

# The Organic Farmer

The magazine for sustainable agriculture in East Africa



Nr. 76 September, 2011



## Fleckvieh dairy cow attracts farmers

TOF - Dairy farmers are showing an increasing interest in a new cattle breed, the Fleckvieh. The breed is fairly resistant to common animal diseases such as East Coast Fever (ECF) and even mastitis. The breed can give more milk with the same amount of feed that is given to other breeds. If a Friesian-Holstein dairy cow is given 60 kg of feed, the amount of milk it will produce is equal to what a Fleckvieh cow will produce with only 45 kg of same type of feed. *Page 3*

All about credit

Page 4 & 5



## The shame of stolen relief food

Kenyans are sparing the little they have to help their fellow citizens in Northern parts of the country who are starving. The *Kenyans4kenya* food campaign has done extremely well, raising half a billion shillings so far.

But reports say that a big part of the Government's relief food is being diverted and sold. This is a true sign of the entrenched corruption within the provincial administration. The greed of a few is causing more suffering. What a disgrace!

Our trees Our future



Trees with medicinal properties

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## Debate on GMOs

TOF - Our magazine has been receiving quite a number of questions from farmers on Genetically Modified Organisms (GMOs). Some farmers express their hopes that GMO crops might boost their production and in this way their income. Others fear that GMOs will destroy traditional crops and might become another burden for small-scale farmers. In short, the debate about GMO is causing a lot of confusion. GMOs are not allowed in organic farming since the artificial transfer of genes is not a natural process, and because risks to health and environment can still not be ruled out completely.

But one thing is for sure: GMOs are not the silver bullet for food scarcity and hunger, as the supporters of GMO at the moment pretend in Kenya. The world produces more than enough food. Hunger is caused by unfair distribution and poverty. The hungry people in Northern Kenya or other famine stricken regions in East Africa just do not have the cash to buy food. Instead of pushing GMOs as the solution, it would make much more sense to strengthen the small-scale farmers in their effort to produce food for the country: Smallholders produce 70 percent of the world's food. *Page 2*

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## Dear farmers,

*Credit is the lifeblood of any enterprise; be it agricultural or otherwise. Even in the most developed economies in the world, farmers are given access to credit to enable them achieve increased yields. With such facilities, farmers can buy agricultural inputs such as seed, fertilizers and prepare their land on time, pay for labour, transport and even market their produce.*

*Although quite a number of credit institutions exist in every corner of the country, access to credit remains a big problem to farmers. Even where such opportunities exist, farmers do not take advantage of the facilities. This is a big drawback to the development of agriculture in the country. Without credit, there is no way farmers can hope to improve their lot. It also means that they cannot produce enough food to feed our people.*

*Farmers may fail to take advantage of credit facilities for a number of reasons. One of these is the fear of failure. Agriculture has many risks such as crop failure due to poor or excess rains or even the poor prices offered for agricultural produce. They may also fear losing their land if they had used their title deeds as security. But this is no excuse because several insurance products have been introduced to cover losses such as weather damage.*

*Some of the commercial banks may also discourage farmers from taking loans due to their high interest rates and stringent conditions attached to them. However many micro-credit institutions have been set up in recent years specifically to offer soft loans to people in rural areas, majority of whom are farmers.*

*But perhaps the main reason for poor utilisation of credit facilities remains the general attitude of many farmers towards agriculture as just a source of food. Very few people take agriculture as a business. There is need for farmers to change this attitude if they hope to get any meaningful benefit from this sector in future.*

*As long as they are not willing to change, all talk about transforming agriculture and rural development will remain a pipe dream.*

# Fear, ignorance dominate the GMO debate

*The import of GMO maize for animal feed production has sparked a big, emotional debate.*

**Theresa Székely**

GMO crops are on the rise worldwide. More than 25 countries cultivate GMO crops, the main producers being the USA, Brazil, Argentina, India, Canada, China, Paraguay and South Africa. Since 1st July 2011, the import of GMO crops into Kenya has been allowed following the enactment of the Biosafety Bill 2009. After South Africa, Egypt and Burkina Faso, Kenya is the 4th African country to allow GMO-crops in the country. This has sparked another debate in Kenya, and even TOF has received so many questions on this issue. Many people do not understand what GMOs are and what to believe following the heated exchange by proponents and opponents of GMOs. Here we try to explain some facts to help farmers understand the issue better.

## More than 30'000 genes

All organisms are composed of cells. In the case of plants and animals, billions of cells form their bodies. Cells are so small that they can only be seen under a microscope. Each cell contains a nucleus that contains all the genetic information of the organism, the genes.



