Dairy goats

If well-fed with a balanced diet and kept in clean shelters with sufficient space for exercises, dairy goats do well. Page 3.

Dear farmers

With this issue No. 95, The Organic Farmer magazine (TOF) is now eight years old. On average, about 240'000 farmers, extension workers and students read TOF monthly. The magazine was launched in April 2005 with a print run of 10,000 copies. Eight years on, we now print 30,000 copies every month, and the number of farmers’ groups keeps increasing in the waiting list. Every month, 30 new farmers’ groups apply to be put in our mailing list; we receive about 200 phone calls, SMS and mails asking for advice or seeking buyers and sellers.

TOF - Once again, farmers across the country are already planting various crops to take advantage of rains that have just started. Apart from growing food crops, one of the most important activities that farmers can engage in during the rainy season is the planting of trees. It is the responsibility of every farmer to ensure that their farms have new trees every year. One way to do this is to set aside a part of their farm where various trees can be planted for future use. Alternatively, trees can always be planted along our fences.

More than 80 per cent of Kenyans rely on trees for fuel wood, fruits, poles, fodder, stakes, leaves, pods, medicinal herbs, gums resins etc. Besides, the trees provide us with the rain to grow crops, help to sustain water supply, reduce soil erosion, strengthen terraces, mark our boundaries, provide shade and also create a healthy environment for us and even other livings things to live in. That is why we should plant more trees at every opportunity in order to improve our environment.

Availability of seedlings is not a problem: In all regions, farmers’ groups and individual farmers maintain tree nurseries.

Plant trees for our environment

How farmers use TOF magazine

In the next few months, we shall feature some farmers’ groups and individual farmers who have been reading The Organic Farmer magazine since its launch in April 2005. What did they learn? Did they put the knowledge into practice? This will help evaluate how farmers utilize the information we give through this magazine. In this issue, we feature Gladys Nyambura, who picked up the idea of growing mushrooms. Page 6.

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Fish farming profitable 8

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theorganicfarmer.org
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TOF partners on the web
biovision.ch
infonet-biovision.org
icipe.org

icipe starts organic honey production

TOF - Intervention by icipe has improved beekeeping for members of the Mwingi District Beekeepers Self Help Group (CBO), and the entire Ukambani community. Organic honey production in Mwingi alone has increased from 2.5 tonnes in 2002 to 54 tonnes in 2011. The overall household income has increased by 15% over the same period. Pages 4 & 5.

Sunflower for animal feed Page 2

Editors
Sunflower is a good source of animal feed

Sunflower provides high quality feed for livestock, it also produces healthy oil for people.

Peter Kamau | Most dairy farmers may not know the value of sunflower as feed for dairy cows and even chickens. The main source of feed for dairy cows is Napier grass, maize stalks and the little dairy meal concentrates bought from agro-veterinary shops. However, giving your animals feed that is balanced both in nutrients and in adequate quantities will ensure good milk production all year round.

Making your own feeds not only cuts the cost of buying, it also ensures a farmer has good quality feed. The quality of feeds in the market is not assured, nowadays millers have devised ways of constituting poor quality feeds which are then sold to unsuspecting farmers. Beekeepers growing sunflower have an added advantage of high quality honey because bees collect pollen from sunflower while pollinating them.

A good source of proteins
Sunflower meal is one of the major protein sources in livestock feed, especially dairy cattle, chickens and even pigs and rabbits. It has a high protein, fibre and oil content. It has a protein content of between 29-30% and a crude fibre content of 27-31% and lignin (9-12%) and lysine (3.5%). One characteristic of sunflower is that it does not have any ingredients that affect nutrition in livestock, although its high fibre and lignin (the hard, woody part of the sunflower plant) tend to affect its digestibility. Besides, sunflower is a good source of calcium, phosphorous and B vitamins.

Apart from dairy cows, sunflower can be fed to rabbits, pigs and chickens. The quality of sunflower fed to livestock depends on the way it has been processed. For example sunflower that is milled without removing the outer cover (also called husk or hull) has high fibre (between 27-31%) but low protein content (about 23%); but in highly processed sunflower where the husks are completely extracted, protein content can be as high as 40%.

