

## Safe and healthy poultry keeping

by Dr Sally Best



Peter Caton Tearfund

Around the world many people rely on poultry meat and eggs to provide essential nutrients for a healthy diet.

Poultry (chickens, ducks, quail, guinea fowl, geese and other domestic birds) benefit human health because meat and eggs from birds provide healthy and nutritious food. This article outlines the main benefits and risks to humans that are associated with poultry keeping and consumption, and describes how to keep the risks as low as possible so that the benefits can be enjoyed to the full.

### Benefits

Chicken meat and eggs are widely available across the world. Chicken meat is usually the cheapest of all domestic livestock meats and eating it is largely without cultural taboos. The health benefits of eating both chicken meat and eggs can be enjoyed by most people across the developing world. For this reason we will focus on chickens as we look at health

benefits, although a lot of the information is relevant to other poultry.

### ESSENTIAL NUTRIENTS

Eggs provide nutrients that are important for keeping people of all ages healthy and strong. Eggs also provide important vitamins and minerals. In fact poultry products are rich in almost all essential nutrients except vitamin C. Because of the

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nutrients they contain, eggs are important for your brain and memory, they help keep your eyesight strong, help your body produce energy, protect you from disease, help unborn babies develop properly and keep muscles, bones and teeth strong.

### FOLIC ACID FOR EXPECTANT MOTHERS

When women do not consume enough folic acid from the very early stages of pregnancy, they are at increased risk of miscarriage, stillbirth, or having children with severe brain and spinal cord defects. Eggs are a good source of folic acid and so eating them during pregnancy will reduce these risks.

### PROTEIN FOR STRENGTH AND HEALTHY GROWTH

Protein is essential for building and repairing muscles, organs, skin, and other body tissues and is particularly important to help young children grow. Chicken meat and eggs are an excellent source of good quality protein.

### GOOD FATS NOT BAD FATS

Chicken meat is a healthy meat because it has a low overall fat content. Unlike beef and lamb, it does not contain the type of

*Footsteps* is a magazine linking health and development workers worldwide. Tearfund, publisher of *Footsteps*, hopes that it will provide a stimulus for new ideas and enthusiasm. It is a way of encouraging Christians of all nations as they work together towards creating wholeness in their communities.

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fat which contributes to heart disease, and it also contains a lower proportion of other unhealthy fats compared with most red meats. Approximately half of the fats in chicken are helpful fats.

## OMEGA-3 FATTY ACIDS

Recently, experts have begun to realise the importance of omega-3 fatty acids for human health. They have a wide range of benefits including protection from diseases such as cancer, heart disease and arthritis. They are also particularly important during pregnancy and early infant development. If chickens are fed flax seed, rapeseed or rapeseed oil, or fish oil, the amount of omega-3 fatty acids in their eggs will be increased. This is known as enrichment. Enriched eggs can be a very good source of omega-3 fatty acids, especially in areas where fish and seafood (another good source of omega-3) are not available or are too expensive.

## EGGS ARE HEALTHY

In the past there have been warnings that eating too many eggs could increase the risk of heart disease because it was thought that cholesterol in eggs was bad for you. However, eating one or two cooked eggs a day is good for most people as they have many health benefits.

## Risks

Human health can be put at risk by contact with live birds or by eating poultry products. However, simple hygiene measures can dramatically reduce these risks.

## CONTACT WITH LIVE BIRDS INCREASES RISK OF AVIAN FLU

Humans can sometimes catch Avian flu from contact with diseased birds, although this is relatively rare. According to the World Health Organization only 650 people had caught Avian flu between 2003 and the end of 2013 but it is a dangerous disease because more than half of these people died.

It is important to protect your poultry flocks from Avian flu and to follow advice on what to do if you think your flock is infected. Birds that are infected, or might be infected, should never be sold, given as gifts or prepared as food. It is very important to take great care when handling and disposing of diseased birds. For more information see the article on Avian flu on page 14.

## EATING CONTAMINATED POULTRY PRODUCTS INCREASES RISK OF FOOD POISONING

Poultry meat and eggs may be contaminated by harmful bacteria that can cause food poisoning in humans. Dangerous bacteria often live in the birds' guts. These bacteria may contaminate the meat during slaughter and processing. Humans may also introduce harmful bacteria when handling poultry products.

Children, people who are malnourished, people in war zones, or those living through natural disasters are most vulnerable to food poisoning because their bodies are weaker and under stress. Although food



Richard Hanson Tearfund

Eating eggs can improve your eyesight, memory, bone strength and immune system.

poisoning can be mild, it can also be very severe and even fatal. The main symptom is diarrhoea often accompanied by vomiting.

The risk of food poisoning from meat is low when backyard birds are slaughtered at home and are immediately prepared, cooked and eaten. Furthermore, because a single bird can often be consumed by a family in a single sitting, the risks associated with storing meat are avoided.

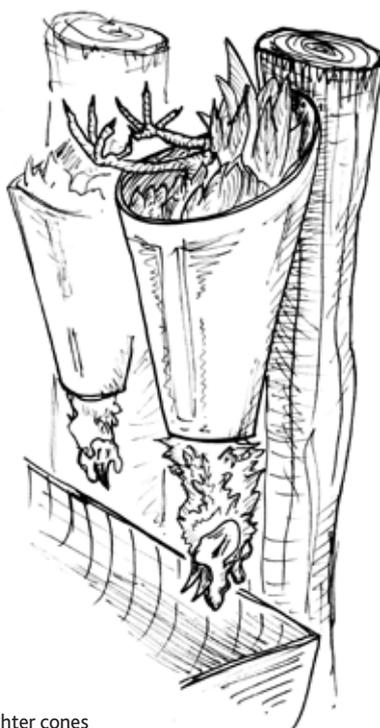
The risk increases when poultry production, slaughtering, processing and consumption take place at different times and in different places. In particular a lack of refrigeration during marketing of meat produced on a large commercial scale is a big risk factor.