*More than 89 per cent of all the maize produced in the US is genetically modified.*

Genes determine the properties of an organism. They determine the species, the way it will grow and develop, the shape and size of the body and of its different organs, the sex, the colour of the skin or eyes, etc. Humans have a total of 30'000 different genes. Plants can have even more genes depending on their species.

Genetic engineering (biotechnology) uses very specific technologies to transfer genes from one species to another species. One or several genes are added artificially to the natural genetic material of a plant. These genes

are usually extracted from the genetic material of bacteria or of other plants. If foreign genes have been inserted successfully into the natural genetic material of a cell, and if this cell can then be grown to a healthy plant, the new genes will give this plant additional properties. The genes that have been used most frequently to create GMO crops make the crops more resistant against herbicides, insects or viruses.

## Genes that are used in GMO crops

- Bt crops: In the case of Bt-crops (Bt = *Bacillus thuringiensis*), the additional

*continued on page 6*

## What does GMO mean?

GMO is the abbreviation for 'Genetically Modified Organisms'. We say a crop is genetically modified when a gene with a particular characteristic from plant A is transferred into a different plant B to make it acquire some characteristics from plant A. This process is called genetic engineering. Cross pollination on the other hand is the transfer of pollen from one plant to another plant of the same or related species. Crossbreeding in animals can take place, for example when another breed such as a Friesian or Ayrshire is used to serve a Holstein dairy cow.

### Pro GMO claims

Up to now, no negative implications on human health have been observed

GMO crops help increase food production.

Studies show that GMO crops increase yields especially in developing countries.

Kenya's maize production could double under GMO maize

Bt-crops protect themselves against pests, and fewer applications of pesticides that are harmful to body and environment are unnecessary.

Kenya should start producing GMO crops to improve agricultural production.

### Counter GMO claims

Negative implications on health may take decades to unravel. Allergic reactions have been observed.

GMOs do not guarantee increased production, crop failures are possible as with any other crop.

Studies show that GMOs do not increase yields substantially. Other agricultural methods make a much greater contribution to yield increases.

Maize production could double without GMO through improved management (e.g. good seeds, sufficient fertilizers, crop protection, etc.)

Bt toxin has been found in the blood of women and their babies. How can we be sure this is harmless?

Interest comes from companies that are looking for market and profit in Africa, not from farmers.

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# A cow with high milk production

*Fleckvieh is a hardy breed that can resist diseases, eats less and produces more high quality milk.*

**Peter Kamau**

Kenyan dairy farmers are used to the common exotic breeds of dairy cows such as the Holstein-Friesians, Ayrshire, Guernsey or even Jerseys. For two years now, a new cattle breed has attracted the attention of Kenyan dairy farmers: Fleckvieh is a high yielding, dual-purpose cow that can be used for both dairy and beef production. Hundreds of Kenyan farmers who have discovered the qualities of this breed have introduced them into their herds. So far, more than 20,000 farmers in Kenya have adopted the breed.

## Years of selective breeding

Fleckvieh (or Miling Simmental) is the second largest dairy breed in the world – and one of Europe's oldest. At the moment, there are an estimated 42 million cattle with Fleckvieh bloodlines worldwide. Developed in the highlands of Germany, Switzerland and Austria, the breed became popular in most parts of the world because of their adaptability to harsh climatic conditions.

Through many years of selective breeding, Fleckvieh has acquired some of the characteristics that dairy farmers are looking for. The Fleckvieh breed was introduced by Fleckvieh Genetics East Africa (FGEA) from South Africa in 2009.

The company gets most of its semen from top bulls in upper Bavarian region in Germany. Other sources of the Fleckvieh genetics are Austria, Czech republic, Australia. Farmers can buy semen from these top bulls from the company and cross with their dairy cows. This is the cheapest and easiest way to reduce the cost of buying pure Fleckvieh breed for small scale farmers. Fleckvieh semen goes for between Ksh 800 to Ksh 400 depending on the sire (bull) a farmer chooses.

## Active genetic potential

"The Fleckvieh cow is durable, hardy and easy to handle even within a small farm," says Dr. Anthony Gichohi from Fleckvieh Genetics (EA). "They are able to move easily even in the most difficult terrain. A mature Fleckvieh has good strength and body development. A mature cow weighs about 650-800 kilograms. The breed has a very large and active genetic potential. We believe it is going to be one of the major breeds in the country once farmers discover its quality," he says.

## Nutritious milk and good meat

Studies show that every 1 kg of milk from a Fleckvieh cow contains 4.2% fat and 3.7% protein in addition the milk



is also rich in other micronutrients and Omega 3 fats – which are vital for a healthy body.