Sunflower can replace other feed sources
Dairy cows produce more milk when fed on sunflower meal that is partially or fully dehulled. For rabbits, pigs and poultry, a sunflower meal that is high on fibre and lignin would be suitable since they require feed with less energy. But what farmers need to know is that sunflower is still nutritious even when fed to animals without much processing. Sunflower can be substituted with soya beans or even ground nuts but farmers are advised to take a sample of the sunflower feed for analysis to ensure it has the right balance of fibre and proteins.

Sunflower recommended
According to studies conducted in Tanzania, sunflower added to maize bran at the rate of 31% and fed to Zebu cross-bred dairy cows increased milk yield from 6.6 litres per day to 8.1 litres per day.

In Zimbabwe, sunflower cake added to maize and urea-treated maize stalks at the rate of 4.4kg per day in Jersey, Red Dane and cross-bred dairy cows in open pasture, increased milk yield from an average of 5.8-6.0kg per day. In similar studies in UK, sunflower meal supplemented with fish and bone meal maintained the same amount of milk in Friesian dairy cows when it was replaced with soybean and rapeseed meal.

How to prepare animal feed
Sunflower cake is a rich source of protein and can make quality livestock feed for animals on the farm instead of buying expensive commercial feed whose quality is unknown. 3.5kg of sunflower, when pressed and milled, produce 1 litre of oil and 2.5kg of seed cake.

Dairy cattle rations
• Mix 18kg of sunflower cake with 100kg of maize germ to make dairy meal.
• Give a highly productive dairy cow 4kg of the sunflower and maize germ dairy meal and 2kg to low milk producing cows.
• Apart from feeding concentrates, dairy cows should be given their daily ration of Napier grass, hay or any other available good quality fodder to their satisfaction.

Ration for chickens
Chickens starter: Mix 22kg of sunflower cake with 100kg of maize germ.
Growers’ mash: Mix 20kg of sunflower cake with 100 kg of crushed maize (gristed maize or chenga)
Layers mash: Mix 18kg of sunflower cake with 100kg of gristed maize.

NOTE: When formulating feed for dairy cows, farmers should ensure the sunflower content is not more than 20% of the feed ration. In poultry feed, the sunflower content should not be more than 7% of the total feed ration.

Read more on how to plant sunflower on page 4.
Feed your dairy goats well to be productive

Apart from clean housing and sufficient space, dairy goats require a balanced diet to remain healthy.

Maurice Rangoma | Dairy goats are popular with many small-scale farmers; the main reason being that unlike dairy cows, they are easy to feed and do not require a lot of space to rear. However, most farmers with dairy goats do not manage them well, so they cannot be healthy and productive enough to give good returns in terms of milk and meat. Like all other animals, goats require a balanced diet that has all the required nutrients such as proteins, carbohydrates (energy) and vitamins to maintain a good body condition. Below we give some important information on goat feeding which should help farmers to keep highly productive dairy goats.

Space for a run

In formulating a ration for dairy goats, it is important to note the best way to feed goats and that the rations will be presented before mating to improve the animals are mated, flushing is introduced during pregnancy. During the first phase (1 month) the foetus changes slightly. If protein in the feed is low, feed intake will be low resulting in protein deficiency. Protein requirements are not high but deficiency can be detrimental to the foetus.

Third Phase (3–5 months) or late pregnancy is the most critical stage of the foetus development. Although the feed intake is low quality feeding is needed to meet the requirements of the animal. Underfeeding will result in low birth weight, low production of colostrum and reduction in milk production.

Steaming up is done during the last 60 days of pregnancy. This is important for building stores for use in early lactation. Feed up to 400–500 grams per day of concentrates.

Feeding for lactation

Protein is required at around 56g digestible crude protein per day for milk synthesis. Energy is the most sensitive nutrient and is required in the diet which should be balanced. Minerals especially calcium and phosphorous must be in the ration in larger amounts than other minerals. Most diets have enough of vitamins A and D. In the next issue, we will write about feeding goat kids.

