

The Organic Farmer

The magazine for sustainable agriculture in East Africa



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What's the trouble with maize?

TOF - Kenya is faced with a looming shortage of maize. In April, the Ministry of Agriculture estimated the stock of maize remaining by the end of July at 5.8 million bags. It also referred to the 10.4 million bags still held by farmers, the 550,000 bags of the harvest between April and July and the Japanese food aid support, all totalling 2.3 million bags. According to spot checks done by TOF, most farmers sold their maize two months ago, and the actual harvest might be much less due to poor rains.

Of course, some big trading companies are hoarding maize until the prices have gone up. Already, one bag of maize costs between Ksh 3,600 and 4,200 in places such as Kitale or Machakos, a 2kg packet of *unga* goes for Ksh 120, which is a vary bad situation for wananchi. The shortage can be addressed by importing; but even if maize would be ordered today, it would take around two months for it to reach shops in the country.

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Dear farmers,

Kenya is once again facing a serious shortage of maize despite a good harvest last year. The frequency of government failure to take the country's food security situation as a matter of priority is something that really baffles the mind. We have repeatedly reminded Kenyan planners that any government worth its name cannot fail to plan on the food requirements of its people whatever the circumstances.

Right now a packet of *unga* is going for Ksh 120 while a bag of maize has reached an all time high of Ksh 3600 – even in the maize producing areas of Kitale and Uasin Gishu. Kenyans are suffering simply because the government is unable to meet their food needs. It is simple economics that with a good food policy in place, the government should be able to buy surplus maize from farmers at reasonable prices and later release the same stocks into the market in times of shortage in order to stabilise prices and make it affordable to the ordinary Kenyans at a time such as now.

An important institution such as the National Cereals and Produce Board should be provided with adequate funds immediately after the harvesting season to enable it buy maize and replenish its stocks. Instead, funds are often delayed without any proper explanation and only released in inadequate amounts when the maize has already been exhausted.

Political interference in the running of NCPB has undermined its capacity to purchase maize, leaving the farmers at the mercy of middlemen. As the situation stands now, it is obvious that soon the country will not have any maize which will force it to import. Assuming that any import will take another two months, many Kenyans are now faced with starvation.

If our planners were really committed to the welfare of Kenyans, food security would be one of their top priorities. But in a situation where corruption, greed and incompetence has taken root at each and every one of our state institutions, it is difficult for the country to realise any meaningful development, let alone feed its people.

Setback for poultry farmers

TOF - For some years, chicken rearing and breeding has been the most thriving sector in agriculture. Now it faces a major setback. The current economic situation in Kenya that has witnessed an increment of prices of commodities has consequences for the chicken farmers: The prices of poultry feed have gone up sharply; 50 kg of layers mash went up from KSh 2,700 last year to KSh 3200 in May 2011.

At the same time, consumers are suffering from high prices wherever they go for shopping. Food is more expensive, house rent has gone up as the fuel prices, which forces many



people to walk to work instead of using vehicles. This has forced many households to cut down on their food budgets, especially meat consumption. In turn, this has affected chicken keepers and breeders because the consumption chicken meat has gone down. As a consequence, the prices of chicken, especially for broilers, went down, compared to the cost of production. Only the indigenous chicken are sold at more or less the same price. So the chicken breeder is faced with a double problem, with higher prices for feeds and with lower income through reduced chicken prices. Pages 4 & 5

Benefits of fodder trees



Our trees Our future

Most farmers know the benefits of fodder trees such as leucaena, callianda, mulberry etc. But only few farmers make use of this high value fodder supplement for their animals. Page 2

The last opportunity to receive TOF

In this issue, we have attached a letter to all farmers' groups which have not yet responded to our questionnaire, sent out in November 2010. We want to make sure that farmers really get our magazine. Since our waiting list is long, it is only fair that we send TOF to those farmers who are eager to get information on sustainable agriculture and who are keen to improve their livelihoods. We will continue to deliver *The Organic Farmer* to those farmers' groups which confirm their interest by answering our questionnaire by July 15. All others will be cancelled from our mailing list without any further notice. TOF

An easy way to make your own fertilizer

Fodder trees are useful in feeding animals; their leaves are rich in protein and minerals.