According to Dr Wanjohi, Fleckvieh bulls are fast growing and gain muscle at a rate of 1.5 kilogrammes per day for the first 200 days when cross-bred with other breeds, the farmer is assured of high quality of milk and beef. Under intensive fattening conditions, young bulls reach a daily weight gain of more than 1300 grams. In the first 6 months after birth, a bull can attain up to 300 kg with proper feeding and management.

## Disease resistance

Compared with other breeds, Fleckvieh owners will not have to incur huge veterinary bills – due to the breed's ability to withstand some of the common livestock diseases, mastitis for instance. This is an inflammation of the udder that cuts down milk production. The infection is caused by somatic cells (dead cells) from the bloodstreams that get into the milk in the udder. Fleckvieh cow milk has lower numbers of somatic cells compared to other dairy breeds, meaning that Fleckvieh is less prone to mastitis; there is another advantage: Less somatic cells means: The milk lasts longer without refrigeration.

And since Fleckvieh has a very thick skin, it is more resistant against diseases transmitted by ticks and tsetse flies- the proboscis of these vectors cannot penetrate the thick Fleckvieh skin.

*For Semen from top Fleckvieh bulls contact: Fleckvieh Genetics (EA) Ltd. Mobile 0721 095 555, 0734 095 555, 0725 665 885.*

## An easy to handle cow

Farmers are usually more interested in the amount of milk a cow can produce. But what goes for Holstein-Friesian and other breeds, can as well be said of Fleckvieh: The amount of milk a cow produces depends directly on the feed it is given and the way it is kept. With sufficient and nutritious feed, a healthy cow can produce a lot of milk; if the feed is poor, the milk yield will be less. Farmers sometimes forget the relationship between the feed given and the milk output.

What makes Fleckvieh different from other breeds (Holstein Friesian, Ayrshire etc)? Fleckvieh cattle are economically productive: The breed has a more efficient feed conversion rate compared to other dairy cattle. Studies show that the breed can give more milk with the same amount of

feed that is given to other breeds. For example, if a Friesian-Holstein dairy cow is given 60 kg of feed, the amount of milk it will produce is equal to what a Fleckvieh cow will produce with only 45 kg of same type of feed.

With good management, Fleckvieh dairy cows have been proved to produce between 25-30 litres of milk per day. On second calving, it produces 30-35 litres, increasing this to between 30-40 litres after the third calving. The breed has a consistent milk production throughout the lactation period – this a big plus compared to other breeds. It produces milk steadily for 305 days a year without any decline. The breed has been known to produce up to 10,000 litres of milk in every lactation (milking period) with good management. **TOF**

# SACCOs are a cheap source of credit

*Apart from easy repayment terms, SACCOs have flexible conditions for farmers to obtain credit.*

**Peter Kamau**

Getting loans from commercial banks in Kenya is not easy. Apart from the high interest rates charged by banks, there are many conditions attached to the loans, which the majority of their customers cannot meet. About two decades ago, most of the commercial banks raised the minimum amount of money a customer could save with them to be allowed to operate an account. The move forced many small depositors to close their accounts and take their money to small institutions such as the Post Bank.

## 5000 SACCOs

However, the need to offer banking services to a large section of the small depositors has seen the emergence of Savings and Credit Cooperative Societies (SACCOs) in all sectors of the Kenyan economy. In the agricultural sector many SACCOs have been registered to serve farmers in coffee, tea, cotton, dairy farming and even sugarcane growing areas. Today, there are more than 5000 SACCOs in Kenya with a total of Ksh 220 billion in members' savings, 80 per cent of which is already circulating among members as loans.

SACCOs have become one of the cheapest source of credit: People engaged in common activities can pool their earnings into savings and then lend out the money to members who need loans to meet some of their basic needs such as paying school fees, buying agricultural inputs, building or buying a new house or even land. Credit facilities from SACCOs have helped low-income earners to uplift their livelihoods. Many people are setting up businesses due to easy and flexible loan conditions given by SACCOs.

## Favourable conditions

To qualify for a loan, all a new member requires is to deposit their savings for six months. After this period, a member can apply for up to three times the amount of money that they have saved in the SACCO. Those applying for loans have to get at least three members of the SACCO to sign the application forms as guarantors, to secure the loan in case of default.

The advantage of SACCOs is that all members – including the management of the SACCO – know each other very well, making it easy to assess a member's ability to repay the loan.

## Declining interest rate

Another advantage is the interest rate charged on loans. Whereas all banks



charge high interest rates, sometimes as high as 20 per cent or more, SACCOs are moderate. Most SACCOs charge an interest rate of between 12 and 15 per cent. The interest rate is charged on a declining balance.

