Use 10-15 kg seeds of Lucerne per hectare. In areas where Lucerne has not been grown before, use Lucerne inoculant available at the University of Nairobi. If an inoculant is not available, collect soil from areas where Lucerne has been previously grown and mix it with the seed before planting. In acidic soils (with pH less than 4.9) agricultural lime is applied at the rate of 10 tonnes per hectare. Phosphates, inoculant and liming promote root development, nodulation and nitrogen fixation.

Farmers interested in growing Lucerne must have the soil tested for acidity before planting. Soil samples can be taken from the top soil (0-10 cm) and from the sub-soil (30-40 cm).



If the sub-soil sample has a pH of less than 5.5, the soil is too acidic and not suitable for growing Lucerne.

Management of Lucerne

Weed Control: Hand weeding should be done 4-6 weeks after planting and thereafter whenever the weeds appear. Use plant extracts or organic pesticides such as neem two to three times a week to control pests. Continue applying farm yard manure to the Lucerne field to improve soil fertility, structure and herbage yields. Harvest Lucerne when it starts flowering (when it is about 30 cm high) to a stubble height of 4-5 cm from the ground level. 6-8 cuts can be obtained in a year. Once it is established on the farm, Lucerne competes strongly for light and water and is able to control other weeds. Its long tap root enables it to get water from deep down the soil. Thereby it remains green even during the dry season when other fodder crops tend to dry out due to lack of water. It is a good nitrogen fixer and helps improve soil fertility. The crop can last up to 4 years if properly managed.

Utilisation

Farmers should allow Lucerne to wilt before feeding it to their animals as fresh one can cause bloating. A farmer may conserve excess Lucerne as hay (whole or chopped). Lucerne gives 5 to 6 tonnes of dry matter per hectare per year and 25-30 % crude protein. ■

Fodder grasses

December 07: Napier grass

January 08: Boma grass

February 08: Lucerne

March 08: Kikuyu grass

Know banana diseases and control them

Using clean material and planting disease-resistant varieties can help control most of the banana diseases.

Michael Waweru

Banana diseases are on the increase and farmers need to take preventive measures to control them. The practice of sharing planting material is mainly to blame for the spread of diseases from one area to another. Lack of information on the diseases is yet another problem because most farmers do not take preventive measures to contain the diseases. The following are the most common diseases responsible for declining production in most of the banana producing areas:

Panama diseases (fusarium wilt)

Panama disease, also known as Fusarium wilt of banana, is caused by the fungus *Fusarium oxysporum* f.sp. cubense which attacks the pseudostem and corms of susceptible cultivars. The fact that the pathogen remains in the soil for up to 30 years after the soil is infested makes the Panama disease one of the most devastating banana diseases. The pathogen occurs in three races (Race 1, 2 and 4). Race 4 is one of the most dreaded because Cavendish bananas, that are resistant to other races succumb to it. The most susceptible cultivars are Gros Michel (Kampala), Apple banana (sukari ndizi), Mararu, Bluggoe (Bokoboko) and Psian Awak. Tolerant varieties in Kenya include Kiganda and the Cavendish group, e.g Nyoro. It is a soil-bourne disease.

Symptoms & effects

- Yellowing of leaves, beginning along the margins and advancing towards the midribs.
- Yellowing progresses from older to younger leaves as the plant dries up.



Panama disease: branches hang from the stem

- Leaf petioles turn brown and bend or become twisted (buckle).
- Brown spots of various shapes and sizes appear on the yellow leaves.
- Pseudostem frequently split longitudinally just above the soil level.
- Outer leaf sheaths may separate from the pseudostem and collapse.
- Diseased rhizomes and pseudostems release offensive smell due to rot caused by secondary pathogens
- Discoloration of the vascular tissue (red)

Control

- Cut off the affected part of the plant and burn them.
- Reduce movement of infested soil from the area around the plant, use soil conservation methods.
- Treat the banana corm (root base) with hot water; this reduces the disease by 20 %.
- Sterilize garden tools by placing them over fire flames to reduce spread of the disease.
- Plant disease-tolerant varieties, e.g Cavendish.