The Organic Farmer

Fodder trees and fodder shrubs are an important element of farming systems in tropical countries. They

Our trees Our future



are often leguminous plants and contribute significantly to soil maintenance and fertility. They also provide high quality forage to livestock

and are particularly valuable as a dry season feed resource, because their leaves are rich in protein and minerals. This makes them an ideal feed supplement for grasses and crop residues. Farmers can get cheap high value fodder and reduce dairy meal costs if they plant fodder trees and shrubs. A very useful way to do this is to grow them along the edges of the *shamba* or as fence between plots.

Tree forages have a highly beneficial effect on milk and meat production. The protein content of fodder from leguminous trees is usually higher than that of grasses; it ranges between 13 and 25%. The variability in the nutrient content is high and depends mostly on the season and the age of the plant material. In general, fodder from trees and shrubs degrades fairly well and rapidly in the rumen and can increase the intake of other feeds. On the other side, it can contain high levels of anti-nutritive factors (e.g. tannins, lectines, glycosides) or even toxins (alkaloids) that have harmful effects: they disturb the digestion or the metabolism, and interfere with animal health when consumed in large amounts.

Feeding recommendations

Avoiding harmful effects from tree and shrub fodder is essential, and

various methods are known to eliminate this risk:

- Fodder from trees and shrubs should not be fed in higher proportions than 30% of the ration (on a dry matter basis)
- Mix it with grasses or crop residue
- Introduce it gradually in increasing quantities, if the animals are not used to it
- Wilting or drying usually enhances palatability

Planting fodder trees

Fodder trees are best established by transplanting seedlings from a nursery. Many species have hard, waxy or thick seed coats that need a treatment before the seeds can germinate.

Cold method: Soak the seeds in plenty of water until they swell, usually between 12 to 48 hours.

Hot method (recommended for Leucaena): Pour plenty of boiling water over the seeds and stir them gently for 2-5 minutes. Hot water can kill the seeds - do not soak them for too long! Pour off the hot water, replace it with cool water and let the seeds soak for 12 hours until they have swelled visibly.

Calliandra and sesbania can be treated in cold or hot water. Gliricidia does not need treatment if the seeds are good. After the final soaking, sow the seeds immediately!

Establishment

After planting, all tree seedlings need attention! Make sure to water them regularly. Many of them grow slowly, and weeds can outgrow them quickly, resulting in high seedling mortality. Weed regularly and use the weeds as mulch around the young plants. You should also prevent damage from livestock: use some kind of protection - fencing is best and ensures that your fodder trees grow quickly and provide all the benefits you can expect from them. You can increase the productivity of trees if you delay the first harvest until they are one to two years old and well established.

Leucaena

Leucaena foliage is known for its high value as ruminant feed. It contains tannins which are believed to increase protein uptake. It is very deep rooting and drought tolerant. Once established, it is also extremely tolerant of regular defoliation by cutting or grazing. Excess growth can also be cut and dried.



Calliandra

It is estimated that 3 kg of fresh calliandra has the same effect on milk production as one kg of dairy meal. Calliandra is not as drought tolerant as leucaena and is also not tolerant to grazing and slashing. This species should be fed fresh and not wilted or dried. Calliandra seeds are poisonous for livestock - avoid feeding branches that have seeds on them!



Sesbania

Sesbania is also of high value for ruminants. It should not be grazed or cut back intensively. Harvested leaves make a rich compost.



Gliricidia

Gliricidia can be used as living fences/hedges, as cut and carry feed for ruminants, for green manure, as support and for honey production. Some palatability problems occur with ruminants depending on prior experience. However, palatability problems can be avoided by wilting the leaves for 12-24 hours before feeding increases intake.



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A disease that is ignored by farmers

Despite the heavy economic losses caused by foot-and-mouth disease, nobody takes the disease outbreak in the country seriously.

John Cheburet

Foot-and-Mouth Disease (FMD) is endemic in Kenya and East Africa. Its presence in the country is a major obstacle to livestock production as it affects livestock production for both local and export market.