Let us give an example: Farmer Joshua takes a loan of Ksh 12,000 from a SACCO. It has to be repaid at the rate of Ksh 1,000 per month. For the first month, the interest rate will be 12 per cent of Ksh 12,000. For the second month, the interest rate will be 12 per cent of the remaining Ksh 11,000, for the third month Joshua will be required to pay 12 per cent of Ksh 10,000, and so on.

Commercial banks demand the repayment including the interest which is pegged on the principal amount borrowed. If farmer Joshua had taken Ksh 12,000 at the rate of 15 per cent per month from a commercial bank, he has to pay Ksh 1000 plus 15 per cent interest of Ksh 12,000 every month, until he clears the entire amount. Besides, interest rates in banks are not fixed. They keep on changing: If the interest rate went up, Joshua would be required to pay more.

## SACCO savings secured

In SACCOs, the savings and money of members given out in form of loans is insured through the Cooperative Insurance Service Company (CIC). The SACCOs are also well regulated by the Ministry of Cooperative Development to ensure members' savings are not lost through mismanagement. All SACCOs undergo an annual audit to evaluate their financial performance and to maintain prudent management.

The Cooperative Bank of Kenya is owned by the co-operative movement in the country. SACCOs can get bridging loans from the bank for lending to their members.

Recently, the government passed the SACCOs societies Act, under which a Deposit Guarantee Fund (DGF) was established. The fund will be used to cushion SACCO members from loss in case their SACCO collapses.

## Use your loan wisely

Many people, including farmers, do not know how to use loan facilities to improve their production and income and to have a good loan repayment plan.

Apart from the SACCOs, there are many institutions offering various forms of credit in almost every region in the country (see table on page 5 with a collection of institutions). For small-scale farmers and those running small businesses, there are micro-finance institutions that have been set up specifically for this category of customers.

But before taking credit from any of these institutions, farmers need to know the following:

- Ask about the history of the institution from those who have taken loans from it before. You may discover some issues that are not written in the promotional leaflets and which can affect your loan repayment.
- Compare the institutions and find out the one with the best terms before applying for the loans.
- Look for guarantors. These must be people who know you well and who you can rely on.
- Before applying for the loan, ask yourself if you really need the loan.
- Make a serious evaluation of the type of project you have in mind. Will it enable you to repay the loan?
- Do you have fallback position of repaying the loan in case the business or crop you want to grow fails?

These questions are very important, because many people who take loans end up diverting the money to other uses – causing themselves and families a lot of problems. Proper planning and financial discipline are very important ingredients for any successful venture.

Institution	Family Bank: Vijana boost	Family Bank: Biashara boost	Family: Secured loan	Faulu: Ufugaji Bora (live-stock)	Faulu: Nafaka
Target group			Individuals	Individual/Group for live-stock	For farming activities
Condition individuals	<ul style="list-style-type: none"> <li>creditor must be 18-35 years old.</li> <li>Copy of ID and PIN</li> <li>Account with Family bank.</li> <li>Existing business running at least 3 months.</li> <li>Guarantor</li> <li>Be willing to be trained</li> </ul>	<ul style="list-style-type: none"> <li>Existing business running</li> <li>Account with family bank</li> <li>Copy of ID and PIN</li> <li>Guarantor</li> </ul>	-	<ul style="list-style-type: none"> <li>Have an account</li> <li>Have saved with faulu</li> <li>The loan security fund should have 20% of what you want as loan</li> <li>Fixed asset should be of a higher value than the loan</li> </ul>	<ul style="list-style-type: none"> <li>Have an account</li> <li>One has to save with Faulu</li> <li>Loan not higher than 20% of the savings</li> </ul>
Condition groups	<ul style="list-style-type: none"> <li>70 % of the members must fall under the age bracket (18-35 years)</li> </ul>			<ul style="list-style-type: none"> <li>5 to 15 persons</li> <li>Have a loan security fund (20% of loan)</li> <li>Fixed asset should be of a higher value than the loan</li> </ul>	<ul style="list-style-type: none"> <li>5 to 15 members</li> <li>Have a loan security fund, (20% of loan)</li> <li>Fixed asset value to be higher than the loan</li> </ul>
Control by the bank	<ul style="list-style-type: none"> <li>Bank assesses the business</li> <li>The ability of paying the loan</li> </ul>	<ul style="list-style-type: none"> <li>Bank assesses the business</li> <li>The ability of paying the loan</li> </ul>		Assesment is done before the loan grant	<ul style="list-style-type: none"> <li>Faulu has to assess the project before the loan is approved</li> </ul>
Guarantee (individuals)	<ul style="list-style-type: none"> <li>Property (assets, title deed)</li> <li>Supported guarantee from parents</li> </ul>	<ul style="list-style-type: none"> <li>Business assets</li> <li>Household items</li> </ul>	<ul style="list-style-type: none"> <li>Title deed</li> <li>Log book</li> </ul>	<ul style="list-style-type: none"> <li>Assets</li> <li>Livestock</li> </ul>	<ul style="list-style-type: none"> <li>Assets (value must be higher than the loan)</li> </ul>
Guarantee (groups)	<ul style="list-style-type: none"> <li>Group members</li> </ul>			Fixed assets	<ul style="list-style-type: none"> <li>Group members</li> <li>Individual's assets</li> </ul>
Amount of loan	Ksh 10,000 – 1,000,000	Ksh 10,000 – 500,000	Depends on the securities	Ksh 10,000 – 200,000	Ksh 5,000 – 300,000
Interest rate	8 %	19.2 %	17 %	Ksh10,000 – 200,000	22%
Repayment	24 months	24 months	72 months	3 to 18 months	Works with farmers