**Good feeding enhances the fertility of dairy goats**

Good feeding is important as it determines the state of animal at maturity, lifetime production, age at maturity and fertility of the animal. Before animals are mated, flushing is done. About 0.5kg daily meal is given daily for 2 weeks before mating to improve the body condition. After successful mating, adequate feed should be given to avoid embryonic wastage such as abortion.

For female goats, the aim is to attain the earliest age at first mating. About 7 to 9 months is ideal. At this time, the females should be 60% of their mature weight. This will enable milk production by the age of one year.

Provide concentrates 300–400 grams per day when they are 3–4 months old. At 6–7 months of age when mating time is approaching feed at about 100–200g per day to trim down over fattening during mating.

Feeding bucks

Increase feed by 15–20% during mating. Start introducing concentrates 6–7 weeks before mating at a rate of 200–300g per day. This diet should be continued up to the 6th or 7th week after mating.

Feeding during pregnancy

During the first phase (1 month) the foetus (unborn kid) grows undisturbed. Just feed slightly above maintenance. The second phase (2–3 months) is also called mid-pregnancy. The foetal changes slightly. If protein in the feed is low, feed intake will be low resulting in protein deficiency. Protein requirements are not high but deficiency can be detrimental to the foetus.

Minerals

- Maclick super
- Unga high phosphorous (powder 20 g per day)

Water: At least 8 litres of clean water per day.

A sample ration

Dairy goats rations are formulated from roughages mainly sourced from forages, water, minerals and concentrates. They should be fed according to body weight and physiological requirements. Dry matter amount is critical in feeding dairy goats. The dry matter requirement is 6% of the body weight.

A goat weighing 30 kg will require 1.8 kg of dry matter. Here is an example of an ideal daily ration for dairy goat:

- 5 kg of Napier
- 0.5 kg sweet potato vines
- 0.7 kg of callandra
- 0.5 kg of desmodium
- 40 g of very high phosphorous
- 8 litres of clean water

**facts & figures**

- A good quality dairy goat costs Ksh 10,000 to 15,000 or even more. An important address for dairy goat farmers: The Dairy Goats Association of Kenya (DGAK) P.O. BOX 1218, Nyeri, dgak@wananchi.com, 061 203 10 19
- On average, a dairy goat produces between 2 and 4 litres of milk per day.

Goats require clean housing to remain healthy and productive.
How to grow sunflower

Climatic requirements: Sunflower can do well in a wide range of soils but it does best in fertile, loamy soils. The plant has a deep taproot, which makes it grow even in areas with very little amount of rainfall. An average of 500-750mm of rainfall is adequate for sunflower production. It can be grown from sea level to an altitude of 2600 metres above sea level.

Land preparation: The land should be well tilled to form a firm seedbed.

Spacing: Seeds can be planted at a spacing of 75cm by 30cm at the rate of 2kg per acre (5kg/hectare). Plant 3 seeds per hill and thin to 1 plant per hill when the crop is 10-20cm high.

Fertilizer application: Sunflower does well in fertile soils. Application of rock phosphate would be appropriate because sunflower requires sufficient phosphate fertilizer to grow well. Application of well-prepared compost would provide additional nutrients to the soil. If rock phosphate is used, it is important to add humic acid from products such as Humax or Black Majik because rock phosphate is a slow release fertilizer that requires humic acid to hasten its breakdown and uptake by the plants.

Weeding: Sunflower does well in a weed free environment. Weed the crop when it is 0.7 metres high (after about 4 weeks). The crop cover prevents weed regeneration later.

Birds’ damage: Birds can damage up to 50% of sunflower if they are not kept away through scaring. To prevent bird damage farmers can take the following measures:
- Cut the sunflower at knee height just before it dries completely. Cut off the head (capitulum). Spike the head on the standing stem with face downwards.
- Remove the sunflower head after drying and store at home.
- Threshing can be done at home using sticks and sunflower seeds stored.
- Sunflower seeds should be dried to 10% moisture content before storage.