FMD is highly contagious and affects cloven-hoofed animals – both domestic and wild (cloven hoofed means: the hoof is divided into two). It manifests by vesicle formation in the skin of the feet and in the mouth, labia and lips. In most cases, the disease is not fatal. Infected animals show wounds in the mouth and feet, lameness, lose appetite and are unable to move and feed well because of the wounds. As a result, milk production goes down or stops altogether. Animal growth is impaired. The disease causes great loss to farmers, particularly pastoralists who rely entirely on livestock.

Most animals will get sick but will not die – meaning that livestock keepers do not take it as seriously as other diseases e.g. anthrax, which can cause immediate death. This is where the problem lies. FMD is a notifiable disease; it is expected that any suspected outbreaks are reported immediately. But this is not the case. There is laxity among farmers who do not report outbreaks; and the department of veterinary services takes too long



An infected cow: Animals infected by foot and mouth disease have painful wounds in the mouth which make it very difficult for them to eat especially during the dry season.

to respond to outbreak reports. Yet the disease continues to cause havoc on farmers' livelihoods.

Spread of the virus

FMD can be transmitted through direct and indirect contact between animals and even humans. It is transmitted through inhalation or ingestion of the virus from contaminated feeds and direct contact with infected animals. And because FMD can remain in an animal without showing any visible signs for between 3 to 8 days after the animal is infected, it spreads very fast.

In East Africa, FMD is caused by six serotypes of Foot and Mouth Disease viruses, namely: A, O, C, SAT1, SAT2, SAT3. The most dominant virus are SAT1, which is common in central highlands, and SAT2 which is responsible for the most recent outbreaks in the low-lands of the Rift Valley.

Vaccines

Vaccination is the primary weapon against the disease. However, access to vaccines remains a big challenge to smallholder livestock keepers. They do not know what vaccine to use and where to get it. The problem is that there are different types of the FMD virus, which require different types of vaccines. This means that farmers could be buying the wrong vaccine. Large commercial farms are aware of the economic effects of FMD and do all they can to control it. These large-scale farmers know where they can get the vaccine and because they use private veterinary providers, they know which vaccine to use. But inefficient use of vaccines is responsible for resistance of the virus to medication.

According to Dr. Henry Kiara, a scientist from ILRI, a new serotype

of the FMD virus is circulating in the country which is not covered in the current vaccines. This explains why the current vaccines are sometimes not working very well. When an outbreak is reported by farmers or livestock extension officers, the department of veterinary services collects samples for identification at the Foot and Mouth Institute in Embakasi. Then they advise farmers on which vaccine to use. Unfortunately, farmers have not been keen to report, because the department does not respond to reports of outbreaks. Unreported outbreaks lead to rapid spread of the disease. Government response is often focused on how the disease affects the export market. This means that small-scale farmers can get assistance only if they have access to international markets.

Concerted action

The eradication of rinderpest provides vital lessons that can be used in the fight against FMD. Concerted action at national, regional and international levels ensures that expertise and resources are focused. The involvement of farmers in surveillance, coupled with training of these farmers, and community based veterinarians will speed up identification of outbreaks and reduce the spread of disease through animal movement across districts. The ministry of livestock development needs to step up training for veterinarians so as to improve expertise in the districts and to ensure immediate investigation and response to FMD outbreaks. FMD has serious economic consequences for livestock keepers, and unless the disease is adequately addressed, farmers will continue suffering intermittent losses every year.

Management of foot-and-mouth disease

- Vaccinate regularly. This should be done after determining the strain of the virus in your region to be able to give the correct sero-type vaccine. Usually a multivalent vaccine is administered every 6 months as preventive measure.
- Report occurrence immediately so as to invoke quarantine if the disease is confirmed by the veterinary authorities.
- Disinfect all the premises where the disease has occurred, and treat motor vehicle tyres with a suitable disinfectant to prevent further infections.
- Keep infected animals under a shade and give them plenty of water.
- Give the animals soft feed such as green soft lush grass, as the blisters make it painful for the animals to eat rough material. The addition of molasses is advised to give the animals energy.
- Monitor and restrict the movement of animals.