Institution	Agriculture finance corporation	KWFT: Biashara	KWFT: Individual loan	K-Rep Bank	Juhudi Kilimo
Type of loan	Credit to farmers	Credit to women	Credit to woman	Microfinance loan	Microfinance loan
Condition individuals	<ul style="list-style-type: none"> <li>Title deed.</li> <li>A copy of payslip or bank statements.</li> <li>ID • PIN</li> <li>Personal contribution towards the project.</li> <li>A brief proposal for the intended project</li> </ul>		<ul style="list-style-type: none"> <li>Existing business</li> <li>Bank statements for 6 months</li> </ul>		<ul style="list-style-type: none"> <li>Owner of land</li> <li>Have been registered with the group</li> <li>Save Ksh100</li> <li>Group of 5–15 members</li> </ul>
Condition groups	<ul style="list-style-type: none"> <li>Title deed</li> <li>A copy of payslip or bank statements, • ID • PIN</li> <li>Personal contribution.</li> <li>A brief proposal for the intended project</li> </ul>	<ul style="list-style-type: none"> <li>20 – 30 members</li> <li>Existing business</li> <li>Self funding (20%)</li> </ul>	<ul style="list-style-type: none"> <li>Have an existing business</li> <li>Have 2 guarantors</li> <li>ID, PIN</li> </ul>	<ul style="list-style-type: none"> <li>Own land</li> <li>Registered with the group</li> <li>Save Ksh 100</li> <li>Group of 5 –15 members</li> </ul>	<ul style="list-style-type: none"> <li>5 – 15 members</li> <li>Have a loan security fund (20% of loan)</li> <li>The fixed asset should be of a higher value than the loan</li> </ul>
Control by the bank	<ul style="list-style-type: none"> <li>Assess the project</li> </ul>	<ul style="list-style-type: none"> <li>Bank assesses the business</li> </ul>	<ul style="list-style-type: none"> <li>Bank assesses the business</li> </ul>	Assess the project	<ul style="list-style-type: none"> <li>Faulu has to assess the project before the loan is approved</li> </ul>
Guarantee (individuals)	Title deed		<ul style="list-style-type: none"> <li>Title deed</li> <li>Log book</li> </ul>		<ul style="list-style-type: none"> <li>Assets (value must be higher than the loan)</li> </ul>
Guarantee (groups)	Title deed	Household items of group members		<ul style="list-style-type: none"> <li>Group members</li> <li>Savings</li> </ul>	<ul style="list-style-type: none"> <li>Group members</li> <li>Individual's assets</li> </ul>
Amount of loan	Ksh50,000 first loan	First loan Ksh5'000 – 100,000	Ksh100,000 – 1,000,000	First loan be a maximum of Ksh60,000	First loan be a maximum of Ksh60,000
Interest rate	10% per year	1.5 % / month(18 % per year)	19.2 %	23 % on reducing balance (individual). 17.5% (groups)	18 %
Repayment period	Short term loans within 12 months Medium term 12 – 24 months Long term 36 – 72 months	24 months	24 months	12 months	24 months

## Mkulima Mbunifu for Tanzanian farmers

A new baby has been born into TOF family with the launch of a new *Kiswahili* magazine for farmers in Tanzania. *Mkulima Mbunifu* was introduced to farmers during the 2011 Nane Nane celebrations. The new magazine was launched in two events; on 5th August at the USAID-TAPP stand in Arusha and on 7th August at the *Bustani ya Tushikamane* in Morogoro. The Arusha regional commissioner Isidori Shirima who presided over the launch encouraged farmers to take agribusiness seriously so as to improve their livelihoods.