Varieties
There are two main varieties of sunflower, the dwarf and the tall varieties. The tall varieties are open pollinated and grow up to a height of 1.5–2.4m. Their yield is poor compared to hybrids. Some of the tall varieties in Kenya are Hungarian white and Kenya Fedha. Dwarf varieties are hybrids and grow to a height of 1.2m, they give a higher yield compared to tall varieties. The most common dwarf variety is H 8998. Farmers can buy seeds for planting from agroveteriary shops or the Kenya Seed Company depots.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Maturity</th>
<th>Yield/acre</th>
<th>Oil content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hybrid 898</td>
<td>130 days</td>
<td>1.25 tons</td>
<td>Very high</td>
</tr>
<tr>
<td>Hybrid 8998</td>
<td>120 days</td>
<td>1.25 tons</td>
<td>High</td>
</tr>
<tr>
<td>K. Fedha</td>
<td>130 days</td>
<td>1.25 tons</td>
<td>High</td>
</tr>
<tr>
<td>K. Shaba</td>
<td>130 days</td>
<td>1.25 tons</td>
<td>High</td>
</tr>
<tr>
<td>Hungarian white</td>
<td>170 days</td>
<td>500 kg</td>
<td>Low</td>
</tr>
</tbody>
</table>

NOTE: 1kg of sunflower seeds costs Ksh 250. You require 2kg of sunflower seed to plant one acre.

Internal Control System (ICS)

To ensure that farmers’ groups maintain organic standards, an Internal Control System (ICS) is put in place in all farmers’ groups that undergo organic certification. The ICS is a system that guards the integrity and organic quality of items produced by contracted farmers. All persons dealing with the product are identified, registered, instructed on the requirements of organic certification and then contracted to start production.

A social control system
Each member in a group that has undergone training and organic certification has to ensure that other members of the group abide by the standards of organic production in the entire value chain (production, harvesting, transportation, processing, packaging and storage) putting in place a certain degree of social control.

Expulsion for non-compliance
In beekeeping, any member who is found violating the set standards by a fellow member, e.g. by using synthetic inputs or chemicals in beekeeping is expelled from the project and their contracts cancelled by the Mwingi CBO, meaning that they cannot sell their products as organic. Members who contravene the rules by mistake are suspended for one year.

Groups undergoing certification cannot sell their products as organic immediately; they have to undergo a conversion period of between one to three years. For Mwingi beekeepers, the conversion period is usually one year since their honey is produced in a natural environment, devoid of pollutants.

Peter Kamau

Beekeeping for honey production is a traditional economic activity of the people of Mwingi district in larger Kitui county, a semi-desert region in Eastern province that is prone to periodic drought and famine.

Traditional beekeeping that mainly relied on log hives hewn from valuable trees was not sustainable. Apart from the use of log hives, the traditional honey harvesting methods used by beekeepers involved burning of bees, destruction and wastage of honey combs and unhygienic handling, transport and storage of honey.

More money from honey
Icipe has concentrated on beekeeping for honey production and harvesting of wild silk for production of high quality silk for the textile industry.
For beekeepers in Mwingi, the project was a godsend. “1kg of honey was going for as little as Ksh 50. Sometimes, the middlemen would come for honey when they knew we were about to send children to school; then they would offer to pay even less than the Ksh 50. We would have no alternative but to sell them the honey,” laments Sabina Mutamboki, a member of the Mwingi Beekeepers Self Help Group.

More women go into beekeeping

The project is working to promote modern beekeeping methods among farmers in the region. On average, one beekeeper produces about 300kg of honey in a good season, a kilogramme of processed honey currently goes for Ksh 500. The involvement of more women in beekeeping is a key achievement for the Mwingi honey project.

To enable the farmers increase honey production and its quality, icipe has introduced modern bee hives such as the langstroth while the Ministry of Agriculture supplied the beekeepers with Kenya Top Bar Hives (KTBH). The modern beehives have increased both the quantity and quality of honey produced. The farmers have also started rearing stingless bees near their homesteads.

Farmers now produce organic honey

The farmers were encouraged to form groups, which were later trained in modern methods of beekeeping. From the 6 beekeeping groups that existed before icipe came to the region, there are now 54 farmers groups with a total of 2,500 farmers. There is no widespread use of chemicals in farming in the Kitui county. It was therefore easy for the project to help farmers convert into organic honey production after training.

