

Dear farmer,

Keeping farmers informed about good organic farming practices has been our pleasure and we always look for ways to improve on this. Consequently, in January this year, we partnered with Smart Farmer Africa Ltd, a renowned organisation in agricultural information dissemination, to give your favourite magazine a new, easy to read look. We hope you like it and welcome your feedback and suggestions about it.

The February edition gives you tips on planting maize and lists available seed varieties for different regions.

Learn about planting basins, a technique helping farmers get good yields, even when faced with unpredictable rainfall.

Learn how to layer your compost pit, and discover water harvesting methods that can ensure you have water all year round.

New castle and Foot and Mouth disease cause countless losses to farmers. Find out how to protect your animals against them.

Finally, read about a tsetse fly repellent collar from Icipe that has helped farmers countrywide deal with tsetse fly infestations.

Enjoy the edition and get solutions to the challenges that stifle productivity on your farm.

From the editor



What you need to consider before planting your maize

Good land preparation must be accompanied by good seeds to get good harvests. There are many fake seeds on offer, especially at the peak of the planting season

By Clifford Akumu

The planting season is here and excitement is building up. This is a hopeful time for farmers, especially now that rapid population growth is piling up pressure on the available food by the day. Although erratic rains are still being observed in some parts of the country and farmers are worried because of the desert locust invasion, land preparation for quick-maturing crops in readiness for the main crop-growing season is going on.

Good land preparation must be accompanied by good seeds to get good harvests. There are many fake seeds on offer, especially at the peak of the planting season.

Therefore, you must be careful when buying seed. Here are vital tips:

- Buy seeds from recognised dealers, especially those certified by the Kenya Plant Health

Inspectorate Service (Kephis);

- Check the expiry dates on the labels and for inspection labels from the relevant bodies such as Kephis, to make sure the seed is genuine;
- Keep the seeds in a cool dry place;
- Crops also fail if they are planted in the wrong regions. Choose seed varieties that are suited to your region, since they are developed for different altitudes, rainfall, type of soil, temperature and other climatic conditions;
- Use short season varieties in dry areas and long-season varieties if you are in high rainfall areas or able to access water for irrigation;
- Plant preferably two weeks before the rains in the lowlands. Maize planted after the rains have started do not germinate well, as soil temperature tends to go down as the rain;
- During planting, space your maize correctly. However, good management of maize throughout the production phases is vital.

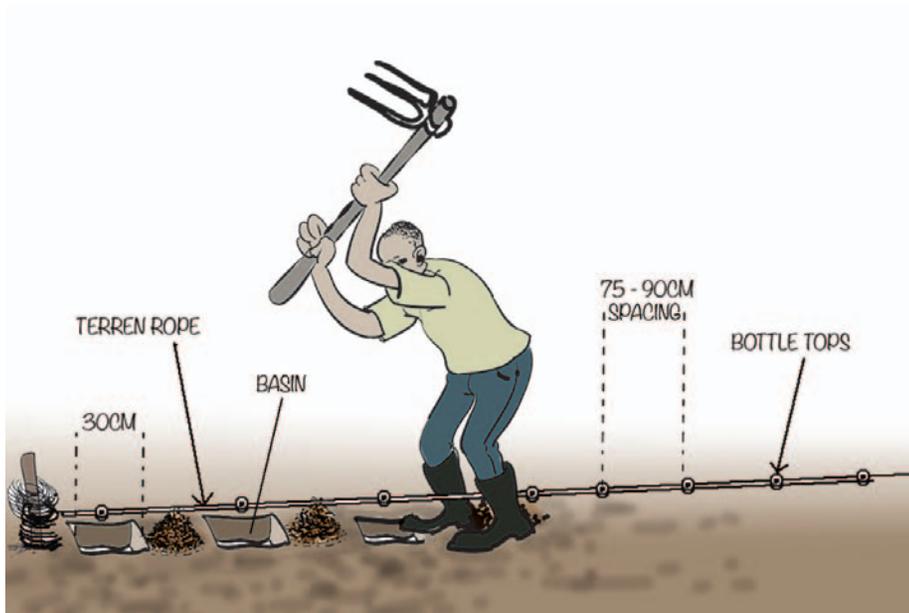
Below are maize varieties available for different ecological zones in the market.