### Farmers need information

Reducing hunger and poverty begins with small-scale farmers. If small-holder farmers can grow and sell more food, they can feed their families, send their kids to school, invest in their farms, and help improve their communities. But these farmers often do not



Farmers receive the magazine in Morogoro.



Arusha Regional Commissioner Isidori Shirima distributes the new magazine to those who attended the launch in Arusha.

have access to the resources and tools they need to be successful. The bulk of relevant farming information does not reach small-scale farmers.

*Mkulima Mbunifu* will try to fill this gap by being the bridge between farmers in the rural areas and research institutions that produce appropriate technologies but are not able to disseminate it to farmers.

The production of this magazine is a joint effort and cooperation between the International Centre for Insect Physiology and Ecology (icipe), Biovision Foundation, Swiss Development Cooperation, USAID-TAPP and Sustainable Agriculture Tanzania (SAT).

## Answers in brief

### Is goat milk healthy?

Is it true that goat milk is not good for children's consumption? Marion Nyawira, Mathira East

Goat milk is better for children than cow milk. However, newly born children can develop milk allergies if exposed to cow milk too early before their digestive system has matured. When this happens, avoid giving them both goat and cow milk.

### No insulin!

Do we have any drug in the agrovet shop that is capable of increasing milk production in a cow that is being milked? In an agrovet shop, I was referred to insulin.

Good management of your dairy cows, not insulin, increases milk production. Do not get fooled by these unscrupulous sales people. Insulin is a substance extracted from the pancreas of animals for use in regulating blood sugar in diabetic people. It cannot increase milk production

### Cows cannot be the same

Can two different cows produce the same amount of milk if they are given the same feeds with equal amount of water?

No two different cows are alike in many respects, just like no two human beings are exactly alike. Some cows are better producers than others. This is why selective breeding is done on animals – to produce better milk yielding dairy cows which are adapted to various conditions.

### Twins a result of good luck

What brings about a cow calving down twins?

Good luck and sometimes a lucky combination of genes.

### Turn compost frequently

Will there be any effect in delaying to turn my compost manure?

The composting process will delay and maybe stop for a while.

### Give your animals mineral licks

I have observed some animals licking soil, what is the reason behind these? Twajijenga Self Help Group.

Cows need a lot of different minerals, and if they do not get enough cattle salt or the salt is of low quality, they will try to compensate when they find soil or old ashes that taste good to them.



### Boiling plant extracts not good

When should we boil some of the medicinal plants when preparing them against pests? Leah Murabwa

Not all medicinal plants need boiling. Only plants like chilli, ginger and other that are not so soft plants benefit from boiling for medicine. Extracts from soft plants are more effective if used without boiling.

## >>> from page 2: GMOs: Fears, ignorance and expectations

gene was taken from a natural soil bacterium which produces a toxic protein that kills insects if they eat it. A GMO plant containing this gene is able to produce the Bt-toxin inside its cells. Insects, e.g. the maize stem borer, that feed from this plant will eventually be killed by the toxin. The producers of Bt-crops claim that the toxin is only harmful for insects; when broken down in the human digestive tract, it loses its toxic potential. The most common Bt-crops are maize and cotton.

• **Herbicide tolerant crops:** They contain a gene that enables them to survive being sprayed with glyphosate (Roundup) or glufosinate. These are:

Soybeans (77% GMO-soybeans worldwide)

Cotton (49% GMO-cotton worldwide)

Maize (26% GMO-maize worldwide, 86% GMO-maize in the USA, 70% in South Africa)

Sugarbeet, canola (rapeseed), rice

• **Virus resistant crops:** Hawaiian Papaya. The gene was transferred from the disease-causing virus itself.

• **Vitamin-enriched crops:** Maize enriched with vitamin A and C and rice enriched with vitamin A are about to be introduced into the market in the

next few years. They contain genes from plants and bacteria.

### The GMO debate

It is a very confusing debate for several reasons; some common arguments are listed in Table 1. GMO crops have been consumed in the USA for 15 years now. From there, we have no evidence or cases that show GMO crops to be unhealthy or harmful. The EU handles GMOs very restrictively, because consumers oppose their introduction and because there is also no final proof that they have no negative implications on human health.

In Africa, there are rumours that GMO crops cause cancer, infertility, and impotence. There is absolutely no evidence for this, and we think this is manipulating people's opinions in a very bad way. But we also think that people's fears should be respected and they should not be forced to consume anything they do not want. GMO crops are not used in organic production because of the artificial nature of the gene transfer and because risks to health and environment can still not be ruled out. The discussion is not likely to end soon! However research on genetically modified organisms is ongoing. ■

# Goats can do well when given proper care

Why are most goat houses made of raised, slatted and elevated design?