Through the Kenya Association of Organic Network (KOAN), the CBO was awarded an organic certificate by the Institute of Marketology (IMO) of Switzerland in 2009. Mwingi honey has a unique taste; the honey scooped the top Prize at the Organic Trade Fair held in Germany in 2009.

Bees increase crop productivity

Intervention by icipe has shaped beekeeping to the benefits of Mwingi District Beekeepers Self Help Group (CBO), and the entire Ukambani community. Honey Production in Mwingi alone has increased from 2.5 tonnes in 2002 to 54 tonnes in 2011. Farmers with hives close to the their farms have benefited from bees through pollination of their agricultural crops. In this regard research has shown that crop productivity has increased by 10-18 per cent. The overall household income has increased by 15% over the same period. More than 300 farmers, mainly women, managed to produce over 1000 tonnes of honey worth USD 15,000 (Ksh 1,290,000) between 2007 and 2011.

The Ministry of Livestock Development has donated land where the CBO has a honey processing facility as well as a marketing outlet. Buyers from Nairobi and other regions now buy honey from the CBO’s shop. Weaving of silk cocoons is also done at the centre. The icipe Commercial Insects Programme has received support from the International Fund for Agricultural Development (IFAD), UNDP-GEF, Toyota Foundation and British High Commission among many other donors.

"Beekeeping has changed my life"

Joshua Munywoki Kimwele has engaged in beekeeping for the last 20 years. He used to own 20 traditional beehives from which he would harvest about 100kg of honey in a year. He would then sell the honey to middlemen at Ksh 50 per kilogramme. But his fortunes changed drastically in the year 2000 when icipe’s beekeeping project came to his area and trained him and members of Kassanga Beekeepers Group, the majority of whom are women, on modern beekeeping.

Benefits from beekeeping

Kimwele says he has managed to pay fees for his children. He has also built a permanent house, increased his cattle herd and built an apiary. He now plans to buy a machine for making comb starters because bees take a shorter period to produce honey if the hives already have comb starters.
Gladys Nyambura is not always happy with TOF

Reading TOF since the launch in April 2005, Gladys Nyambura appreciates the magazine, “but TOF should fight more for better prices of commodities.”

Philomena Nyagilo | When Gladys Nyambura read the first issue of The Organic Farmer magazine in April 2005, she realized that the content was familiar. “I never used chemicals against pests and diseases, and I improved the soil in my shamba with compost, green manure and crop rotation,” she says. “I did it because I wanted to eat healthy food. I had just started farming, so it was encouraging for me to read more about sustainable agriculture in TOF - and I still read it up to now,” she says.

Nyambura lives on her 1.5 acres shamba in Kabete. A holder of a Bachelors degree in science from the University of Nairobi, she had been a teacher for 10 years but resigned and decided to become a farmer. “Farming is a risky business,” she says. “It is related to natural calamities such as drought and floods, high fluctuation in the prices of input, exploitation by middle-men, and so on.”

“I learnt mushroom farming from TOF”

After reading an article in TOF about mushroom farming, she decided to go into this business. Today, it is her main source of income. Every month, she sells 100kg of mushrooms at Ksh 500 per kilogram. “I could get Ksh 1,000, if I had two or three regular customers or hotels or shops to sell to. But they want a constant delivery. So I do not have any other option but to sell to brokers who pay much less,” Nyambura explains. “So, when I complain about exploitation by middlemen, I know what I am talking about. If the broker is benefitting more than the farmer, something is wrong, for sure!” That is a reason why she is setting up a second mushroom production unit to produce regularly to meet the demand of her customers.

In her shamba, Nyambura does not use any chemicals. She is convinced that farming without using chemicals is possible, but needs more labour. “Unfortunately, nobody is willing to pay for these additional costs,” she says. She criticizes the developed countries, because they ban certain chemicals, but allow the export of the same chemicals for use in the third world countries. “Of course, it would be the task of our government to ban the importation of these chemicals, but our government is not interested in hazards brought by such chemicals, because some influential people are engaged in their importation.”

“TOF should inform more”

However, it should be up to the farmer to decide which way they want to go. “I prefer to buy non-chemicals, even if they are more expensive,” she says. In this regard, Nyambura says that TOF should do more research. “You should provide other solutions if what you promote does not work. Let me give an example: I have tried neem, as you have proposed, but it did not work. So I had to look around by myself for another solution. This should be your responsibility to give us alternatives, if you are really committed!”