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Managing the deadly Newcastle disease (NCD) in poultry

NCD is caused by a virus known as Paramyxovirus and spreads quickly, killing many birds in a short time Pg. 7



Planting crops using grid basins saves water and increases productivity

CSA-CA is a production system that reduces costs, maintains soil fertility, and conserves water, while producing high crop yields

By Charles Kimani and Simon Mwinzi

With the rapidly changing climatic patterns, receding water levels and decreasing fertility in soils, establishing techniques that will promote sustainable farming and prevent continued loss of arable land is critical. Climate Smart Agriculture-Conservation Agriculture (CSA-CA) is a production system that reduces costs, maintains soil fertility, and conserves water, while producing high crop yields.

It has three basic principles:

1. *Disturb the soil as little as possible;*
2. *Keep the soil covered as much as possible for residue retention;*
3. *Crop rotation*

Establishment of plant basins for Climate Smart Agriculture (CSA-CA)

Use of planting basins can enable farmers to achieve optimum plant

density and apply the precise amount of inputs. Dig the basins out during the dry season in readiness for the first rains. As much as possible, retain residues from the previous crop.

These help in reducing wind and water erosion. They also suppress weeds and contribute to the build up of soil organic matter. Clear the weeds using a weeding tool with light teeth that flicks out shallow rooted weeds without injuring the crops.

Requirements:

- *Hoe - preferably 12-15 cm wide;*
- *Nylon or sisal string;*
- *Bottle tops for making Terren rope and measuring manure;*
- *Bic biro;*
- *Stakes for attaching the rope to;*
- *75 cm or 90 cm sticks to measure distance between rows.*

The process:

Making the Terren Rope: After harvesting, measure your land using a Terren rope to calculate the amount of inputs that you will require. A Terren rope is a string about the length of your field, marked at intervals of 75cm or 90cm (depending on your location) by clamping bottle tops on to it, at the required spacing. Measure the distance

between each bottle top using a 15cm long Bic Biro.

Marking basin positions: Using the rope, mark out the positions of the planting basins. Attach one end of the rope to a strong wooden peg and push it into the ground at the top corner of the field. Making sure that you go across the slope (and not up and down the slope) stretch the rope across the field and fix it in place by tying it to another wooden peg that is firmly pushed into the ground. The rope should be in a straight line. Dig the first basin beginning at the first bottle top and work backwards along the length of the rope.

Digging the basins: They should be rectangular, 30cm long, 15cm wide and 15cm deep (about as deep as your hand), so as to break through the “hard pan”.

Place the soil that you have dug out between your legs and use it to backfill the basin after applying manure or compost. Work backwards along the length of the rope to avoid treading on the basin you have just prepared.

Once the first basin has been completed, move on to the next until a basin has been prepared at each bottle top along the length of the rope. At the end of the row, move the pegs using the measuring sticks to ensure the spacing between rows is correct and that it is parallel to the first row.

Adding manure and lime: Partially backfill the basins with soil up to about 5cm (or 2 inches) from the rim of the basin. Put one to two handfuls of manure or compost into each basin, which amounts to three or four tonnes of manure per hectare.

Cover with a layer of soil. Backfilling can be done in advance of expected rains so that they are ready to plant with the first rains. If your soil is acidic, apply lime to reduce acidity.

Planting: Plant at the onset of the rains. Evenly distribute the seed (maize, sorghum, bean, etc) in the basins. Plant three maize seeds or 8-10 bean seeds or 6-8 seeds of cowpeas or green grams or 10-12 sorghum seeds per basin.

Cover the seed with 2.5cm – 3cm of soil so that the final soil level is approximately 2cm – 2.5cm below the rim of the basin. This will encourage rainwater to flow into and remain in the basin.

Dig the basins out during the dry season in readiness for the first rains. As much as possible, retain residues from the previous crop.