Housing and shelter needs for goats vary by climate, geographic region, season, production system, and personal preferences of the farmer. Goats are notorious for escaping, so you'll probably have to invest some more time and money in your goat housing than you have for other livestock. Elevated floors are a management strategy, because they are easy to clean and maintain; they also give room for the goats dropping to pass through the slatted floor. So the danger of diseases such as mastitis is reduced. This also allows for the droppings to be collected with ease. These enhances dryness in the house that breaks most disease cycles related to cold and wetness.



## Premature kidding can be avoided

What causes premature kidding amongst does?

There are many causes for premature kidding in goats, some related to herd health, nutrition, environment and to a combination of any one or all of these factors. It has been proven over time and with experience that nutrition is directly related to health. The lack or excess of any one nutrient, vitamin or mineral may be the sole determining factor in the health of your goat.

One should avoid rough handling during their pregnancy. Apart from proper housing, provide good condition for kidding, increase on the concentrate during the last months of pregnancy, provide constant access to mineral salt blocks and plenty of clean drinking water, try to avoid transporting during pregnancy, and scaring the goat. Abortion diseases may also cause premature kidding and these include: *Campylobacter (vibrio)*, *Chlymdia* and *Toxoplasmosis*.

## Micro-organisms in the compost heap

Which microbial organisms are present and plenty during the process of composting so that I can introduce them in my heap to facilitate the first rotting of the matter?

You need not worry about the micro-organisms in a compost heap! They are naturally present in the environment: in the soil, on plants and even in the air. There are hundreds of different kinds! They are specialized to immediately start working on any dead organic matter. What they need in order to be able to do their job is some moisture (but not waterlogging) and oxygen. Mix some soil into your first heap - very small amounts or even the soil particles that stick on roots of weeds are sufficient. Protect your heap from the sun and from heavy rain, and keep it moist. These are your most important contributions. If you like, you can also try to add EM1, a product that contains some micro-organisms and is easily available. Some farmers say it helps the process.

## Mix bone meal into the compost

Can I crush bones into dust and mix it with liquid fertilizers to improve the value of these fertilizers?

Liquid fertilizers provide a balanced

mixture of N, P and K in soluble form that can be taken up easily by plant roots. It is therefore ideal as a top-dressing for growing plants or as a foliar feed. Bone meal, on the other side, is a valuable fertilizer as it is rich in Phosphorus. However, this phosphorous is not in an easily soluble form, and for this reason, the fertilizer effect of bone meal is very slow and long term. It would not improve the fast effect of a liquid fertilizer! We recommend to use bone meal separately, or to mix it into the compost which is also a slow-acting soil improver.

## Cover the compost heap

Can I cover my compost with saw dust to prevent sun heat from getting to my layers?

It is possible to do that, also the use of a nylon paper, dry grass, or mud. You may also raise a shed to protect your compost against sun and rain. *tsz*



## Choose the correct breeding age for your goat

When should I mate a doe that has never kidded before?

This is purely a managerial decision and depending on the individual farmer and the level of management given to the animal. Generally, in the tropics for all breeds the breeding age should be at between 7-10 months, and the breeding weight of the doe should be 60-75% of the adult weight. However, in some breeds such as Toggenburg and Alpine, young does are capable of showing their heat signs at the age of 5 months, so you must be able to keep an eye on heat signs, for it might come as silent heat. If a farmer detects that the goat is on heat, they should then consider the weight of the animal to assess if it can carry a pregnancy to term. Other factors such as nutrition also come into play here.

## Three month waiting period

When should I mate a lactating doe that has at least kidded down?

Goats are seasonal breeders and can lactate for a period between 120-150 days (4-5 months). For both dairy and meat goat breeds, it is advisable to give the doe a minimum period of 3 months with good balanced feeding before it is served.



## Trees protect themselves

Why do some trees like cypress not allow other plants to germinate and grow under them? John Wasike, Kimilili.

*tsz*-This can have several reasons. Some trees grow a dense leaf canopy and produce so much shade that tree seedlings lack the light they need for a good development. Other trees produce substances that affect the development of other plants underneath them. Some conifers, for example, create a very acidic environment in the topsoil of their root zones which is hostile to germination and growth of most other plants. The cypress also belongs to this group of trees. Many different plants have similar protection mechanisms for their own survival.

## Trees with medicinal value

Like many small plants and shrubs, trees are also of high medicinal value. The most famous is the Neem tree.

**TOF** - In Kenya, especially along the Coast, the Neem tree is well known:



in Kiswahili its name is "Muarubaini", which means the tree of the forty cures. The seeds, leaves and bark can be used to produce medicinal, cosmetic and insecticidal products. **TOF** featured the benefits of Neem tree products several times;

here we introduce to you some other beneficial trees.