## Reducing the risks

### REDUCING THE RISKS DURING SLAUGHTER AND PROCESSING

*This section describes hygiene measures for small-scale slaughtering facilities to prevent contamination. The same hygiene principles can also be applied when birds are slaughtered at home.*

- Slaughtering facilities should be divided into three separate areas: (i) an area for live birds, (ii) an area for killing and defeathering, and (iii) an area for processing (gutting, rinsing, chopping and/or packaging).
- Birds should be as clean as possible when they arrive for slaughter. For example, during transport poultry crates should not be stacked on top of each other unless they have solid bases – this will help prevent faeces from one bird soiling another.
- Workers should wash their hands and their tools often throughout the whole process.
- Workers should avoid splashing bird blood on themselves and their clothes.
- Birds should be placed head-down in slaughter cones, above a trough to collect the blood, to prevent the spread of disease by blood spray, flapping and loose feathers.
- Water used for scalding (to loosen the feathers before plucking) should be frequently replaced.



Slaughter cones

- Avoid spilling the contents of the intestines on the meat during gutting.
- The carcasses should be rinsed with water that is clean enough to drink, kept as cool as possible. They should also be hung to prevent contamination from work surfaces.
- Flaming the surface of the carcass is also a good way to reduce the number of bacteria that may remain, but quick chilling at 4-10°C is the best way of preventing bacterial growth.
- Wrapping in a clean plastic bag prevents further contamination before sale.
- All waste (stripped carcasses, blood, offal, feathers etc.) should be burned or buried. (Note: feathers for trade, such as down for making bedspreads and clothing, need to be pasteurized to make them safe. Pasteurizing is heating to a temperature that kills most bacteria without changing the product. It is only partial sterilisation and requires specialist knowledge.)

### REDUCING THE RISKS DURING MARKETING AND STORAGE

- If frozen, poultry meat must remain frozen throughout the marketing chain. Defrosting meat on market stalls is a big risk because bacteria survive in frozen

food and then start to multiply again once the food is defrosted. Therefore, defrosted meat should be cooked immediately and eaten.

- Refrigeration helps eggs last longer.

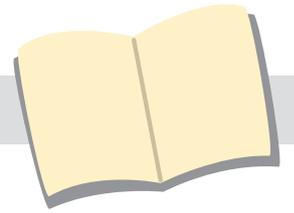
### REDUCING THE RISKS DURING FOOD PREPARATION

- All poultry meat and eggs should be well cooked to kill any bacteria and prevent food poisoning. However, even thorough cooking will not get rid of some of the toxins that the bacteria produce, so it is still important to slaughter birds properly and store food well.
- All other poultry products, such as blood pudding or blood soup, should also be well cooked.
- You can check if your egg is still good by placing it in a bowl of water. If it floats to the top it is rotten. This works for fresh eggs and hard-boiled ones.
- If eggs smell bad, they are bad.
- If other foods, such as vegetables, come into contact with raw chicken they become unsafe unless also thoroughly cooked.
- Do not keep leftover meat and eggs in warm places. Eat it all at the first sitting, or refrigerate it.

## Enjoy the benefits

The benefits of consuming poultry products outweigh the relatively small risks when you take good advice and put it into practice. Most importantly, if you live in an area at risk of Avian flu then protect your flock, and handle and dispose of flu-infected birds with care. If refrigeration is not available, consume your poultry as soon as possible after slaughter and cook all poultry products thoroughly. Remember, chicken and eggs are very good for you, so take these precautions and enjoy safe and nutritious food!

*Dr Sally Best is a medical writer with previous research experience in zoonotic diseases and is a member of the Footsteps editorial committee.*



## From the Footsteps archive...

### Problems with poultry

by Mike Carter. This article first appeared in Footsteps 10 on Small Livestock. At the time of publication, Mike Carter worked for T-CORD, Bishop Burton Agricultural College. He has now retired.

You have probably seen an 'intensive' poultry project: day-old chicks of a 'grade' or 'hybrid' type have been bought; an expensive poultry house has been built for them, perhaps with a corrugated tin roof; special feed is brought ready-mixed from mills.

Sometimes such poultry projects work well, but it is a sad fact that in many countries they can often be seen empty. The chickens are gone and money has been lost. The poultry may have belonged to a development project, to a village cooperative, to a church or school group or to an individual farmer. Whoever they belonged to, hopes have been disappointed.

Why do such projects so often fail? Intensive poultry keeping is not the easy income-generating activity many people believe it to be. Advice may be given by people who know little about poultry keeping. Sometimes people do not realise

how much investment is needed. Things can go wrong. Amongst the most common problems are:

**POOR MANAGEMENT** The management in intensive poultry keeping must be very good. There must be strict hygiene control: eg vaccination against disease, foot dips at the door, disinfecting the house for new chickens. There must be enough space for each bird and sufficient waterers, feeders, nest boxes and perches. If day-old chicks are bought, they must be kept warm and fed a correct diet.

**POOR RECORD-KEEPING** Production and financial records are needed. Chickens not producing well (eggs or meat) must be culled (sold or killed) quickly.

**WRONG TYPE OF CHICKEN** The chickens may have originally come from another country. They may only be able to produce well in a very different type of housing, or under a different management system. Under village conditions, local

chickens are often the most reliable and profitable.

**PROJECT STARTED TOO LARGE** Perhaps 200 layer chicks were bought before the skills and knowledge in intensive poultry keeping were gained, or before it was certain the chicks would do well and the produce sell well.

**INACCURATE BUDGETING** The farmer or project members need to work out accurately, before beginning, exactly how much food growing chickens eat. Other costs – medicines, vaccines, equipment – must be added. With layers it will be six months before the first eggs are laid; in the meantime there will be no income.

**FEED SUPPLY PROBLEMS** Perhaps feed supply or quality failed; there was no more cash to buy feed; there was no transport. Laying chickens will stop producing if feed quality changes or if they have to go without feed or water for just 24 hours. Chickens eat similar food to people, so if food is short, intensive poultry may be in competition with people. This inevitably will lead to supply problems.