Maize planting

Continued from page 1

High altitude varieties (Rainfall 1000 – 1500 mm, Altitude 1700 – 2300 m)

- (i) **Variety:** ADC 600-23A
Company: Agricultural Development Corporation

Qualities

- Average yield 43- 68 bags per acre.
- Sweet in taste
- It does not fall easily (no lodging).
- It produces a double cob
- It is resistant to rust
- Resistant to leaf blight
- Resistant to Grey Leaf Spot
- Outyields H614D by 43.3%

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

- (ii) **Variety:** KH600-14E
Company: Freshco (improved H614D)

Qualities

- Average yield 45-50 bags
- Sweet to taste
- Flinty shape (not easily attacked by weevils)
- Has excellent husk cover (does not open ears), which causes rotting
- Tolerant to Grey Leaf Spot (GLS) disease
- Heavy (like original H614 variety).
- Droops at maturity
- Outyields original H614D by 13.3%.
- Matures earlier than H614D (by 1 week)

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

- (iii) **Variety:** KH 600-15A
Company: East African Seed

Qualities

- Yields 33-47 bags per acre
- Matures in 145-148 days
- Has good husk cover
- Very good standability
- Out yields 614D by 10.1%
- Droops (cob faces down) on maturity preventing grain rot
- Tolerant to GLS, Maize Streak, Blights
- Produces double cobs

Continued on page 4

Simple ways in which to prepare for planting

By Emmanuel Atamba Oriedo

Proper land preparation for an organic farmer should be done to improve the health of the soil. As you will not use chemicals and synthetic fertilisers, ensure that your soil is at its best, as follows:

- 1. Till your land minimally.** Do not disturb the soil unnecessarily or cause major changes in its structure. If possible, weed by hand, taking care to return all plant materials (provided they are not infected) and residues from your last harvest into the soil. Plough in weeds at the flowering stage but before seed production, when their vegetative growth is highest. Do not burn plant residues as this kills valuable organisms.
- 2. Cultivation.** Your land should be cultivated before the onset of the rains, to ensure that there is adequate exposure to sunlight. Most crop pests live in the soil in their larvae or pupa stages and are destroyed through cultivation.
- 3. Ridging.** Do ridging for sloping land before cultivation to manage soil erosion. Farming contours are level barriers across a slope, which slow down water run-off, allowing it to penetrate into the soil.
- 4. Hardpans.** These form underneath your soil (15-20cm below). They affect soil structure, reduce water infiltration and prevent root advancement, which slows plant growth. Check for them by pushing a stick through the ground to see how deep it goes. Break hardpans by planting deep-rooted crops such as sorghum or radish.
- 5. Build your soil nutrients.** Constantly add manure and compost to your soil. If possible, carry out a soil test to discover what your soil is lacking.
- 6. Consider the crops you planted earlier and those you want to plant.** Different crops have different demands on soil nutrients. Heavy feeders such as onions will require more nutrients compared to lighter feeders such as beans. Consider this when working on your soil and take appropriate measures.
- 7. Practise crop rotation.** This balances your soil nutrients and reduces pest attacks. Proper crop rotation will increase your yields, too.
- 8. Plant flowering plants.** These should be planted at the edge of your shamba to attract pollinators and other beneficial organisms. They pollinate your crops and increase yields. Incorporate hedges of Tithonia, which add minerals to your soil or Caliandra, which does the same and can also be used as fodder for your animals.
- 9. Plant cover crops.** This reduces soil erosion, and moisture loss, and controls weeds.
- 10. Selecting varieties.** Choose varieties that do well in your area.

What you need to consider before planting maize

Continued from page 3

Suitable growing areas: Mt. Elgon slopes, Trans-Nzoia, West Pokot, Uasin Gishu, Nandi, greater Kericho, Taita, Nyeri (upper parts), Laikipia, Lower Nyandarua.

(iv) **Variety:** KH600-16A

Company: Agricultural Development Corporation (ADC)

Qualities

- Yields 35-50 bags per acre (out yielding H614 D by 16.7%)
- Matures in 140-180 days
- Very good standability
- Tolerant to Grey Leaf Spot (GLS), leaf blight
- Has a good husk cover (will not rot in heavy rains)
- Droops when dry (will not rot in heavy rains)

Suitable growing areas: Trans Nzoia, Uasin Gishu, West Pokot, Keiyo, Marakwet, Laikipia, Nakuru, Kisii, Bungoma, Mt Elgon, Kiambu.