Farmers go for productive chicken breed

The shortage of Kenbro chicks has led to a situation where farmers breed their own Kenbro stock and sell to other farmers.

Peter Kamau

Kepha Maina has been rearing indigenous chickens for many years in his one-acre farm in Wanyororo. But he was disappointed with their rate of growth, egg production and hatching rate. This changed in November last year when he learnt of Kenbro, a dual-purpose breed of chicken that lays more eggs and has quality meat. He ordered 50 Kenbro day-old chicks and went into rearing them. Within six months, his hens were already laying eggs. Maina started selling Kenbro eggs for breeding to other farmers in his area. He hatched Kenbro eggs using his indigenous hens would sell them as day-old Kenbro chicks.

Maina has now become known as a breeder of Kenbro chickens in his village. Customers are streaming to his one-acre farm to buy eggs and day-old chicks. But he cannot meet the demand, and he has been forced to put many farmers on the waiting list. He is planning to buy an egg incubator to increase the number of chicks for sale to farmers. "This breed is a blessing to us. It is laying eggs almost daily, and its meat is on high demand in town. The only problem is that I cannot produce enough eggs and chicks for my customers which is why I need an incubator as soon as I can get one", he says.

Good prices

James Gathogo, an Israel-trained engineer and farmer at Ondiri near Kikuyu town is another Kenbro breeder. He has two incubators which enable him to incubate and sell Kenbro eggs and day-old chicks to fellow farmers. He sells 400 day-old Kenbro chicks at a price of Ksh100 each in a month. A



What makes this breed attractive?

The two farmers named above are just two of the hundreds of small-scale farmers who have improved their chickens production by buying Kenbro chickens. Why are so many farmers going for the Kenbro breed? Kenbro has become a breed of choice for farmers due to the following reasons:

- It is a dual-purpose breed that lays more eggs than indigenous chickens and has lean, soft, high quality meat. Kenchic Ltd developed it for poultry farmers interested with a breed that can be both a layer and a broiler.
- Kenbro is a hardy breed with low mortality (death rate).
- Compared to hybrid chickens, it is more resistant to diseases.
- The breed grows and matures fast. With proper feeding, it will start laying eggs at five and a half months and will

continue laying continuously with the usual break of five to six weeks while molting.

- It can attain up to four kg with proper feeding.
- Kenbro has high quality meat that is very popular with consumers.



Kenbro cock goes for Ksh 1500, while a hen goes for Ksh 1200.

Due to the many farmers in his waiting list, farmers who ordered Kenbro chicks and eggs from him in April will get their supplies this month. So far he has sold more than 10,000 day-old chicks to other farmers.

Using his engineering skills, Gathogo produces incubators for interested farmers. He has already developed one from a refurbished refrigerator with a capacity of 500 eggs. He is designing another incubator with a capacity of 3000 eggs to meet the needs of his customers.

Kenbro chicken breed is a protected brand

The Kenbro breed, originally developed in France, for organic production, was introduced in Kenya by Kenchic Ltd. The company's marketing manager Humprey Mwangi said the company felt there was a need to offer a dual-purpose breed suitable for local conditions and which would require less intensive management than hybrid chickens.

But the main issue that is being raised is whether farmers are allowed to breed Kenbro chicken and sell to other farmers. According to Kenchic Ltd, the farmers are breaking the law because Kenbro is a registered trademark of Kenchic Ltd. Kenbro chicken can only be bred and sold if the farmer has

acquired a license from the company. Secondly, it is clear that farmers are not selling pure Kenbro chicken if they do not separate Kenbro cocks and chicks from other chicken stock. Inbreeding will therefore spoil its qualities.

In breeding, the breeder has to have a carefully selected breeding stock – the breeder has to start from the grandparent, parents and then their progeny. In - in this case, it is only Kenchic that has the grandparents and parents of the Kenbro breed. What farmers are now selling to other farmers is the second or third generation breeds, which may not have the qualities of a pure Kenbro breed. By purchasing Kenbro at this stage they are diluting

the genetics and vigour of the original Kenbro breed. Eventually this will dilute the breed to a point where the breeds they will be selling is no longer Kenbro.