## EDITORIAL

This week I went to stay with some friends who keep chickens and each day I was able to have a tasty fresh egg for breakfast. The area where they live used to be one of the centres of chicken farming in the UK, with thousands of people involved in the industry. Chickens were helping people to make a living and also keeping them healthy with plenty of eggs and meat. Now many of the farms have closed and there is a lot of unemployment in the area.

Across the world many people depend on poultry keeping for their food and their livelihoods. In fact, so many *Footsteps* readers got in touch with us asking for more information on this topic that we decided we needed to do a whole issue! We have included articles on nutrition and food safety, chicken health and some ideas on how to make money from your birds.

Poultry keeping has the potential to help to lift people out of poverty. If you already keep chickens or other birds, we hope that this issue will give you some new ideas and information which you can use and share with others. If you are thinking of starting a small chicken project, we hope you will find the stories inspiring and the advice useful.

Sharing what we learn is powerful. Can I encourage you to share just one piece of information from this issue of *Footsteps* with someone you know? If all our readers do that, we will be doubling the impact of the magazine. And more importantly than that, it pleases God when we use what we know to bless those around us. My prayer is that in doing this we will all be able to echo Paul's words in Acts 20:35 'In everything I did, I showed you that by this kind of hard work we must help the weak, remembering the words



Alice Keen, Editor

the Lord Jesus himself said: "It is more blessed to give than to receive."

May you be blessed as you share!

Alice

## Footsteps readers' survey

We have been humbled by the many responses we have received to the readers' survey. Thank you to all those who have responded. What a pleasure it has been to have our post bag full of envelopes covered in stamps from all over the world. We will be sharing the results with you in a future edition of *Footsteps* but your suggestions are already helping us to make the magazine even better and shaping our plans for the future.



Chloe Quarmod Tearfund

## Tiny eggs

Can anyone help me with an unusual phenomenon that just occurred for the second time in six months? I have 12 hens, all laying every couple of days. Yesterday, we found a tiny egg, measuring about 2.5cm in length. This had happened previously about two months ago, and I presumed it was 'just one of those things' but now that it has happened for the second time, I would be grateful for any advice on what it could be. I think it was laid by a one-year-old hen but I also have four hens who are only six months old.

Marion  
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**EDITOR'S NOTE:** We passed Marion's question on to chicken expert, Keiron Forbes and this was his advice:

*The first thing to say is not to worry – there is nothing wrong with your hen. This is quite normal, if unusual. These tiny eggs can take two forms: with or without a yolk. I assume this was a perfect egg but just in miniature. This means that the yolk has not fully developed before being released. When a hen matures she already has all the yolks she will ever produce and each 28 hours or so the next one develops and is released. This normally happens in a pattern of 6–8 eggs and then the hen stops. This is because in nature the hen would then sit on these eggs*

*and hatch chicks, but with commercial layers this trait has been almost lost and the hens continue to produce eggs at a much higher rate. However, all hens need to take a break at some time and often the first egg of the next clutch after that pause is much smaller, like the egg of a young bird starting to lay for the first time.*

## Advice on chicken rearing

In your last issue of *Footsteps*, you were seeking some advice about chicken rearing. I am a poultry farmer in Kisumu, Kenya and would like to advise fellow farmers everywhere.

Firstly, don't underfeed your chickens, especially broilers which are reared quickly for meat production. Broilers need to eat well for 5–6 weeks to be able to give you the best product. Otherwise you will end up with underfed hens that your customers don't want. You might have to sell them at throwaway prices and get less profit.

Secondly, to ensure that you do not have a high mortality rate in your flock, keep everything clean: feeders, water trays etc. The entire room needs to be well ventilated.

Elijah Ogeda

## Helpful resources

We recently held two community workshops in south-west Uganda on environmental change, to identify which

environmental issues the communities knew and were concerned most about. We used a number of drawings of environmental and farming issues from Tearfund publications for exercises that helped participants share with others and consider many new ideas. Your drawings are wonderful, easily understood, appropriate for rural Africa and inexpensive to reproduce, as they are black and white.

We found community members identified a number of key environmental issues such as charcoal burning, the need to replace forests, the loss of soil fertility and the impact of banana monoculture on their food supply and they wanted then and there to take action immediately. So, although we had a limited budget, we quickly printed and bound copies of Tearfund's Agroforestry PILLARS guide as well as farming posters which you can download ([www.fourthway.co.uk/posters](http://www.fourthway.co.uk/posters)).

Both the students and I find your practical suggestions for simple interventions that can improve health in rural settings are a great inspiration. I would be most appreciative if you would make people aware of our Community Development manual which is available for free download on the Healthy Child Uganda website: <http://healthychilduganda.org/assets/web-CD-Manual-Final.pdf>

Kay Wotton

[katewotton5@hotmail.com](mailto:katewotton5@hotmail.com)



Faida Adrama, a nurse facilitator, using the 'Problem tree' exercise from *Footsteps* 90.

Kay Wotton

# Healthy birds, happy farmer

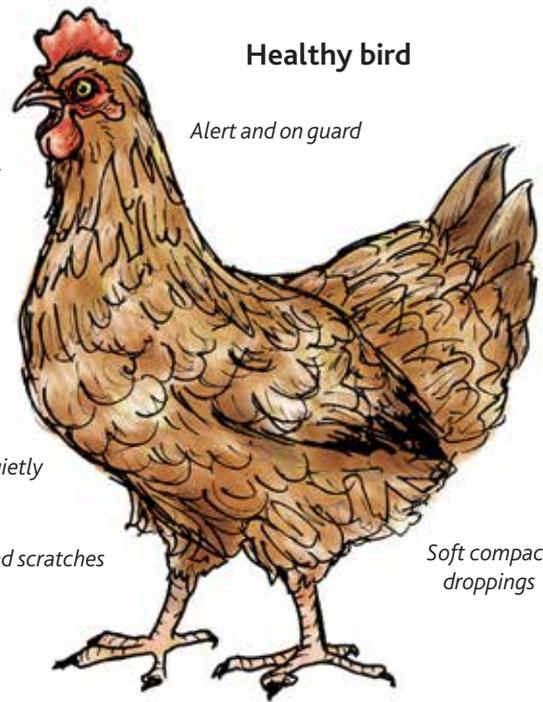
If you keep poultry it is very important to learn how to detect an unhealthy or sick bird, so that you can take action. If you do not, disease may spread to other birds and the whole flock may be lost.