(v) **Variety:** ADC 600-23A

Company: Agricultural Development Corporation (ADC)

Qualities

- Average yield 43- 68 bags per acre
- Sweet in taste
- It does not fall easily (no lodging)
- It produces a double cob
- It is resistant to rust
- Resistant to leaf blight
- Resistant to Grey Leaf Spot

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

(vi) **Variety:** 600-15A

Company: East African Seed

Qualities

- Yields 35-45 bags per acre
- White semi-flint grains
- Has very strong stalk and does not fall easily (good standability)
- Maize cob droops when dry, reducing rotting

- Has good husk cover.

Suitable growing areas: Mt. Elgon slopes, Trans-Nzoia, West Pokot, Uasin Gishu, Nandi, greater Kericho, Taita, Nyeri (upper parts), Laikipia, Lower Nyandarua.

(vii) **Kenya Seed Company:** The most popular seed varieties from the company for high altitude zones include: H614D, H6213, H629 and H628. H6213 can do well under high level management.

Medium altitude varieties: (Altitude: 1200-1600m Rainfall: 800mm and above)

(i) **Variety:** WH507

Company: Western Seed Co.

Qualities

- Average yield 35 bags per acre
- It matures in 4 months (120-135 days)
- Good for green maize (remains green longer)
- It has a big cob

Suitable growing areas: Western Kenya- Kakamega, Bungoma, Busia, Kisii, Nyanza Region- Homa Bay, Suba, Migori, Rongo, Siaya, Bondo; South Rift-Tinderet, Nandi, Kericho, Bomet, Narok, Sotik, Trans-Mara; Central Province-Muranga, Kiambu, Kirinyaga; Eastern Province-Embu, Meru, Machakos, Kitui, Mwingi etc.

(ii) **Variety:** KH 500-33A

Company: Freshco

Qualities

- Average yield 35-40 bags per acre
- Matures in 4 months (120-140 days).
- Good standability
- Resistant to Maize Streak Virus (MSV) and smut disease
- Flinty white grain (resists weevil damage) tightly packed
- Large cob and stalk
- Good taste as green maize when roasted

Suitable growing areas: Western Kenya- Kakamega, Bungoma, Busia, Kisii; Nyanza Region- Homa Bay, Suba,



Migori, Rongo, Siaya, Bondo, South Rift-Tinderet, Nandi, Kericho, Bomet, Narok, Sotik, Trans-Mara; Central Province-Muranga, Kiambu, Kirinyaga; Eastern Province-Embu, Meru, Machakos, Kitui, Mwingi etc.

(iii) **Variety:** WH505

Company: Western Seed Co.

Qualities

- Average yield is 30 bags per acre
- Maturity is 4 months (120- 150 days)
- Tolerant to drought
- Tolerant to most leaf diseases

Suitable growing areas: Western Kenya- Kakamega, Bungoma, Busia, Kisii; Nyanza Region- Homa Bay, Suba, Migori, Rongo, Siaya, Bondo, South Rift-Tinderet, Nandi, Kericho, Bomet, Narok, Sotik, Trans-Mara; Central Province-Muranga, Kiambu, Kirinyaga; Eastern Province-Embu, Meru, Machakos, Kitui, Mwingi etc.

(iii) **Variety:** KH 500-13A

Company: Freshco

Qualities

- Average yield is 35-40 bags an acre
- Maturity 4 months (120-140 days)
- Tolerant to MSV, leaf blight and leaf rust
- Good stalks for cattle feed
- Good standability

(iv) **Variety:** WH 403

Company: Western Seed

Qualities

- Average yield is 30-35 bags per acre
- Good husk cover
- Does not lodge
- Maturity of 4 months (120-135 days)



Suitable growing areas: Western Kenya – Kakamega, Bungoma, Busia, Kisii, Nyanza Region- Homa Bay, Suba, Migori, Rongo, Siaya, Bondo, South Rift-Tinderet, Nandi, Kericho, Bomet, Narok, Sotik, Trans-Mara, Central Province-Muranga, Kiambu, Kirinyaga, Eastern Province- Embu, Meru, Machakos, Kitui and Mwingi.