Black Sigatoka

Black Sigatoka (black leaf streak disease) is one of the most devastating leaf spot diseases in the world. It is a major problem in Western Kenya causing a yield loss of up to 50%. The leaf spot disease Black Sigatoka is caused by the fungus *Mycosphaerella fijiensis*. It is spread by spores carried in the wind. Black Sigatoka spores can infect all the banana plant including leaves, suckers used for planting as well as leaf litter. It is more damaging and difficult to control than the related yellow Sigatoka disease.

Symptoms & effects

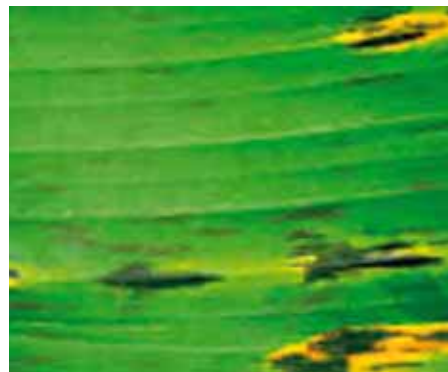
- Young leaves are mainly infected.
- Initial symptoms are thin black streaks (1-2 mm) on the underside of the leaves which enlarge to 5-10 mm with no distinct border.
- The streaks form black leaf spots that later merge to kill the entire leaf.
- Premature ripening of the banana bunches.

Yellow sigatoka

This is also a leaf spot disease caused by *mycosphaerella musicola*. It resembles black sigatoka but yellow borders surround the streaks..

Symptoms & effects

- Initial symptoms are pale yellow streaks on the upper side of the leaf surface that enlarge to form dead



Early signs of black sigatoka

areas with yellow holes and grey centre.

- The disease resembles Black Sigatoka in every other aspect.

Control of black and yellow sigatoka

Black and yellow Sigatoka diseases are very difficult to differentiate and may even occur together on the same plant.

- The use of clean planting materials significantly reduces the spread.
- Remove affected leaves and burn them.
- Create adequate spacing of plants.
- Open up the canopy by pruning since sunlight discourages the germination of the fungus that causes Sigatoka.

Cigar-End Rot



Cigar-end rot (*verticillium theobromae*)

This is a fungal disease, which is increasingly becoming a more evident disease in Kenya especially in Kisii and Western Kenya. The Dwarf Cavendish and Gros Michel varieties are particularly susceptible.

Symptoms & effects

- The bananas appear as rot on immature fingers with an ashy appearance (spores) on fruit tips. This rot looks like the tip of smoked cigarette, hence the name.
- The rot affects a few centimetres of the banana fruit tip and becomes bigger with the fruit growth.
- The pulp develops a dry rot and becomes fibrous.

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Take great care during seed purchase

In order to save money, many farmers fall for cheap seeds on offer by middlemen – only to end up with a poor harvest.

The Organic Farmer

As the planting season approaches it is important that farmers decide on the inputs they require in order to increase their production. Chief among the inputs are seeds. Sound knowledge of the right seeds to buy is very important because low quality seeds reduce the maize yield at harvest. Variations in altitude, rainfall, type of soil and temperature require a careful selection of seeds that perform well under specific local conditions. To cater for the different regional growing conditions, different seed varieties have been developed and are available in stock. Therefore, farmers should know the type of seed that is most suitable for their geographical area before buying any seed. To know the type of seed required, it is important to seek guidance from agricultural extension centres or research institutions near them. Fortunately, some farmers know the right varieties for their areas and can provide useful advice to fellow farmers.

Seed companies confuse farmers

The main problem with the selection of seeds among farmers is the increasing number of companies that have entered the market with different varieties of maize. The aggressive marketing of new seed varieties being introduced every year makes it very difficult for farmers to select the right seed varieties. The result is that most



Seed selection determines the quality of maize.

farmers fall prey to these marketing tactics and end up buying the wrong seeds. This cheating is to blame for the decreasing maize yield and new diseases that now affect maize in many parts of the country.