Diseases may be introduced into the flock by:

- Buying birds from unreliable sources.
- Allowing adult birds, which may be disease carriers, to mix with chicks.
- Allowing birds which are disease carriers from other poultry farms to mix with your healthy chickens.
- Rodents, flies and wild birds which may be disease carriers mixing with healthy chickens.
- Giving dirty water or feeding contaminated or stale food to chickens.
- People who may carry diseases on their feet, hands or clothes.
- Using old litter which may contain diseases or not cleaning or disinfecting the poultry houses.
- Contaminated equipment (feed and water troughs).

Diseases will be very serious in chickens that are not well fed and given clean water at all times. They should be kept in hen houses which have enough fresh air and, whenever possible, be vaccinated against preventable diseases.

As well as keeping their birds healthy, farmers can control diseases on their farms by not mixing chicks with older birds when brooding and buying chicks from reliable sources only.



**Healthy bird**

- Bright eyes and comb*
- Alert and on guard*
- Smooth and neat feathers*
- Eats and drinks normally*
- Breathes quietly*
- Walks, runs, stands, and scratches*
- Soft compact droppings*

**Unhealthy or sick bird**



- Wet droppings with blood or worms*
- Tired and lifeless*
- Dull eyes and comb*
- Coughs, sneezes and breathes noisily*
- Sits or lies down*
- Ruffled and loose feathers*
- Lays less or stops laying*
- Diarrhoea*

## Common diseases in chickens

### Newcastle disease

Newcastle disease is an acute, deadly disease that affects chickens of all ages, as well as some other types of poultry. It is caused by a virus that can remain alive in manure for up to 2 months and in dead carcasses for up to 12 months, however it is easily killed by disinfectants, fumigants and direct sunlight. It spreads rapidly, and may kill most of the chickens in the area. The nervous and respiratory (breathing) systems are usually affected.

#### SYMPTOMS

- Fever, depression and loss of appetite
- Swollen head, and sometimes swollen wattles
- Watery discharge from nostrils and eyes, with difficult breathing
- Nervous signs such as twisting of the head and neck, paralysis and walking as if drunk, wings relaxed and held away from body
- Green diarrhoea which is sometimes bloody
- Sudden death

#### DIAGNOSIS

- Post-mortem by trained animal health worker (signs include red swelling in the wall of the oesophagus and digestive system, yellow spots in intestines)
- No history of Newcastle disease vaccination

#### TREATMENT

There is no treatment. You need to kill and dispose of all sick birds (see page 14).

#### PREVENTION

Vaccination. Maintaining good hygiene and disposing properly of sick chickens.

## Fowl pox

Fowl pox is a disease of chickens that spreads gradually by mosquitoes. It is caused by a virus and affects chickens of all ages as well as many other bird species. It is seen in two forms: the dry form which causes skin sores (scabs), and the wet form which causes sores in the mouth and throat. The wet form may cause choking if the windpipe gets blocked.

### SYMPTOMS

- Sores on the parts of the body without feathers (head, eyes, legs, vent) that may later form scabs and ooze pus
- Sores on the tongue, in the mouth and trachea, that may cause death from choking
- Eyelids may be stuck together so that the affected chickens cannot see to eat or drink
- Feet and legs may be affected and swollen

### DIAGNOSIS

Post-mortem will find sores, especially scabs, on face, mouth, throat or feet

### TREATMENT

- Separate all affected chickens from the flock

- Give affected chickens special care by:
  - providing easy access to food and water
  - cleaning sores and applying antibiotic ointment or Gentian Violet
  - applying antibiotic ointment made specifically for eyes. **WARNING:** Never put ordinary skin ointment in or near the eyes.

### PREVENTION

- Vitamins or antibiotics in the drinking water are helpful
- Vaccination
- Reduce mosquitoes around the poultry house by draining areas where mosquitoes breed. During an outbreak, it may be necessary to use mosquito spray inside and around the poultry house.

## Chronic Respiratory Disease (CRD)

Chronic respiratory disease is a disease caused by an organism called 'Mycoplasma gallisepticum'. It is initially introduced to flocks by infected eggs but then spreads by bird-to-bird contact and by contact with droplets that are breathed out by the chickens into the air or onto equipment. Moving, overcrowding or stressing chickens in any way may trigger an outbreak of CRD. The disease is complex because three or more conditions are needed for the disease to develop. One condition is the presence of mycoplasma organisms. The second condition is stress (eg extreme temperatures and humidity, being transported or the addition of new birds into an established flock). The third condition is presence of another bacteria, such as E. coli. CRD also affects turkeys, game birds, pigeons and other wild birds. Ducks and geese can become infected when held with infected chickens.

### SYMPTOMS

- Discharge from the eyes or nostrils
- Difficult breathing
- Lack of appetite for feed and water
- Failure to grow properly

### DIAGNOSIS

Post-mortem will find a thick, yellow pus (cheese-like) around the heart, in the lungs and air sacs; the trachea or windpipe is inflamed (red in colour) and sinuses are inflamed (reddened in colour) and contain mucus.

### TREATMENT

Antibiotics (always consult an animal health worker before treating your chickens).

### PREVENTION

- For broilers: raise only one age group at a time (called an 'all-in, all-out' programme). Clean and disinfect between each group of broilers.
- Buy chicks from good hatcheries that are guaranteed to have no mycoplasma. Chicks from these hatcheries may cost more.
- Ask an animal health worker for advice on doing a blood test for mycoplasma. Hatching eggs only from hens which test negative will prevent the disease spreading.