(v) **Variety:** WH 402
Company: Western Seed

Qualities

- A superior hybrid seed
- Average yield is 40 bags per acre
- Slightly tolerant to Maize Lethal Necrosis (MLN) disease
- Maturity of 4 months (130-160 days)

Suitable growing areas: Western Kenya- Kakamega, Bungoma, Busia, Kisii, Nyanza Region- Homa Bay, Suba, Migori-Rongo, Siaya, Bondo, South Rift- Tinderet, Nandi, Kericho, Bomet, Narok, Sotik, Trans-Mara, Central Province-Muranga, Kiambu, Kirinyaga, Eastern Province- Embu, Meru, Machakos, Kitui, and Mwingi.

Kenya Seed Company: Popular varieties from the company for medium altitude zones include: H624, H524, H525, and H526. Others varieties include H513, H515, H516, H517, H518, H519, H520, H521, and H522.

Dryland Varieties

Dryland varieties mature within 90-120 days. These perform well in arid and marginal areas with a mean annual rainfall of 200mm – 500mm. The most suitable varieties for these regions are;

DH01, DH02, DH03, and DH04
(Kenya Seed Company).

KDV-1 (OPV), KDV-6 (OPV)
(FRESHCO)

Areas where the varieties do well include TaitaTaveta, Mwatate, Lamu, Mpeketoni, Homa Bay, Rongo, Unguja and Siaya.

Freshco Seeds

KH600-14E

Characteristics

- Matures in 160-170 days
- Average yield is 45-50 bags per acre
- Has excellence husk cover
- Tolerant to moisture stress
- Minimal to zero rotting
- Tolerant to GLS, blight and rust
- Droops when dry

Suitable Areas; Kitale, Bomet, Sotik, Kisii, Nyandarua, Nakuru, Turbo, Nyeri, Subukia, Kapenguria and Environs.

KH500-33A

Characteristics

- Matures in 120-140 days
- Average yield is 35-40 bags per acre
- Good standability
- Resistant to MSV and Smut
- Flinty white grains, tightly packed
- Large cobs and stalk
- Good taste when roasted
- Good stalk and foliage for cattle feed

Suitable Areas; Kakamega, Bungoma, Nunguni, Kangundo, Mau Hills, Nyeri,- Muranga, Embu, Kirinyaga, Meru, Nakuru, Subukia, Bomet, Loitoktok and other coffee zones.

KDV-6

Characteristics

- Matures in 75-90 days
- Average yield is 25-30 bags per acre
- Drought tolerant maize
- Extra-early maturity
- Large cobs and stalk

Suitable Areas; Kisumu, Homabay,- Siaya, Rongo, Ahero,Ugunja, Busia, Mbeere, Mwea, Makuyu, Nunguni, Mua Hills, Kangundo, Tala, Kabati and environs.

FRC425IR

Characteristics

Early maturing in 90-120 days
Average yield is 25-30 bags per acre
Specially developed to be grown in Stri-

ga weed prone areas. It is resistant to Imazapyr herbicide which kills striga weed

Suitable Areas; Kisumu, Homabay, Siaya, Rongo, Ahero, Oyugis, Ugunja, Busia and striga weed prone areas. Bomet, Sotik, Kisii, Nyandarua, Nakuru, Turbo, Nyeri, Subukia, Kapenguria and Environs.

KH500-33A

Characteristics

- Matures in 120-140 days
- Average yield is 35-40 bags per acre
- Good standability
- Resistant to MSV and Smut
- Flinty white grains, tightly packed
- Large cobs and stalk
- Good taste when roasted
- Good stalk and foliage for cattle feed

Suitable Areas; Kakamega, Bungoma, Nunguni, Kangundo, Mau Hills, Nyeri,- Muranga, Embu, Kirinyaga, Meru, Nakuru, Subukia, Bomet, Loitoktok and other coffee zones.