Important tips for seed-buyers

Before buying seeds, farmers should consider the guidelines below to maximise yields in maize production:

- They should only buy seeds from seed stockists who are licensed to sell seeds. The farmers should insist on seeing the licence if they do not know the stockist well. Alternatively, they should buy seeds from well-known distributors in their areas. A certified seed stockist will rarely sell fake seed.

- All genuine seeds have company tags and the labels of the Kenya Plant Health Inspection Service (KEPHIS) inside the seed bags. To ensure that the seed is genuine, farmers should verify that tags and KEPHIS labels

are present when they open the seed bag.

- Each seed company has its own colour to distinguish their seeds from the rest. Farmers should be able to tell the colour of the seeds from different companies.

- Farmers should buy their seeds early enough to avoid last minute rush. They should remember that fake seeds are mainly sold around March and April every year when the popular varieties of maize seed are sold out.

- All seeds should be stored in a cool and dry place.

- Maize seed is treated with dangerous fungicides and insecticides. It should never be eaten!

A clever farmer who intends to buy a new seed variety first of all tests the quality of the seed. He isolates a small portion of land where he can plant the new variety. He should observe whether the maize is prone to lodging (falling), if the ears open early, which is responsible for decay, and if the variety gives a good yield in that particular geographical region. When the farmer is convinced of the seed quality, then they can use the seed the following year. But they should not forget that even with good quality seeds, they will only obtain good yield if the crop is well managed. Low soil fertility, late land preparation, poor weeding and even wrong seed application can markedly lower maize yield.

Beware of "Dubai seed"

Another mistake made by most farmers is the use of uncertified seed called "Dubai seed". Dubai seed is mainly sold by middlemen, who offer it to farmers, claiming that the seed is obtained from seed growers. Investigations established that most seed growers usually sell the seeds even if seed companies, which contracted them to produce the seed, reject it. The seed may be rejected because it does not meet the quality standards of the companies. When the seed is rejected, the seed producers are advised to sell it as commercial maize. But most of the growers do not do so. Instead, they sell the maize to middlemen who offer it to farmers as genuine seed. Eventually farmers bear the consequences of poor yields.

Due to lack of resources, many farmers use their commercial maize as seed with the hope that with good management, they will still obtain a good harvest. Such farmers should know that maize seed is produced in a particular way that enables it to produce more when planted. Commercial maize does not have these qualities. Therefore, it will give a very low yield when used as seed. Commercial maize is also responsible for the transfer of diseases and pests such as leaf inflammation, stalk and the larger grain borer. Some unscrupulous traders buy commercial maize, treat it with the same chemicals and packaging used by seed companies and then sell it as genuine seed. In such a case, it is very difficult for farmers to tell whether the maize seed is genuine or not. ■

Buy the seeds appropriate to your region

The following guidelines are only recommendations. There are many varieties which are not mentioned here. Farmers are advised to contact local extension staff on other suitable

varieties. An area may have totally different climatic conditions, farmers can only get information on the right variety for their locality from agricultural extension personnel.

Highland: (High altitude)

Variety: H6213 Kenya seed

Altitude: 1700-2100 metres above sea level (m asl)

Rainfall: High Suitable growing areas:

Trans Nzoia, Uasin Gishu, tea growing areas of Kiambu, Nyeri, Meru, Nyandarua

Yield: 52 bags/acre

Qualities: The variety does not fall in windy conditions, it is resistant to cob rot, rust, Grey leaf spot disease, stem and leaf blight.