## External parasites

Lice, mites, ticks and fleas are common external parasites of chickens. Lice and mites bite and damage the skin. Mites, ticks and fleas suck the blood and cause anaemia (thin blood) and poor egg production. Certain external parasites can carry other diseases, such as fowl pox.

### SYMPTOMS

- Lice cause scaly, damaged skin and are often visible to the human eye.
- Scaly-leg mites cause crusty, thickened, unsightly legs. Red mites (also called nocturnal mites) attack during the night and can cause severe anaemia, which makes the birds weak and poor egg producers. Feather mites produce scabs and also lead to anaemia resulting in poor egg production. Feather mites tend to look like moving dust particles.
- Fleas can burrow into the skin and cause ulcers.
- Mosquitoes can suck the blood of birds and cause poor egg production, or even death. Mosquitoes also carry several viral diseases such as Fowl pox.
- Ticks attack at night and suck blood resulting in anaemia and poor egg production. Often red spots can be seen where the ticks have fed. Ticks can also carry diseases.

### TREATMENT

Consult an animal health worker who will be able to prescribe insecticides to kill the parasite. For leg mites, the legs can be dipped in kerosene. However, great care must be taken not to let the kerosene touch the feathers or skin. Warning: Insecticides can be poisonous if used improperly. Always mix and apply according to the instructions.

*This article has been adapted from 'Where there is no animal doctor' by Dr Peter Quesenberry and Dr Maureen Birmingham, Christian Veterinary Mission, ISBN 1-886532-11-7. Visit [www.cvmusa.org/books](http://www.cvmusa.org/books) to order a hard copy.*

# Housing village chickens

by Mwaka Chibinga

Housing village chickens at night will protect them from rain and the cold, from predators and from theft. Also, housed birds are easier to catch to inspect for signs of illness or injury, or to vaccinate them against diseases.

## Types of housing

Adult birds and growers are often provided with elevated night housing. Chicken houses built close to the ground are suitable for hens with young chicks that cannot enter an elevated house. It may be necessary to dig a drain around such a house or to raise the floor, so that it will stay dry during the rainy season. **A house about 4m long, 1m wide and 1.5m high can hold 8 to 10 adult birds if they are kept enclosed all day, or about 20 for overnight housing.** The house can be completely covered with wooden slats or be partly open with netting or woven bamboo.

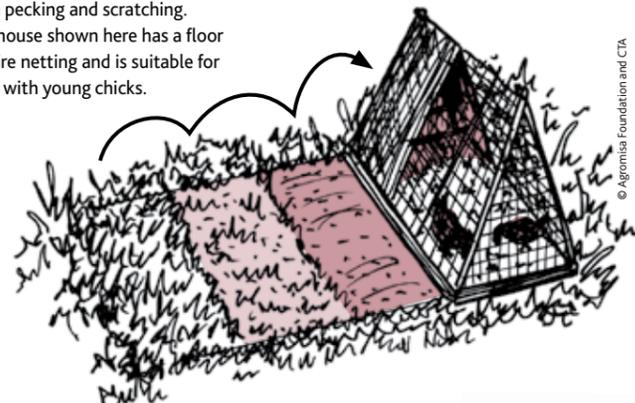


A raised chicken house made from local materials



A simple mobile chicken house

Systematic, regular movement of chicken houses and chicken runs helps prevent worm infections and allows the ground to recover from pecking and scratching. The house shown here has a floor of wire netting and is suitable for hens with young chicks.



© Agronisa Foundation and CTA

## CONSTRUCTING A CHICKEN HOUSE

A house can be built cheaply using local materials such as tree and bush branches or reeds and thatch grass. The size of the house will depend on how many birds the farmer has (or plans to have) and if they are to be kept in the house overnight or for longer periods. If too many birds are kept together they may start to peck each other, leading to injury and diseases.

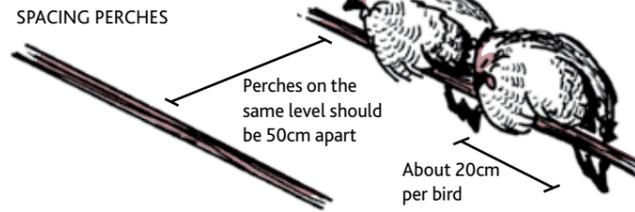
Some simple rules for building a chicken house:

- Clear the grass and bush for about 3m on all sides of the house site to keep predators such as snakes and rats away from the chickens.
- Always remove the bark from timber used to construct the houses so that pests and parasites such as ticks and mites will have nowhere to hide.
- The house should protect the chickens from rain and wind but have enough ventilation to provide birds with fresh, clean air.

- The opening should be wide enough to allow the inside of the house to be cleaned easily.
- Because many infectious diseases of chickens are transmitted via their droppings, the floor of the house should have openings to allow droppings to pass through to the ground. The spaces between the slats will depend on the age and size of the chickens, ensuring they have adequate foot support and that droppings can pass through. Wire netting can also be used, with perches attached.
- If the chicken house is built on poles to protect it from predators, it should be at least 1m above the ground but not so high that the inside of it cannot be reached by the farmer.
- Putting inverted metal cones or cans around the poles of a chicken house will make it harder for rats and snakes to get into it.

## Perches

Providing perches for roosting will minimise the contact between the birds and their droppings, and therefore help to prevent diseases. The perches can be made from bamboo or straight tree branches (remove the bark first – see 'Constructing a chicken house' below). They should be about 3cm in diameter. Each adult chicken requires about 20cm of perch space. If more than one perch is needed, the perches should be about 50cm apart and at the same level. If they are at different levels the birds will fight to reach the highest perch when they come in to roost in the evening, causing unnecessary stress.