KDV-6

Characteristics

- Matures in 75-90 days
- Average yield is 25-30 bags per acre
- Drought tolerant maize
- Extra-early maturity
- Large cobs and stalk

Suitable Areas; Kisumu, Homabay,- Siaya, Rongo, Ahero, Ugunja, Busia, Mbeere, Mwea, Makuyu, Nunguni, Mua Hills, Kangundo, Tala, Kabati and environs.

FRC425IR

Characteristics

- Early maturing in 90-120 days
- Average yield is 25-30 bags per acre
- Specially developed to be grown in Striga weed prone areas
- It is resistant to Imazapyr herbicide which kills striga weed

Suitable Areas; Kisumu, Homabay, Siaya, Rongo, Ahero, Oyugis, Ugunja, Busia and striga weed prone areas.

For more information on what you need to consider before planting maize, visit the Infonet web database at; <https://www.infonet-biovision.org/PlantHealth/Crops/Maize>

Harvest rainwater and use it well

Most farmers rejoice when it rains, but never get good harvests because they run out of water as soon as the season ends

By Susan Njugi

Most farmers rejoice when it rains, but never get good harvests because they run out of water as soon as the rainy season ends. Use the following water harvesting tips to get the most out of the long rains expected in March:

Harvest water that runs along roads and paths

Dig grooves (water retention/contour ditches) 0.3-1.5 metres wide by 0.5-1.5 metres deep across your garden. Direct the runoff water into the trench and redirect it to the next one when it fills up. Plant bananas at the bottom of the trenches. The water slowly seeps into your farm, keeping it moist long after the rains have stopped. You will also later harvest the bananas.

Make furrows across your shamba

Pile soil across your shamba to make earth furrows. They trap run-off water and reduce soil erosion. Plant crops such as Napier or Bracharia grass on the furrow to hold the soil in place.

Use an earthen pot to keep your fruit trees healthy

Dig a hole next to your fruit tree and bury an earthen pot. Cover with soil and fill with water. The pot is porous and your tree will remain moist. Refill every few months.

Dams

Store water in dams or water pans. Line your dam with polythene paper to reduce seepage of water into the ground. A dam is a breeding ground for mosquitoes. Repel them by planting herbs around the edges such as lemon thyme or balm, sage, lime basil, citrosa or lavender. Cook with the herbs and sell the excess.

NB: Join hands with your neighbours to dig your dams. If 20 farmers come together and each provides one labourer, each



farm's dam would be done in a record two to three days. Everybody would then have a water pan or dam, and at minimal cost.

Building Sand dams

Sand dams built under valleys of dry riverbeds can store millions of gallons of water for years, for domestic use and irrigation. Long, reinforced concrete barriers are erected across seasonal riverbeds. Sand carried downstream during rains piles up to the level of the barrier.

At the end of the season, the water remains trapped in the piled-up sand for up to a kilometre upstream, depending on the dam's height, width and gradient of the valley. To build a sand dam identify a part across a dry river bed where the rock is close to the surface. The closer the rock the less you will have to dig. Dig a deep trench into the sides of the valley down to the rock for construction

of a strong wall, to give the dam a firm foundation. The wall is built using cement, and barbed wire is laid across the bottom at intervals and stones thrown in with the cement to strengthen the wall.

The height of the wall should be carefully calculated by dam specialists and spillways designed so that the river will flow as it did before, when the rains come. Water begins to collect as it rains and in two to three seasons the dam also fills with sand, which stores and holds the water. The stored water can be collected through pipes connected at the base. People conversant with sand harvesting dig shallow holes along the river bed and collect the water.

Sand dams are expensive to build and require a lot of labour. However for dry areas where rain is scarce they are one of the best solutions for providing reliable water supply to large communities.

Use your roof

Collect water from your roof into a drum, water tank, or any other container. Clean gutters and put a sieve on top of your storage tanks to trap leaves, animals and insects. Disinfect drinking water or install a filtration system.