Variety: H614 D KARI

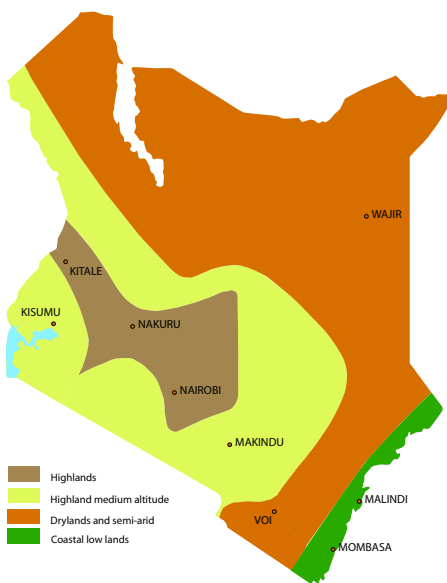
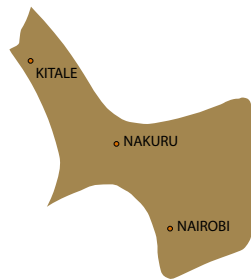
Altitude: 1500 – 2300 m asl

Rainfall: high

Suitable growing areas: Trans Nzoia, Uasin Gishu, West Pokot, Keiyo, Marakwet, Laikipia, Nakuru

Yield: 38 bags/acre

Qualities: Most popular variety in the country, can withstand sudden climatic changes and does well even under poor management.



Legend:
 Highlands
 Highland medium altitude
 Drylands and semi-arid
 Coastal lowlands

Variety: H6210 Kenya Seed

Altitude: 1700 – 2100 m asl

Rainfall: 1000 – 2000 mm

Suitable growing areas: Trans-Nzoia, Uasin Gishu, West Pokot, Keiyo Marakwet, Laikipia, Nakuru.

Yield: 50 bags / acre

Qualities: Can withstand strong winds, it is resistant to cob rot, rust, Grey leaf spot, stem and leaf blight.

Drylands

Variety: DH01

Altitude: 800 - 1000 m asl

Rainfall: Low

Maturity:

100-120

days

Suitable growing areas: Kitui,

Makueni, and

Baringo areas.

Yield: 16 bags/acre

Qualities: It is resistant to blight, common rust and ear rot. It can remain green for a long time.



Variety: KH 600-14 E Kenya Seed

Altitude: 1800 – 2500 m asl

Rainfall: 1000 – 2000 mm

Suitable growing areas: Slopes of Mount Elgon, Trans-Nzoia, West Pokot, Uasin, Nandi, greater Kericho, Nyeri, Laikipia, lower Nyandarua

Yield: 38 – 48 bags/acre

Qualities: The variety has good rust and blight resistance, it can also withstand Grey leaf spot disease.

Highland (Medium altitude)

Variety: H515 Kenya Seed

Altitude: 1200 – 1600 m asl

Rainfall: not less than 800 mm/year

Maturity: 4 – 5 months

Growing areas: Busia, Kisumu, Siaya, Embu, Muranga, Nyeri, Nakuru, lower parts of Kisii

Yield: average 26 bags/acre

Qualities: More resistant to leaf blight, leaf rust, Grey leaf spot (GLS) and does not fall.

Variety: H 516 Kenya Seed

Altitude: 1200 – 1600 m asl

Rainfall: not less than 800 mm/year

Maturity: 3 – 4 months

Suitable growing areas: Busia, Siaya, Embu, Muranga, Nyeri, Nakuru, Lower parts of Kisii.

Yield: average 28 bags/acre

Variety: H 512 KARI

Altitude: 1000 – 1800 m asl

Rainfall: moderate

Maturity: 4-5 months

Suitable growing areas: Busia, Siaya, Embu, Muranga, Nyeri, Nakuru, Lower parts of Kisii

Yield: 18 bags / acre

Quality:

Variety: H511 Kenya Seed

Altitude: 900 – 1500 m asl

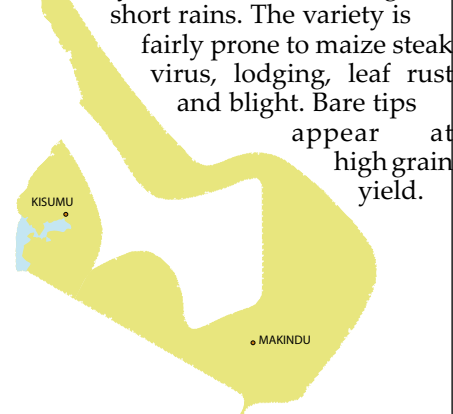
Rainfall: Long and short rains

Maturity: 4 – 5 months

Suitable growing areas: Coffee zones of Central and Eastern province, Lake Victoria region during the short rains

Yield: 23 bags/acre

Qualities: Can be grown twice a year in areas with long and short rains. The variety is fairly prone to maize streak virus, lodging, leaf rust and blight. Bare tips appear at high grain yield.



Lowlands (Coastal)

Variety: PH1 KARI

Altitude: 0 – 1200 m asl

Rainfall: at least 400mm/year

Suitable growing areas: Kilifi, Mombasa, Kwale, irrigated lowlands of Tana River districts

Maturity: 3 – 4 months

Yield: 14 bags/acre

Qualities: It has better husk cover and can be intercropped.

Variety: PH4 (Pwani Hybrid 4), KARI

Altitude: 1- 1200 m asl

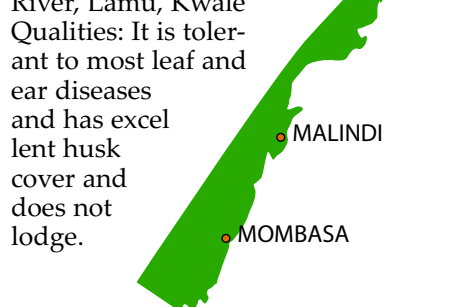
Maturity: 3 – 4 months

Yield: 16 bags/acre

Suitable growing areas:

Kilifi, Mombasa, Tana River, Lamu, Kwale

Qualities: It is tolerant to most leaf and ear diseases and has excellent husk cover and does not lodge.



Cleanliness is important when handling milk

Dairy milk is an important source of income for small scale farmers. But they have to respect cleanliness and hygiene as top-priorities.

Recent studies (done by ILRI in 2007) on the dairy sector in Kenya indicate that 80 percent of all the milk in the country is traded through the informal sector. Only 20 percent is sold to the large processors. This study has thrown new light on employment statistics as it shows that each litre of milk produced and traded informally generates an income for 10 Kenyans, whereas the same in the formal sector generates an income for only 2 Kenyans. With respect to employment creation in the country, the push towards all milk being channelled through the processors is now on the back burner.

A milk giant

With the liberalisation of the dairy sector and the increasing number of Kenyans getting into dairy farming, Kenya is now recognised as the second largest milk giant producer in Africa, a continent with huge milk exporting opportunities both within the COMESA region as well as internationally. However, recently, shipment of milk to both Zambia and the Democratic Republic of Congo was rejected due to contamination. This has resulted in closer observation and testing of milk locally, within the formal as well as informal sector. The test results conducted on over 2000 samples taken from a wide range of outlets, kiosks and even supermarkets are quite shocking. Contamination of milk with hydrogen peroxide and river water is common. Bacterial contamination including *salmonella*, *E.Coli* (*Escherichia coli*) which are a sign of unhygienic situations), *Streptococcus* and *Aflatoxins* were detected and shockingly even evident in branded pasteurised milk.

How can this happen in a system that we believe is monitored by both the Kenya Dairy Board and the Kenya

Bureau of Standards (KEBS)? The problem unfortunately is that the industry has grown faster than the regulatory frame work can manage. We now have hundreds of new dairy farmers without experience in milk hygiene. There are also hundreds of old farmers who are neglecting standards of hygiene and no one is policing the system even at the formal sector.

Take preventive measures

Milk is one of the few products with a no-recall chance once it is sold. It is highly perishable and has a short shelf-life. The tests taken on samples of milk require a few days before results are available. By this time the milk has already been sold and consumed. Therefore it is only by taking preventive measures within dairies that we can ensure the safety of our milk.