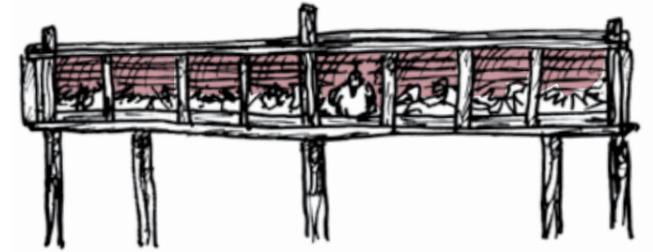


## Nests

Providing clean nests in safe places means more eggs can be collected. In addition, a hen will hatch more chicks if her nest is clean, dry and safe.

Some tips on nests:

- Provide enough nests – ideally one nest per hen but not less than one nest per five hens.
- Pad the nests with clean, dry nesting material such as leaves, straw, old cloth or even sand to help to keep the eggs warm and minimise the risk of breakage or contamination.
- Eggs intended for brooding should not be completely removed from where the hen laid them, otherwise they might be abandoned. Leave at least two eggs in the nest.
- Nests should be located in safe places, protected from rain and wind, and out of reach of predators. Hens prefer nests that sit above the ground.



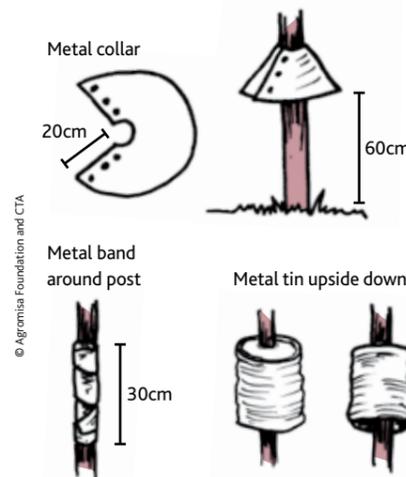
- Nests should be constructed in a way that protects the eggs from cooling from below or from falling out of the nest.
- Nests should be cleaned regularly.
- Nests that have been used for a long time should be fumigated with smoke every six months.
- If there has been a serious outbreak of disease or a heavy infestation of external parasites such as lice, the nests should be burnt and replaced using new materials.

## Chicken house hygiene

Cleaning the chicken house helps to prevent and control diseases, especially external parasites such as fleas and mites. The following procedures should be adopted:

- Place wood ash or lime on the floor and walls to repel external parasites and aid the removal of manure when cleaning.
- Remove droppings and litter from inside and underneath the house at least once a week and, if the house is portable, move it to a fresh area.
- Break up chicken manure so that it dries quickly – this will help to kill infectious agents and the eggs of parasitic worms within the manure. Flies will not be a problem if the manure is kept dry.

- Compost it for at least three weeks and then place the manure on gardens, mixing it into the soil to reduce the chance of diseases and parasites accumulating and to prevent flies from reproducing in it. The manure will fertilise the soil, leading to better plant growth.
- Fumigate the chicken house every six months with smoke (for example, by lighting a fire under elevated chicken houses or placing very small chicken houses, baskets and cages above kitchen fires) to control external parasites.
- Empty a house where sick birds have been. Clean it or even burn it and build a new one.



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Keep rodents and snakes away by adding inverted metal cones or tin cans. Ensure the cones are tightly fixed to keep very small rodents out.

Mwaka Chibinga is Project Officer for the poultry project at Brethren in Christ Church, Zambia. This article has been compiled by Helen Gaw from the manual he produced, Practical Village Chicken Production. If you would like a copy of this manual, please email [publications@tearfund.org](mailto:publications@tearfund.org). Illustrations have been copied from or inspired by the Agrodok Small-scale Chicken Production (see Resources, page 13).

Resources used in Practical Village Chicken Production: Improving village chicken production, ACIAR (2009) (download free at [aciar.gov.au/publication/mn139](http://aciar.gov.au/publication/mn139)); Small-scale Chicken Production and Keeping Village Poultry (see Resources, page 13); Improving the Performance of Local Chickens, National Agricultural Extension and Research Liaison Services, Almadu Bello University, Zaria: Extension Bulletin No.92 Poultry series No 6; Commercial Production of Village Chicken (2004) by Martha Musukwa, University of Zambia.

# 'Think like a chicken'

## Advice from a poultry expert



Will Boase/istockphoto

The best looking chickens may not always lay the best eggs or provide the best meat.

Keiron Forbes has earned the name 'Chickenologist' from travelling around the world helping people to start chicken projects, solving problems with their birds and giving advice on how to understand how chickens behave. He believes that the key to better poultry keeping is understanding how God made chickens and working with their natural instincts and behaviours to get the best out of them.

### Breeding

Breeding birds is very complicated and it is best to leave it to specialists. When breeding chickens, you need to consider the characteristics of a whole family of birds, over their whole life cycle, not just choose on the basis of an individual bird. For example, if one bird has good strong eyes and you choose him to breed with your hens, the chicks produced may still have poor eyesight. Breeders will examine whole families of chickens and might know that this bird's sister actually has poor eyesight. Our star chicken may be a carrier of bad characteristics even though he doesn't display them himself.

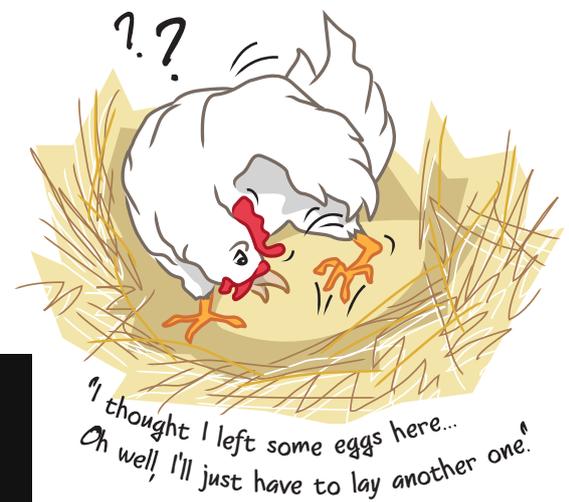
You may pick a hen who is very productive at laying eggs and assume she will be a good candidate for a breeding programme. Later in her life she may produce eggs with

poor shells but you may not have waited long enough to find that out!