According to her, TOF may not be aware that many small-scale farms are managed by women, who do not have time to make plant extracts, due to the time-consuming procedures involved. The extracts do not act immediately. “Some small-scale farmers have the money for buying the organic inputs which are in the market, unfortunately they do not know the exact product to ask for. So it would be of great benefit if TOF would mention them!”

“Fight for higher prices”

TOF should as well fight for higher income for farmers! The price farmers are getting for their products are too low,” she states. “In the long term, this will become a problem,” she adds, “if you look around, you hardly find young farmers, they prefer to work in towns where they can get a stable income. Even if it is low, for them it is better than the hard work on the shamba! They would come back to their shambas if they really could earn an income that is sufficient to sustain their families.”

She sees the same problem in credit facilities. “Women are neglected, it is easier for men to get credit, even though everybody knows that they are not as reliable as women in terms of repayment. Men expect free money!”

From her point of view, the government should do much more for women farmers, and she continues with a smile: “Even TOF should write more about these problems!”

On the other hand, farmers should plan carefully. She sold her cow because she didn’t have a farmhand to take care of it; this was too expensive for her. Having sold the cow, she decided to buy a dairy goat, which gives her enough milk, she has an additional five meat goats for sale.

Let’s cook mushrooms!

- Slice mushrooms into thin stripes including the stem (the stem is rich in fibre).
- Fry your onion or garlic and capsicum, dhania, tomato, etc. with oil, preferably corn oil (which has no cholesterol)
- Fry the onion until brown.
- Put your sliced mushrooms into the fried onion.
- Continue stirring until the mushrooms are brown in colour. Do not add water. If you need soup, add milk to the mushrooms instead.
- Serve with ugali, chapati or rice.
Water conservation is key to dry land farming

We appreciate TOF very much and have been reading the magazine for many years. Unfortunately, you rarely bring information on farming in semi-arid areas like Kitui. I really would like to know how to keep the soil moist. Joshua Musyoka, Kitui

Joshua, you are right. Frankly speaking, it is very hard to give advice to farmers in regions where there is lack of the most important resource in farming: water. There is as well, lack of information and limited research on crops that do well in dry areas. Kenya, like most other countries with a combination of highlands and arid areas has concentrated on the highlands with high rainfall because this is likely to give the quickest and most cost-effective return. According to FAO, there is lack of interest, low research commitment and the complexities of challenges results in a shortage of technology that can be applied to improve agriculture in semi-arid regions.

The building of dams, securing water catchments and supplying farmers with drip irrigation systems could assist the farming community in semi-arid areas. Unfortunately, we are not able to influence this, but in the coming months, TOF will publish articles targeted at farmers in semi-arid areas like Kitui.

How to keep the soil moist
Where rain is not sufficient, farming strategy must be directed towards minimizing any loss or wastage of rainfall. If the soil surface is hard and crusty, the rates of infiltration are low, leading to high run-off and hence less utilization of the rainfall. Surface crustings may hinder the emergence of seedlings. Deep cracking of soils can lead to increased loss of moisture by evaporation, and to cultivation problems.

This means that the soil should be covered as much as possible, with mulch, compost, grass and even crop residue. However, farmers are in a dilemma: They need crop residue such as maize stalks for use as animal fodder or for making compost. But covering the soil is the only way they can reduce soil erosion and evaporation.

Using planting pits
Another way of growing crops such as maize, sorghum or Napier grass is the tumbukiza method. In this method, you dig a hole (60cm x 60cm x 60cm deep), fill it with composted manure and top soil to 40 cm. Plant the seeds and cover the hole with grass or any other kind of mulch.

Of course, digging the holes requires some labour input and is hard work in areas with dry soil, but at the end, it pays off: The moisture remains longer in the soil, and when it rains, the water remains in the hole. During the dry season, you can water the holes once per week to keep the crops from drying. Tumbikiza method can also be done by use of trenches instead of pits, trenches give more food and fodder.