One reason why farmers are trying to breed their own Kenbro chicken is the huge demand for the breed which the company has not been able to meet. However, Mwangi says that soon the shortage will be a thing of the past because the company is working to double its production capacity for this particular breed to meet the demand.

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High feed prices hit poultry industry

Many farmers have stopped production as cost of feeds goes up and chickens prices remain low.

The Organic Farmer

Kenya's poultry industry is facing serious problems due to the increasing feed prices and falling chicken prices in the local market. Consumption of chicken meat has gone down in urban areas as consumers cut down spending in the face of the current difficult economic situation in the country. The high feed prices have forced many farmers rearing chickens to cut down production to as low as 30 per cent while some of them have stopped production altogether.

Expensive ingredients

In the last five months, the price of maize, which is the main ingredient in feed formulation, has risen from Ksh 1,200 in December last year to Ksh 3,200 last month. All other feeding ingredients are more expensive. For example, feed millers were buying a kilogramme of cotton seed cake at Ksh 20 last year, the same is now going for between Ksh 50 and Ksh 60. A kilogramme of sunflower cake was selling at Ksh 13 last year, it is now going for Ksh 40. Maize germ was selling at Ksh 9 a kilogramme but it has gone up to Ksh 18. Cotton seed cake and sunflower are imported from Tanzania. Fishmeal, which was available before, now has to be imported from Tanzania, after the Kenyan government banned its fishing in Lake Victoria.

Due to these higher costs of feed ingredients, millers have increased the prices of feeds. At Sigma Feeds, a bag of layer's mash is going for Ksh 2300 up from 1800 last year. Broiler starter feed from Unga Company Ltd is now retailing at Ksh 3200 up from Ksh 2700 last year, the same is selling at Ksh 3000 at Sigma Feeds up from Ksh 2300 last year.

Chickens prices remain the same

As the production costs escalate, the market prices for poultry products have remained the same over the same period mainly because wananchi have reduced the consumption of chicken meat. This has consequences. Humphrey Mwangi, the marketing manager Kenchic Ltd. says that it costs between Ksh 210 and Ksh 230 to produce one kilogramme of broiler chicken; at the City market Nairobi the same broiler chicken is going for between Ksh 190 and Ksh 220 per kg. It costs between Ksh 225 - 236 per kg to produce 1 tray of eggs. In the market, the average retail price of a tray of eggs is Ksh 230. John Ndirangu, a farmer who rears broilers in Kitale considers



the current pricing as very unfair to farmers: "When we deliver, the hotel does not even measure the weight of the chickens, they will simply tell you the price is either Ksh 250 per chicken or even less."

Cheap feed dangerous

"At the current market prices farmers cannot make any profit. Indeed, most of our biggest customers have either cancelled their bookings for hybrid day-old chicks or temporarily reduced or stopped production of broilers and eggs," says Mwangi.

The high prices of chicken feeds has forced many farmers to go for cheap feed of poor quality. "But cheap is very expensive in the long run," says Kirtesh Shah, Managing Director, Sigma feeds. He says chicken cannot grow without the right feeds. To produce 1 kg of chicken meat, a farmer spends 1.8 to 1.9 kg of feed. Farmers using low quality feeds have to use 3 to 4 kg of feed to

get 1 kg of meat; this is not economical, he says.

Due to the increase in the number of farmers keeping poultry and even other livestock, a lot of feed manufacturers have set up mills in all the major towns in the country. But the quality of feeds they produce is never analysed for quality. Farmers buying such feeds end up making great losses.

Support for poultry industry

Farmers and feed millers complain that, unlike other sub-sectors in agriculture, the poultry sub-sector has been ignored by the government for a long time. Feed millers are especially concerned that the government has not created an enabling environment for the industry to grow. According to them, the government should have anticipated the current maize shortage in the country and instituted measures to allow duty-free maize early in the year.