Looking for the cockerel with the nicest plumage is not always the best plan. They may spend lots of their time making sure that their feathers are smooth but very little time mating with the hens. It is better to look for good mating behaviour instead and that cockerel may not have the cleanest feathers.

### Pulling eggs

For traditional breeds who roam around and do not live in hen houses, you can expect about 150 eggs during a hen's lifetime. For housed hens, that goes up to 250–300 eggs. This is because by collecting eggs, you trick the chicken into thinking it hasn't already laid an egg so it lays another one. This technique is called 'pulling eggs'. If you do not remove the eggs, the hen will



simply begin to sit on them, expecting them to hatch. This will make your egg production go down.

**EDITOR'S NOTE:** For more details on how to build a hen house and provide nests for your chickens see pages 8–9.

### Chicks becoming 'layers'

Hens that are not native to the tropics naturally begin to lay eggs in the springtime because they know that then there will be food for their chicks. But people like to eat eggs all year round. To make the hens start laying eggs at other times of year, professional rearers play a trick on the chicks. By blocking out the light or using extra lighting (depending on the season) the rearers make it seem like winter by giving the chicks ten hours of light a day. Then after 16 weeks, they add three extra hours of light and the hens think it is spring. Twenty-one days later they will begin to lay eggs.

### Chickens as gifts

If somebody comes to visit, they often bring a chicken as a gift. But this kind act hides many risks. Often people do not give away their best healthy chicken but instead pick one who is old or ill. Travelling with sick chickens puts the giver and the receiver at risk of becoming ill too. If you receive a chicken as a gift and you are confident it comes from a healthy flock then the best thing to do is to eat it immediately and share it with your guests. If you plan to keep it, do not keep it with your other birds or animals. Instead put it in a pen by itself for three weeks to see if it is healthy. Then you can let it have contact with other birds.

*Keiron Forbes is a poultry nutritionist based in Northern Ireland with 35 years' experience with poultry worldwide.*

# What should chickens eat?

Correct feeding of village poultry will not only improve their production of eggs and meat but also keep the chickens healthy – well-fed chickens will produce good food for you. A scavenging hen will lay only 30 to 50 eggs a year, but up to 90 with improved feeding and management.

Think of feeding the poultry as an extension of family food gathering duties, so that when a meal is prepared for the family, the poultry feeding is done as well.

Chickens need a mixed diet to stay healthy, just as people do. They need body-building food (protein), energy food (carbohydrate) and protective food (vitamins and minerals). For example, hens need a supply of calcium and phosphorus from bones and shells to lay eggs with strong shells in good quantities. Chickens of all ages need a constant supply of grit and bone, and clean water.

*Compiled by Helen Gaw from Kai Kokorako (see Resources page 13) and Practical Village Chicken Production (see pages 8–9).*

## FOOD FOR GROWING CHICKENS

- In the first two to three weeks of life, chicks should be given finely chopped boiled egg.
- Up to six weeks old, give chicks the same food as grown birds but chop it up in small pieces so it is easier for the chicks to eat.
- From six to eight weeks onwards provide food from the three different food groups in three different containers and allow free choice feeding. The chickens will eat according to their needs.

BODY-BUILDING FOODS	ENERGY FOODS	PROTECTIVE FOODS
Cooked fishing waste, fishmeal, animal offal, earthworms, insects, bean and groundnut (peanut) meal, oil cakes eg soya cake, sunflower cake, groundnut cake (a waste product from oil extraction)	Sorghum, sugarcane, corn, millet, cassava, sunflower, rice and other grains, boiled root crops like yam and sweet potato, animal fat, oil cakes eg copra (coconut) cake, cotton seed cake	Fresh green leaves, fresh green vegetables, grass, paw paw and other fruits, boiled crushed animal bones and eggshells, crushed oyster shells and snail shells, salt

Chickens need to be offered protective foods every day, but the ratio of body-building foods to energy foods they need depends on the age and type of the chicken. This is a guide for what you should expect to provide:

AGE/TYPE	% of body-building food	% of energy food
0 to 6 weeks old	50%	50%
Growing hens under a year old	10%	90%
Meat chickens	30%	70%
Layers and breeding chickens	20%	80%

## BIBLE STUDY

by Dr Hannah Swithinbank

The Bible is a story of God's relationship with people. In his covenant with the people of Israel, in the journey to the Promised Land and in his sending of Jesus Christ we see him reaching out to us, seeking to gather us to him, to live with him and be looked after by him.

And yet, from the very beginning, people have tried to go their own way. We often think we know better than God about what is good for us, and so we have left him, scattering to try and find it.

Like chickens, we are capable of surviving on our own: scratching around on earth, trying to survive. But, like chickens, our lives are better when we are looked after by someone – and God wants to be that someone.

### Read Luke 13:31-35

- *How does the picture of Jesus as being like a hen looking after her chicks make you feel?*

## Living under God's wings

- *Do you think that coming under God's wings and depending on him will make life easy?*
- *If not, why do you think it might be worthwhile anyway?*

Jesus' life, death and resurrection show us that it is better to make ourselves dependent on God rather than on worldly powers (like Herod) because it leads to a life that we share with him for eternity.

### Read Luke 12:22-32

- *What does Jesus say that God will provide?*
- *What do you worry about?*
- *What do you think it would mean to hand those worries over to Jesus? What would your life be like?*

In this passage Jesus is not telling his disciples that they should live irresponsibly. He is not telling them to stop farming or stop trying to make sure they have things to wear. He is telling them not to worry about these things



Ralph Hodgson Tearfund

so much that it makes their lives miserable and leads them to do things that are not a part of God's way of life to survive. They need to remember how completely God can look after them, and how much he wants us to depend on him.