Recycling your grey water

Grey water is the water you use to bathe, wash clothes and dishes. So long as it has no powder detergents, which are harsh, collect it and use it to water your garden. Put two shovels of ash in every 60 litre of grey water and let it stand overnight. In the morning, pour the water on your crops.



How to make a zai pit

- Dig holes 2ftx2ft and 2ft deep.
- Remove the loose soil and put it aside.
- Place dry matter (grass and twigs) at the bottom to retain water.
- Mix the top soil with manure and put on top of the dry matter.
- Most crops can be grown using zai pits. For maize, plant nine seeds per pit and you can harvest over 12 bags from half-an acre.

For more information on harvesting rainwater, visit Infonet web database at: <https://www.infonet-biovision.org/EnvironmentalHealth/Rainwater-Harvesting>

Managing the deadly Newcastle disease in poultry

NCD is caused by a virus known as Paramyxovirus and spreads quickly, killing hundreds of birds in a short time

By Organic Farmer writer

Whenever Newcastle Disease (NCD) attacks, it leaves numerous chicken dead and farmers counting their losses. NCD is caused by a virus known as *Paramyxovirus* and spreads quickly, killing hundreds of domestic and wild birds in a short time.

The disease occurs either as mild (lentogenic), moderate (mesogenic), or very severe (virulent or velogenic). Chickens may sometimes die without exhibiting any symptoms. Those that do may exhibit one, some, or all of the symptoms making it difficult to identify.

Symptoms

Birds may gasp for breath, cough, and sneeze and will appear dull or tired, with green watery diarrhoea. They may also be nervous, have seizures, paralysis of the wings and legs, and twisted necks that result in lameness and spasms.

The head, ear and neck of the chicken may swell and eyes may become red. Chickens may stagger or move in circles and may have digestive problems. Eggs are abnormal in colour, shape, and

surface, with a watery albumen (white part of the egg). Egg production drops immediately.

Transmission

The disease spreads through direct contact with infected birds, droppings, nasal discharge, contaminated food, water, feeding equipment, and even human clothing. The disease-causing virus can survive for several weeks in the environment, especially in cold weather.

Prevention and control

The disease has no cure and vaccinating your birds against it every six months, is the best control method.

Other measures that can help prevent spread of the disease:

- Isolate birds where NCD outbreaks are reported;
- Thoroughly clean and disinfect poultry houses;
- Pest control in flocks;
- Kill all sick birds and bury the carcasses far away from the healthy ones;
- Keep the chicken shed free of birds for four months to ensure the disease-causing viruses are non-existent before re-stocking;
- Isolate and vaccinate new birds before mixing them with your flock.



The disease-causing virus can survive for several weeks in the environment, especially in cold weather

Vaccines are administered in two ways:

- I) **Through the eye** (one eye drop) for chickens of all ages (from one-day-olds to adults). If the entire first drop does not enter the eye, apply another one.
- II) **Through drinking water.** This is easier, but less potent than eye drops and thus should be given twice, two to three weeks apart initially, and again every three months.

Important instructions:

- Boiled drinking water left to cool in a covered non-metallic container, should be used to prepare the vaccine. Avoid treated tap water because it contains chlorine, which can destroy the vaccine. However, if no alternative water is available, leave the tap water to stand uncovered overnight to allow the chlorine to evaporate. Add one teaspoonful of powdered milk per 10 litres of water to neutralise the effects of the chlorine. Do not use disinfectants to clean water receptacles, as they will inactivate the vaccine virus;
- Remove drinking water from the chickens for one to two hours or even the whole night, before administering the vaccine;
- Mix the vaccine with the amount of water that the chickens can drink in one hour (about 5 to 7 ml of water per bird);
- The mixed vaccine can be used for only two days. On the first day, put an eye drop per chicken and store the rest in a cool box. On the second day, two eye-drops per chicken after which the remaining vaccine should be discarded responsibly;
- When transporting the vaccine for long distances, place in a cool box or wrap it in a damp cloth in a weave basket away from direct sunshine.

Note: NCD symptoms are similar to Avian Flu or influenza. It is, therefore, important to have laboratory tests done to confirm the type of virus causing the disease.