Formal processors are expected to adhere to milk standards of quality and hygiene recommended by KEBS. They are expected to test their milk regularly. This is to ensure that they can trouble shoot effectively and efficiently if contamination is detected. This is not expected or affordable in the informal sector. There is however, a serious drive to ensure milk producers all over the country have access to information on dairy hygiene, to ensure safe milk and other dairy products.

Milk straight from a healthy cow



Wash the udder before milking

carries a bacterial load of 8 parts per ml. This in itself is not a problem at all. The bacteria, some of which are good and others harmful, can however double every 20 minutes given the right conditions. If you do the calculation, you will see that within 6 hours of milk sitting at ambient temperature, the bacterial load can reach 2,000,000 parts per ml. It is thus extremely important that raw milk from healthy cows is consumed as soon as possible. If milk must be kept, the temperature must be dropped as soon as possible and maintained at a cool temperature of 4 to 7 degrees centigrade. Fresh raw milk that is cooled to these temperatures has a 3-4 day shelf life.

Most contamination occurs after milking! Bacteria are picked up from dirty hands, contaminated dirty milk

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What you should observe

1. Have hot water available when milking;
2. Wash the cow's udder with warm water
3. Wash the milk bucket with hot water before commencing milking;
4. Wash your hands with hot soapy water before milking;
5. Ensure that the cow's tail and legs do not contaminate the milk;
6. Remove the milking bucket from splashes if the cow urinates or defecates during milking; the bacteria *E. coli* (*Escherichia coli*) for instance, which are rarely harmful, but can cause diarrhoea, are transmitted by manure;
7. Use a good milking salve during milking;
8. Check the udder for mastitis; if the udder is hot or the milk clotted. In such a case, discard the milk and treat the cow. If milking more than one animal clean the bucket with very hot soapy water and rinse it thoroughly;
9. Ensure that all milking utensils are cleaned with hot water before and after milking;
10. Sieve milk through sterilised gauze into milk churn or container;
11. Drop the temperature as soon as possible after milking by refrigeration, or raise temperature to pasteurisation and then drop to 4-7 degrees centigrade.
12. Respect your animal and the consumers of your milk.

What you should avoid

- Do not smoke while milking or in between milking.
- Do not leave milk in churns or *mitun-gis* in the hot sun.
- Do not use unboiled water to clean milking utensils.
- Do not add contaminants like hydrogen peroxide to extend milk's shelf life.
- Do not add water to milk.

Su Kahumbu answers your questions



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...keep milk clean

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containers, dirty milking machines, dirty water (water from shallow wells can be contaminated). Hygiene during milking is of utmost importance.

Aflatoxin ...

Be careful, contamination after pasteurisation or boiling can be more harmful to ones health as the good bacteria which help to fend off the bad ones are destroyed during heating. Aflatoxin traces in milk often come from the animal feed. It is important to make sure your animal feed is stored properly or/and purchased from a reputable dealer to ensure that it is aflatoxin-free.

... and dangerous hormones

While on the topic of milk, it is also important to mention at this stage the use of Bovine Growth Hormones in the dairy industry in Kenya. These hormones were previously used in developed countries to increase milk production. They are however now banned in most countries as they have been passed through the food chain into our own bodies and are being blamed for obesity and other related problems. These hormones are banned in organic farming. *Please report any known use of Bovine Growth Hormones to consumerwatchkenya@gmail.com*

...banana diseases

continued from page 3

- The rot induces immature ripening. Control
- Remove dried floral parts from the fruit tips 8-11 days after bunch emergence. Pruning helps to open up the canopy.
- Cover the banana with a polythene bag (6/100) thickness before fruits emerge.

Bunchy top diseases

The disease is caused by a virus which is disseminated by banana aphids (*pentatonia nigronervosa*). The long-term dispersal however is primarily through planting of infected materials.