Mwangi proposes a raft of measures the government could take to make animal feeds affordable to farmers. One of these is to allow the importation of yellow maize and remove taxes on imported soya beans. Another measure would be to remove taxes on animal feed inputs such as pre-mixes, which includes minerals and vitamins. This would lower poultry and even dairy cow feed prices.

Yellow maize would be ideal for making animal feeds but this is banned in Kenya. It is difficult to reduce the current high prices of animal feed in a situation where the feed industry is competing for the same maize that is being used for human consumption. On the other side, the suggestion made by the feed industry, to import duty free maize at the beginning of the year, is tricky: It would have threatened the profit for the small-scale maize farmers, since they are forced to sell their maize to paying the school fees and other liabilities.

Be careful when buying feeds

John Mwangi, a poultry farmer in Lanet area in Nakuru, used to buy layers mash and broilers finisher feeds for his chickens from a popular shop in the town. But one day, a friend advised him that there was a place in town where he could get feeds that were just as good if not better at a lower price. He bought seven bags of layers mash and four bags of broiler feed.

"The very first week, I noticed my birds had cut down their daily production of eggs. I thought that maybe it was the cold weather that was responsible. Two weeks later, I noticed my broilers were not growing as they used to. A veterinarian examined the chick-

ens and discovered it was the feeds I was using. I discarded the remaining bags, forcing me to borrow money to buy the right feeds from my regular shop," Mwangi says.

Mwangi is not alone. Many farmers have been cheated in the same way. To beat the current high feed prices, some farmers buy good quality feeds and mix them with low quality feed. Experts warn that this does not solve the problem because the quality of the feed you have mixed is still poor and will affect poultry production. Farmers are advised to buy their feed only from well-known companies and their registered distributors.

What you need to know about hay

Feeding hay and silage

How do I give my hay or silage to my animals? Chebukwabi CBO dam group
tsz - Hay can be fed without restrictions. If you have prepared or bought hay of good quality (the simplest indicators are green colour and nice smell), you must only take care to give sufficient water with it (30 to 60 liters per day). You will need 6 to 12 kg of good hay per animal and per day, depending on their size and milk production. Hay of lesser quality should be supplemented with concentrates and tree fodder or green Napier grass if available.

Silage can be fed at a rate of 15 to 30 kg per animal per day. Depending on its quality (a pleasant sour smell is the best indicator), it should be supplemented by concentrates, good hay, tree leaves, or fresh grass if available.

Hay can be made from different plants

Can I make hay on a specific fodder crop or can I incorporate other feeds? Kepha Amulabu, Kamukuywa

Hay can be prepared from most fodder crops, and it is even good to mix different plants. Leguminous plants (leu-



caena, calliandra, lucerne, desmodium etc., but also green residue from beans, peas etc.) should be used at a rate of one third of the dry materials to add minerals and proteins. If you dry the different crops separately, you may control and optimize the drying process best. You may mix them in the way you like later; when you put them into the store, or when you feed them.

Make dry feeds attractive for animals

How do I make my selective animal take dry feeds as food? Naomi Kelonya.
 Make sure your dry feed is of good quality! Harvest young, green material for conservation early in the season instead of using old and matured vegetation that has lost its nutritional value. Make sure you store it in a cool, dry, clean and dark place to avoid rotting and moulds. If you offer low quality feeds like stover, complement and mix them with concentrates, mineral salt, green leguminous fodder etc. Offer any feed that your animals are not used to in small amounts initially, and increase the share as they get used to them.

Well stored, it can last long

For how long can I keep my hay in my store before it becomes useless? Irine Wafula. Kamukuywa.

All storage decreases the feed value of any food or feeds gradually. But in a suitable store, hay can be stored for many months. Make sure the place is dry, well ventilated, cool and dark. Try also to use young and green material and to prepare it carefully, this will prolong the period in which it is of high value.



Garlic against worms

Is it true that garlic when given to your livestock, will boost their immunity and carry out deworming in an animal's body? If yes, advise me more on the ratio of how many bulbs in relation to water ratio I am to use so that I give to my cattle.

tsz - Garlic is rather used for small animals or even people. Not all type of worms can be treated, and garlic may not be as effective as a good veterinarian drug! It is important you know what your animals are suffering from before you do any treatment. It seems that garlic can be effective against lungworms and gutworms that affect young animals mainly. On the dosage, little is known. Generally, good nutrition, herd and pasture management, and a sound tick control and vaccination programme are the best and most reliable way to boost an animal's immune system.