Plant early
There are two other basic requirements for good crop production: Early planting is one of them; the other one is choosing fast maturing varieties. KARI/Katumani has developed maize, beans and sorghum varieties, which take three months to mature. The harvest from these varieties might be a little bit less when there is drought, but you can still get some food.

Where can I take a sample of my soil to be tested?

You need to take several soil samples from the affected parcel. To do this, select four or even six spots in the farm; from each spot, dig about a half-foot deep hole and take a little of the top soil and also the sub soil and mix them well. Go to the other spots and do the same, ensuring that the soil is well mixed. Finally, mix all the samples into one sample weighing about a half or one kilogramme. Put the soil in a paper bag, ready for test in a soil laboratory. Most KARI research centres in the country have soil test facilities. If you cannot get a KARI centre near you with these facilities you can send your soil sample to the KARI National Agricultural Laboratories (KARI-NARL) along Waiyaki way in Nairobi whose address is given below:

KARI-NARL, P.O. BOX 14733- 00800, Tel 020 4443 376, 020 4444 144 ext. 264, 0722 539 273

Do I need to vaccinate my chickens?

In one of your previous magazines you wrote that the sap of aloe vera keeps chickens in good condition and free from diseases. Does this mean that I do not need to vaccinate them?

We may not say yes or no, but it depends on the conditions under which the birds are kept. We know some farmers who never vaccinate their chickens. However, they keep the poultry house and the chicken run clean; they use neem, diatomite and pyrethrum to fight mites, fleas and other pests. These help to keep chickens free of diseases.

Controlling diseases
Experienced farmers feed their chickens with green vegetables (hanging bundles of Suku-mawiki in the chicken run where the birds can pick and eat the leaves). They also supply the chickens with water twice a day containing some drops of aloe vera sap and EM1. They also add vinegar once every week to the water to control bloody stool symptoms (at a dosage of half a cup of vinegar for 5 litres of water). When they buy new chicks, they separate them from the rest of the flock to ensure they do not infect the flock with diseases.

You can try this method. Isolate some day-old chicks. It is just as important that you take care of them and that you observe them carefully. On the other hand, vaccines are not so expensive; losing a flock may cost you much more. We advise you to consult an experienced veterinary officer as well for more information.

The most important vaccinations
Marek disease: This vaccination is usually administered to young chicks in the hatchery.

Newcastle disease: Usually applied at 2 to 3 weeks, at 18 weeks, then after every 6 months.

Fowl typhoid / Fowlpox: Administer at 8 weeks in high-risk areas and at 18th week in low risk areas.

Gumboro disease: Usually applied in drinking water at 4th and the 14th day.
Discover value of information

Hesbon Angarika has improved his income through fish farming.

Dominique Jaquemet | After reading an article in The Organic Farmer magazine, Hesbon Sawia Angarika in Lyiaduwa, Vihiga District, realised that his farm was suitable for fish farming and decided to build a fish pond. A permanent river that passes next to his farm turned out to be a great asset.

Before he started to do fish farming, Angarika wanted to know more about fish farming than he had read in TOF. He visited the local Farmers Resource Centre, where he accessed information from the InforNet-Biovision website and other sources about investment costs, fish management and potential markets, where he could sell the fish.

With the help of his neighbours, Angarika constructed a pond measuring 15 x 30 metres. It is fed with water through a small channel from the river. The base of the pond is lined with lime and ash to prevent water seepage as recommended.

Fish management
He bought about 1000 tilapia and 30 mudfish fingerlings to stock the pond. One fish fingerling costs Ksh 3. To feed the fish he buys fish feed in town. 1kg of feed costs Ksh 40. He feeds the fish daily at the same time, in the morning at 10 am and in the afternoon at 5 pm. During the first three months, he gives the fish 1kg of food per day; in the fourth and fifth month he increases this to 3kg and after 5th month he feeds them 4kg per day. In addition, he also gives them greens such as the gallant soldier weed.

At around 8 months, he harvests about 800 fish. He sells one kilogram at the local market for Ksh 150. Before he restocks the pond with young fish, he clears the pond and lines its base with lime and ash to waterproof it. As a pioneer fish farmer in his village, he has become the chairman of a fish farmers group that has 18 members.