Symptoms & effects

- Dark green streaks in the petiole and leaf veins are the first symptoms.
- Leaves of young suckers become chlorotic and curled.
- Infected plants are stunted in growth.

Control

- Seedlings should be disease-free.
- Infested plants should be uprooted and burnt.



farmers forum

An informative magazine

I kindly wish to ask you to honour us by sending to us monthly copies of your highly informative and educative magazine. The newspaper exhaustively tackles areas that we are yearning to be literate, that is organic farming and sustainable development in both crop horticulture and animal husbandry. In particular, please include the edition which featured mushroom growing – a field in which we are currently undergoing training. We stand to benefit enormously from *The Organic Farmer*. Thank you. Stanley K Muhia, P.O Box 483, Ol Kalou

Good work for farmers

I received a copy of *The Organic Farmer* from a friend. I enjoyed the contents and I want to encourage our church members to practise sustainable agriculture especially on poultry and dairy goat farming. Please include us in your mailing list. We would also request you to send us past editions. Thank you for the good work you are doing for the country. Johnson K Wachira

We want magazine

We are a group of farmers from Nandi South. We are very much interested in organic farming. We hereby submit our request for monthly supply of *The Organic Farmer* magazine, we shall be grateful if this is done. Wilson K Mosbei, Mosombor Farmers, P.O Box 39, Kapcheno

Can I get monthly copies?

I have come across your magazine and it is very useful to farmers so I am asking if I can get monthly issues. I am a farmer in Ngong. Thank you. Kimani Thiongo, P.O Box 267, Ngong

I need past issues

Thank you very much for *The Organic Farmer* magazine and for the enormous research carried out in organic farming. Having read several copies of the magazine, I have discovered my failure in neglecting farming, especially organic farming, which has proved to be of good potential in food production as well as money generating enterprise. No doubt I have missed a lot from past issues. I kindly request for issues Nr 1 to Nr 7 and Nr 14. I started practicing organic farming in the year 2006 with tips from *The Organic Farmer* magazine. I am a young farmer determined to introduce it in Bagaria area in Naishi



A great loss

It is with deep sorrow that we inform you of the death of Dr. Annalee Mengech, the technical editor of *The Organic Farmer*. She passed away after a short illness. Since the launch of TOF, Annalee went through every issue of the magazine, correcting scientific errors and language mistakes, which might have slipped in during the production process. She was resourceful and had vast knowledge of farming, livestock diseases as well as plants. She provided useful ideas, tips and advice that helped shape the newspaper to what it is today. Her patience, kindness and willingness whenever we sought her assistance, often humbled us. Annalee will be missed by all who knew her. We join her family in celebrating her illustrious life.

The Organic Farmer team

Njoro. Thank you John Karanja, P.O Box 42730 00100, Nairobi

We need it too

I hereby request for *The Organic Farmer* magazine. I have other farmers who are also interested in reading it. So kindly be sending me 5 copies.

Samwel Moses Nyangau, P.O Box 461, Nyamira

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

Tree tomato has good income

"Can I make additional income with tomato trees?" asks Paul Njoroge from Nyeri. Farmer Koech of Olenguruone Division, Molo district (Tel.0721 167 915) also wants to get more information on tree tomato production.

Yes, you can increase your income, as many farmers' groups in Rwanda have done; they have started planting tomato trees in plantations. They export the fruits and make good money. Tomato tree (also known as tamarillo, mountain tomato or guava tamarillo) is generally believed to be native to Latin America. It is cultivated and naturalized in many Latin American countries and widely grown in New Zealand as a commercial crop.

Tree tomato is a small, attractive, half-woody, evergreen or partially deciduous, shrub or small tree. It is brittle and shallow-rooted, growing to a height of 3 to 6 m. It is small enough to fit into many parts of the shamba as long as the site is well-drained. They grow best in full sun except in hot, dry situations, where partial shade may be needed.