Garlic & pumpkin

In Ethno-veterinary, the following preparations are recommended for stomach and intestinal worms:

- Chop 250 g of garlic and pound them fine. Mix with 4 litres of water and drench ½ litre twice a day. This treats both worms and liver flukes.
- Boil the fruits and seeds of pumpkin after chopping them into small pieces until all water evaporates. Add a pinch of salt to encourage intake and feed at the rate of 1kg for an adult cow and 1/2kg for goats and sheep.

Choose the right variety of sorghum as fodder

Can sorghum stalks be used as fodder? Chris Nasokho, Chebukwabi CBO dam group

tsz - There are indeed some restrictions if sorghum and Sudan grass are used as animal feed. Sorghums, Sudan grasses and their crosses produce an alkaloid which releases prussic acid. This can be toxic to livestock if grazed or fed improperly. You can avoid this danger if you follow two simple rules:

- Avoid feeding young plants or young shoots. They contain particularly high concentrations of the poison. The cyanogenic potential declines as the plant or shoot matures and plant height increases. If you feed sorghum stover after harvesting the seeds, the danger to livestock is very small (but also the nutritive value of the forage).
- Avoid feeding sorghum during drought or frost. During times of stress, toxicity remains high even in maturing

plants. Livestock losses occur mainly when grazing after a period of drought or a series of frosts.

Fodder sorghum and Sudan grass varieties and hybrids that are not harvested for human consumption are



used in many parts of the world for livestock grazing, hay or silage. If you have planted one of these varieties, the following uses are recommended:

Hay: Hay should be stored for two or more months. During this time, it gradually loses all its toxic potential.

Silage: The silage procedure (part-drying, chopping and fermenting) will degrade the acid within 3 to 4 weeks.

Grazing on sorghum fodder:

- Graze only after the plants are 18 to 24 inches (50-60 cm) tall.
- Do not graze short regrowth forage following hay or silage harvest or following a period of close grazing. - Do not graze hungry livestock on sorghum or sorghum-Sudan grass hybrids. Poisoning potential increases with the amount of high-risk forage consumed.
- Do not graze during or after a drought, or if the plants show visible signs of moisture stress.

Farmers sell products via SMS

An information service company, M-Farm offers farmers an SMS-based solution for selling their produce.

John Kibor

Marketing of produce is a big challenge to many small-scale farmers. In most cases, markets are inaccessible, farmers have little produce that can only be sold at the local markets or brokers take advantage of farmer's gullibility to buy produce at throwaway prices.

For Raymond Churyai, an article on a local daily last year provided the much needed respite. He had been looking for a good market for honey harvested from his beehive in his Kapkagaon farm in Kilibwani Division, Nandi Central District. The article was about of M-Farm, a service that enables farmers to sell their produce using their mobile phones by sending an SMS to a short code. Three young women entrepreneurs; Jamila Abass who graduated from Morocco's Abdelmalek Essaadi's University in 2009 with a degree in Software Engineering, Susan Eve graduated from Strathmore University in 2010 with a degree in Business and Information technology while Linda Kwamboka is to graduate this year with the same degree. The three created the platform and also formed M-Farm Ltd, a software solution and agribusiness company. Through this company, they developed tools that deliver necessary information for Kenyan farmers, thereby helping farmers to improve their productivity and increase their incomes.

On reading the newspaper article, Raymond visited M-Farm's website where he got M-Farm's contacts. "I made a telephone call and had a long chat with Ms. Jamila Abass, who explained to me how the service works", says Raymond. "I wanted to be sure that this is not a hoax", he continues. "I made up my mind to give the service a try. I had 9 kgs of honey, which was not much but would

provide a good trial", he adds.