Reinvestment into farm
With the first earnings from his fish farm, he bought a pig and a heifer. With the income from the second harvest, he rented an additional plot to grow fodder for his cows. He admits that he has not been able to feed them properly. He hopes that with proper feeding, they will start to provide him with adequate milk for domestic use and sale. He has further diversified and also grows local vegetable such as terere (amaranthus) and some tissue bananas. He intercrops maize with soya beans, which has improved his maize yield and solved the problem of striga weed.

"High yield and good income"

"There is renewed interest in fish farming in Kenya. Farmers in suitable areas across the country are again turning to fish farming as a way of producing high quality food, either for their families or for the market, and as a way of earning extra income."


Dairy cows wanted: Any one selling good dairy cows for zero grazing, preferably in South rift? Quote price and your farm location. Please contact Benard Kidew

Fertilised eggs wanted: I would like to buy 2 trays of fertilised eggs, preferably Kenbro or layers. I stay in Nairobi Area. Please contact Robert Muraya.

Potatoes for sale: Kisima Farm has certified potato seed. We offer the 'Best of the Best' seed potatoes at competitive prices. Please contact John Kibet on 0721 325 269.

Dried sukumawiki for sale: If you need dried sukumawiki well packed in polythene paper please contact Candy Obigum on 0725 690 778.

Rabbits and leeks for sale: I have rabbits and leeks for sale. Please contact Kui Seniori.

Beans for sale: Please contact Buoga Jared Omondi.

Milkings machine wanted: If someone has information about where I can get a one bucket milking machine and cost, please contact Basigwa Moses.

Land wanted: I need 5 acres of land for one year lease near Eldoret, Soy or Nzoia Scheme, please contact Erick Ngosia.

Fertilised eggs, indigenous chickens wanted: I am looking for someone who can supply Kenbro fertilised eggs, preferably about 400 or more every week. I also require improved indigenous chicken from KARI. Please contact Alexander Alex on 0721 747 719.

Dairy goats for sale: Please contact Allan Kango.

Rabbits wanted: I need 3, four month old rabbits (1 male and 2 females), which should be unrelated. Please contact Kelvin Kamoni on 0710 821 117.

Kienyeji eggs wanted: If you can deliver 50 trays of Kienyeji eggs daily, please contact Winnie Ruto on 0786 583 153.

Mango seedlings wanted: I need grafted mango seedlings. Please contact Favoured Estar Mukoya.

Seeds for sale: Kuviwa Welfare S.H.G located at Kutus has Moranga oleifera seedlings at their tree nursery for sale, please contact the chairman on 0724 869 376.

Sweet yellow passion fruits for sale: Please contact Mugu Kaniu on 0722 794 144.

Aloe vera extract wanted: Please contact Rhoda on 0720 113 412.

Broilers for sale: We are selling mature broilers at Ksh 750 per bird, interested buyers can contact Catherine Liumben on 0728 859 116.

Indigenous seedlings for sale: Cypress, grevillea, casarina, pine, Kei apple and others. Interested buyers can contact David Ambani on 0727 003 932.

Ayshire dam and bulling heifer for sale: The dam peaks at 30kgs/day three months after calving. It is pregnant. The breed is from the reputable Sanctuary farm, Naivasha and is registered with Kenya Stud Book (KSB). The heifer is an offspring of Sabaki (CAIS). The price is Ksh 250,000. Please contact Maurice Onyango on alegosiaya@gmail.com or 0723 585 907.

Rice for sale: Anyone in need of retail or wholesale supply of Mwea Pishori Rice, get the best bargains from Ebullient Supplies Ltd. Wholesale at Ksh 120; Retail at Ksh 135. Contact Debbie on 0725 913 349 or Wycliffe on 0723 669 189.

Chickens: Our poultry farm deals with dual-purpose chickens like Dorep, Kenbro and our hybrid kienyeji named 'taste yangu'. We sell their chicks as well as their chicken meat, call Fundi Wycliffe on 0720 046 770 or Wycliffe on 0723 669 189.

Chicks for sale: We have chicks of various chicken breeds for sale to interested farmers. Dascos Enterprises on 0719 808 222.