The tree tomato cannot tolerate tightly compacted soil with low oxygen content. Tamarillos require a fertile, light soil that is rich in organic matter. Perfect drainage is also necessary. Water standing for even a few days may kill the plant. The plant cannot tolerate prolonged drought and must have ample water during dry periods. A mulch is very beneficial in conserving moisture at such times. Protection from wind is necessary as the tree is shallow-rooted and is easily blown over. It is also brittle and its branches are easily broken by strong winds, especially when laden with fruits.

Tips for tree-tomato farmers

Propagation: Seeds or cuttings may be used for propagation. Seeds produce a high-branched, erect tree, ideal for sheltered locations. Cuttings develop into a shorter, bushy plant with low-lying branches, suitable for exposed, windy sites. Seedling trees are pruned back the first year after planting to a height of 3 or 4 ft (0.9-1.2 m) to encourage branching. In plantations, tomato trees reach a height of not more than 1.50 m. Annual pruning thereafter is advisable to eliminate



branches that have already fruited. Induce ample new shoots close to the main branches, inasmuch as fruit is produced on new growth. Otherwise, the tree will develop a broad top with fruits only on the outer edges. Wide-spreading branches are subject to wind damage.

Pest and Diseases: The tree tomato is generally regarded as fairly pest-resistant, although it is occasionally attacked by green aphids. Fruit flies will also attack the fruit in areas where that is a problem. Nematodes are also a potential problem. The principal disease is powdery mildew, which may cause serious falling off of the leaves if not controlled.

Powdery mildew is characterized by a dusty-white to gray coating and talcum powder-like growth commonly infecting plant's leaves. It begins as circular, powdery-white spots that turn yellow-brown and finally black. In most cases, the fungal growth can be partially removed by rubbing the leaves. Remove infected plant materials. Prune overcrowded plants to increase air circulation, reduce the relative humidity, reduce infection, and increase light penetration. Do not place infected plant materials on the compost pile. Powdery mildew can be controlled with neem seed extract, papaya extract or baking soda.

Harvest: Tree tomato does not ripen simultaneously and several pickings are necessary. Fruits are ready



Market Place



Training: Baraka Agricultural College offers various courses on sustainable agriculture. Dairy farming – February 3 – 9, Dairy goat farming- April 13 - 19, Bee product processing April 20 - 26, Poultry production May 4-10 Mushroom growing June 8- 14. Farmers interested in pursuing these courses can contact the college at the following address: The Principal, Baraka Agricultural College, P.O.Box 52 Molo, Tel. 051-721 091, 0725 777 421 email: baraka@sustainableag.org <http://www.sustainableag.org>. The fees charged vary between Ksh 6000 and Ksh 8000, covering tuition, food and accommodations. The certificate course in agriculture takes 60 weeks and the diploma course 57 weeks. Farmers can contact the institution for details.

Fruit Seedlings: We have more than 10,000 fruit seedlings for various fruits such as grafted mangoes, avocado, budded citrus and hybrid pawpaw. We also have refined honey. If interested please contact us at the following address: Peter Mbogo, KADI, P.O.Box 60100 Tel. 068-214 72/27, 0721 608 644, 0733 566 059.

Mushrooms for sale: I have oyster and ganoderma mushrooms for sale. Interested buyers can call Tel. 0720 214 482

Rabbits needed: I am interested in buying grade rabbits, if you have any for sale please call Tel. 0724 717 592

Do you have products for Export? A marketing consultant from Israel is looking for farmers or institutions with certified organic products for sale in Israel. If you have any such products, please contact David Goldberg on Tel. 0721 768 618.

for harvest when they develop the yellow or red color. Ripe tree tomato may be merely cut in half lengthwise, sprinkled with sugar (and chilled if you like) and served for eating by scooping out the flesh and pulp. The fruit should not be cut on a wooden or other permeable surface, as the juice will make an indelible stain. For other purposes, the skin must be removed, which is easily done by pouring boiling water over the fruit and letting it stand for 4 minutes before peeling. ■