**The Miracle tree** (*Moringa Oleifera*, local name: *Mlongo*) is known in East Africa as „mother's best friend“, horseradish tree or drumstick tree (due to the large drumstick shaped pods). It is a nutritional dynamite. Moringa trees have been used to combat malnutrition. It has antibiotic activity and in the older days, was used to fight cancer. Leaf juice mixed with honey treats diarrhoea, anaemia, dysentery and colon inflammation, stabilizes blood pressure and controls glucose levels in diabetic patients.

Moringa seed powder can be used as a quick and simple method for cleaning dirty river water. Studies have shown that this simple method of filtering not only diminishes water pollution, but also harmful bacteria. The moringa powder joins with the solids in the water and sinks to the bottom. This treatment also removes 90-99% of bacteria contained in water.

**The Arabian num-num** (*Carissa edulis*, Swahili name: *mtanda-mboo*) is a spiny, multi-branched, small tree with a milky sap. The roots may prove useful in the treatment of cancer, the twigs against tapeworm. The boiled leaves are applied as poultice to relieve toothache. Root bark is mixed with spices and used as an enema for lumbago and other pains. Root scrapings are used for glandular inflammation; ground roots are used as a remedy for venereal diseases, to restore virility, to treat gastric ulcers.

**The East African green wood** or Kenya greenheart (*Warburgia unguandensis*) is a sprawling evergreen tree 4.5 - 30 metres tall, bark smooth or scaly, pale green or brown. The juice (or powder) of dried bark is a remedy for stomach-ache, constipation, toothache, cough, fever, muscle pains, weak joints and general body pains. Fresh roots are boiled and mixed with soup for the prevention of diarrhoea. Leaf decoction baths are used as a cure for several skin diseases. The inner bark provides treatment for the common cold and smoke from the burning bark if inhaled is a remedy for chest complaints.

**Red Stinkwood** (*Prunus africana*, Kikuyu: *muiri*) is an evergreen imposing tree up to



*Moringa Oleifera*



*Carissa edulis*



*Warburgia unguandensis*



*Prunus africana*

25 metres tall, open-branched. Traditionally used against fever, inflammation, kidney disease, malaria, prostate cancer or stomach upset. The active ingredients in *Prunus Africana* are effective treatment for benign prostatic hyperplasia and prostate gland hypertrophy (enlarged prostate gland), ailments that affect about 60% of men above 50 years, especially in Europe and USA. Traditional healers also use the bark in treatment of stomachache, wound dressing, infusion of leaves to improve appetite, treatment of both bacterial and non-bacterial chronic prostatitis and genital infection as well as hirsutism (facial hair) in women.

## Rabbits die of a "mysterious" disease

**TOF** - Our magazine is getting alarming questions from rabbit keepers who complain, that their animals are dying, even if they are given feeds bought from agrovet shops. Unless a rabbit keeper consults a veterinarian, it is difficult to discover the actual cause of the deaths. It must be assumed that the deaths are caused by the feed given to the rabbits. In times of drought and scarcity, low quality and sometimes contaminated maize and other inputs are used by animal feed manufacturers.

The worst and most frequent contamination of maize is aflatoxin. According to research done by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), aflatoxin poisoning is reported in all domestic animals like cattle, horses, chicken and rabbits; no animal species is resistant to the acute toxic effects of aflatoxins.

Rabbits are the most susceptible of all domestic animals to aflatoxins; already very small amounts of aflatoxin cause haemophilic anemia, which is caused by the destruction of the red blood cells, and finally death. If rabbit keepers are not sure about the quality of compounded feeds, it is advisable that they increase the supply of grass, hay, vegetables etc. Do not feed rabbits with tomato or Irish potato tops or mint as they are poisonous.

Rabbit deaths tend to increase in the month of June and July, which coincides with the cold weather, due to poor husbandry. Experienced farmers forego mating of their rabbits to prevent births during the cold spell.

## Selling & buying

**Moringa oleifera:** We are based in Kagio town Mwea West district and have Moringa oleifera tree seedlings to sell at Ksh50 per seedling 0727 203 477.

**Dorep hens:** I am selling 14 weeks Dorep hen at 650/ only. jgicuku@gmail.com

**Kenbro chicks:** We sell day old chicks. Call to buy or place order for future buying: 0722 569 610 or 0722 106 262.

**Looking for chicks:** I am looking for 60 chicks (cocks) to rear for meat. stevemaxwel@gmail.com

**Incubator:** I have a commercial incubator for sale, fully automatic, setter capacity 3000 eggs, hatcher capacity 1500 eggs. 0723 257 028