For more information on managing the deadly Newcastle Disease (NCD) in poultry, visit the Infonet web database at; <https://www.infonet-biovision.org/AnimalHealth/New-Castle-disease>





| Location | Frequency |
|------------------------------|-----------|
| Nairobi | 102.7 |
| Kakamega Bungoma Busia | 91.5 |
| Malindi | 106.3 |
| Location | Frequency |
| Webuye | 95.9 |
| Garissa | 88.7 |

| Location | Frequency |
|------------------------------|-----------|
| Taita | 107.4 |
| Narok | 102.3 |
| Nyeri | 105.7 |
| Machakos Makueni Kitui | 93.8 |
| Meru | 105.1 |
| Marsabit | 88.3 |

| Location | Frequency |
|------------------|-----------|
| Nakuru Gilgil | 104.5 |
| Kisii | 91.3 |
| Kisumu | 105.3 |
| Mombasa | 105.1 |
| Kericho | 90.5 |
| Eldoret | 91.1 |

Tune to Radio Maisha every **Thursday at 7.30 PM** through any of these Frequencies nearest to you to receive Kilimo Hai, TOF Radio Swahili farmer programs. TOF Radio and Radio Maisha partner to bring you these educational programs.

Correction: In the December issue we published an article on page 7 explaining how to prepare feeds for your animals for yourself. In the article the appropriate ages for the chicken that consume chick mash and growers mash was wrong. For chick mash the correct age is 1-8 weeks and not 1-4 weeks and for growers mash the correct age is 8-18 weeks and not 4-8 weeks as indicated in the article. We apologise for any inconvenience caused.



Simple, affordable ways to keep your cattle safe from tsetse fly infestation

By Organic Farmer writer

Livestock farmers in Kubo, south coastal Kenya, have for long been grappling with tsetse fly infestations

Loss of cattle, low milk and meat production, and inability to work in the fields, had become the sources of fear among farmers in this area until Icipe and Biovision Africa Trust (BvAT), through its Farmer Communication Programme (FCP), came to the rescue with an integrated pest management tsetse fly repellent collar.

The collar, which is put around an animal's neck, contains a strong-smelling serum that repels the flies, pushing them away to coloured traps laced with chemicals that lure and kill them. Farmers say this has brought a great relief to them, as the collars are locally made and cost effective. "I use my cows to till the land. Before the tsetse fly repellent collar, our animals were restless and it was

impossible to get them to work. Tsetse flies make them restless and you have to set up a fire to repel the pest," says Chiliku Mweru, one of the pioneer farmers who has benefited from the innovation. Ms Naomi Ndei, a mother of three, is excited about the technology. She tells of the ordeals she went through before the innovation.

"We lost many animals due to tsetse flies. We had been using the wrong methods and diagnosis to control the pest, and our animals were dying because we did not have the right information," she laments. In 2019, the FCP collaborated with International Centre of Insect Physiology and Ecology (Icipe) to produce content for use in educating farmers on nagana and the available technologies to control the pest. The programme, produced a series of mass communication features through radio,

magazines, and documentaries, which were relayed to farmers countrywide.

This prompted farmers from other counties to use it. Mr Cyrus Ndegwa, from Mwea, central Kenya, is one of the farmers whose interest in the technology peaked after he read an article in TOF Magazine. He had lost his animal to tsetse flies and was in dire need of protection for his herd, when he came across the article.

Through the BvAT Tusemezane feedback system, his quest for a solution was picked up by the Icipe animal health unit, which guided him on the innovative technologies he could use to control the pest. The Tusemezane feedback system is a communication and monitoring tool, that employs various communication platforms to link farmers with other stakeholders, in the agricultural sector. With the ease of this technology as demonstrated on various FCP platforms, farmers need not worry anymore about dwindling yields, restlessness or loss of livestock resulting from tse tse fly infestation.

For more information about simple and affordable ways to keep your cattle safe from tsetse fly infestation, visit Infonet web database at; <https://www.infonet-biovision.org/AnimalHealth/Flies-and-Mosquito-Borne-Diseases#simple-table-of-contents-4>

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