Price by text

M-Farm has been in service since February 2011 and since then the module that is widely used as the price information service runs on 3535. "The farmers rely on the system to get information on prices for their produce", says Linda Kwamboka, one of the developers of this marketing tool. The service enables farmers to get real time market price information, and so they don't have to deal with the shrewd middlemen. Through this, farmers can compare the prices of produce at various markets and make up their minds on where their produce will fetch the best price.

Raymond keyed in his price and waited. Three days later, a call came through that a buyer had been identified from M-Farm's database. The important thing to remember is that the farmer has to calculate the cost of transportation to determine the market that is likely to give the best price. Raymond was asked to send his produce through G4-S with the understanding that the honey had to be of good quality. He paid KSh 450 for sending the parcel to Nairobi. He sent the honey and after another 3 days, he received his payment of KSh 2,340 via M-PESA.

"I see a lot of potential in farming, that is why I have increased the number of bee hives on my farm to 37", says Raymond. He hopes to make good money by selling to buyers in Nairobi through M-Farm.

Buying together in bulk

With the growing popularity of this SMS service, the developers are adding two other components that allow farmers to come together and buy inputs in bulk. With higher volumes, farmers can buy in bulk, and transport costs are lower. In this component, farmers send SMS specifying the input needed, quantity and location. M-Farm identifies the companies that deal with the stated input. If the farmers like the offered price, they place an order. Farmers can also sell in bulk. Already, farmers in Kinangop are using the service.

For Jamila and her partners, their profit comes through the SMS which is charged KSh 10 as well as advertisement for farm input suppliers. They intend to grow the company to be the leading marketing service for farmers in the country.



High demand for the TOF modules

The 21 modules on various topics in organic agriculture contain all the basic information that farmers need to know. Interested farmers can send us Ksh 50/= in airtime for each module to the following mobile number 0717 444 405, or pay Ksh 700 for all modules, combined in a spring file. Please do not forget your full names and postal address.

Information on incubators

In the TOF issue of March 2011, we wrote about different kinds of egg incubators. Are you already using an incubator? We are seeking your views on the performance of the incubator you are using. A number of farmers have written to us asking us about this. Send us an SMS and we will call you back- TOF.

The right address

Hello TOF, here is David Smith. Thank you for publishing my letter on page 6 of TOF May 2011. Unfortunately, you gave an incorrect e-mail address. Here is the correct one: david.dihelp@gmail.com,

David Smith is a specialist in drip irrigation and can be consulted by farmers. Sorry, David!

Selling & buying

Tree seedlings for sale: We have over 10,000 tree seedlings mostly *Grevillea robusta* species in our tree Nursery which is located at Kamoro trading Centre 2km from Nairobi- Nyeri highway, contact 0721 610 387.

Seeds needed: I need the feeds of *Ginkgo biloba*, *Echinacea angustifolia* trees, and spirulina plant/algae. Mwangi Mithamo, farmer in Karia/Kerugoya, 0733 344 48

Cow wanted: Geoffrey Cheruiyot from Buret wants to buy a Friesian cow that produces over 15 litres of milk daily. Call 0726 530 955.

Rabbits wanted: I wish to buy rabbits, call 020 262 74 17

Goat wanted: Best quality in-calf dairy goats. Contact P. Miingi, 0723 775 056

Day-old chicks: I would like to buy chicks. Give price and location. Call Onyango, Nakuru 0720 477 786

To all dairy goat farmers: I need three Toggenburg goats for milk production. If you have any information, contact me on facebook. Anthony Muhia.

Chicken for Marsabit: We are interested in firms that breed indigenous poultry suitable for Marsabit area. We want to buy 300 indigenous chicken. 0710 668 316

How to use M-Farm

For subscription

SMS Format: sub Firstname Second-name Location and send to 3535. Example: "sub Raymond Churyai Eldoret".

For price inquiry

SMS Format: Price Crop Location and send to 3535. Example, Price Tomatoes Nairobi. The SMS is not case sensitive and crop name can either be in Kiswahili or English. You may for example write *Mahindi* instead of maize.

For more information on M-Farm, call Jamila Abass, 0712502130, jabass@mfarm.co.ke, www.mfarm.co.ke.