*Dr Hannah Swithinbank is a Researcher in the Integral Mission team at Tearfund.*

# Marketing your poultry products: experience from Honduras

**Footsteps interviewed Rommel Romero, Coordinator of the Diakanos Programme at Proyecto Aldea Global, Honduras, to find out how his project helps people to make a living from keeping poultry.**

Proyecto Aldea Global (PAG) is a Christian NGO that has been supporting families in Honduras for more than 30 years. It works with 260 families in the Cerro Azul Meámbar National Park to improve their livelihoods through a small livestock project. As part of the project, each person who receives an animal has to pass one or more of its offspring to another family, along with the knowledge they have acquired in livestock handling and care.

Most families choose chickens because they are low cost and provide nutritious food. In order to make sure the families get the most from their chickens, PAG provides technical assistance in many aspects of poultry keeping and business.

## *How do you help people to market their poultry products?*

By encouraging them to make the most of the initiatives and opportunities that are available in their local environment, we are helping them to promote their products. We work to connect local producers with

the coordinators or organisers of fairs in local villages and towns. We also inspire them by teaching them how to add value to their products so that they not only sell eggs but also sell other products with them, such as bread and traditional dishes.

We help them come to an arrangement with individual traders in their local area to sell their eggs. The beneficiaries are taught how to conduct a cost-benefit analysis for egg production to ensure that they make a profit.

## *What are the most effective ways of marketing poultry products locally?*

The arrangements made with individual traders are very important. The egg-producing families are organised together in a group and we help them to make contact with a local egg trader who comes to the community once a week to buy the eggs.

## *How do you train people?*

We have an education and training plan that involves a minimum of five training courses over a six-month period, including:

- Production costs, sale price, profits
- Food preparation
- Bird health (cleanliness, vaccinations etc)

We use a number of different methods to train people:

- Practical demonstrations to help people 'learn by doing'
- Educational visits to learn from other people's successful experiences

## *What resources do you use to train people in poultry management and care?*

Mutual support within the community is fundamental. The training courses take place on people's own farms and they gain great encouragement from seeing each other's progress.

We also encourage the use of locally-available resources: wood, brushwood etc. Organic fertiliser is made from the hen droppings for people to use on their own farms or to sell to their neighbours. The beneficiaries contribute locally-available resources to build hen houses and also learn to make feed for the hens from locally-available produce.

*For more information, visit [www.paghonduras.org](http://www.paghonduras.org) or contact PAG by email on [info@paghonduras.org](mailto:info@paghonduras.org)*



Rommel Romero



Rommel Romero

## Calculating your profit

- How much does it cost for you to keep your poultry each month? Include the costs of feed, housing and any veterinary bills.
- How many eggs do your birds produce each month? What is the price of eggs in your local market?

It is likely that each month some eggs will break or you won't be able to sell them. Egg prices may vary from season to season or at different types of markets. You and your family may also keep some of the eggs to eat at home. Remember to include this in your calculation.

$$\begin{aligned}
 &(\text{Number of eggs laid per month}) \times (\text{Price of eggs}) = \text{Income} \\
 &(\text{Income}) - (\text{Costs of production}) - (\text{Cost of lost eggs}) = \text{Profit per month}
 \end{aligned}$$

**TILZ website** [www.tearfund.org/tilz](http://www.tearfund.org/tilz) Tearfund's international publications can be downloaded **free of charge** from our website. Search for any topic to help in your work.



## Previous Footsteps

Poultry keeping articles in previous issues of *Footsteps*:

- *Footsteps 10*: 'Village poultry production'
- *Footsteps 14*: 'Newcastle disease vaccines for village chickens'
- *Footsteps 32*: 'Home-made incubator'

## Small-scale Chicken Production

Agrodok 4, Agromisa Foundation and CTA  
ISBN 978-90-8573-069-9

Providing a wealth of useful information on how to overcome the main constraints in small-scale poultry production, this Agrodok booklet deals with threats such as predation and infectious diseases. Other chapters included in this practical, easy-to-follow handbook include advice on hatching, housing, nutrition and health.

Also available in French and Portuguese.

## Duck Keeping in the Tropics

Agrodok 33, Agromisa Foundation and CTA  
ISBN 978-90-72746-86-3

The authors describe duck breeds, their reproductive cycle, nutrition, health, egg incubation, raising ducklings, breeding, and management principles. The booklet also discusses combining duck rearing with cultivating rice and maintaining fish ponds.

Also available in French and Portuguese.

## Improving Hatching and Brooding in Small-scale Poultry

Agrodok 34, Agromisa Foundation and CTA, Wageningen, 2011  
Agromisa ISBN 978-90-8573-114-6  
CTA ISBN 978-92-9081-401-6

This updated booklet focuses on upgrading hatching and brooding practices in free-range poultry flocks in order to achieve an optimal number of chickens, implement

regular flock replacement and successfully raise the young chicks through their first eight weeks of life.

Also available in French and Portuguese.

## Improved Practices in Rearing Indigenous Chickens

CTA Practical Guide Series, No. 4  
ISSN 1873-8192

This eight-page guide helps readers to make the most of their indigenous chickens (also known as village or family chickens), covering hatching, brooding and housing as well as selling chicks, chickens and eggs. It includes a helpful section on common problems people face and how to avoid them.



Also available in Swahili, French and Portuguese.

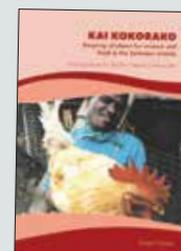
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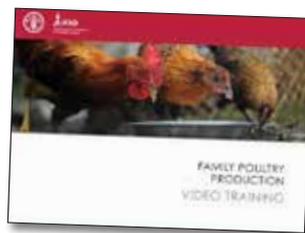
## Kai Kokorako

Keeping chickens for income and food in the Solomon Islands, produced by Training Tools for Pacific Island Communities (2004).



To download this guide, go to <http://kastomgaden.org/training/kai-kokorako>

## Online resources



### Family Poultry Production videos

The FAO have produced online presentations with a voice-over covering all aspects of family-level poultry keeping including budgeting, poultry health and how to choose the right scale of production.

To find the videos, go to [www.youtube.org](http://www.youtube.org) and search for 'Family Poultry Production FAO'.

### Keeping Village Poultry: A technical manual on small-scale poultry production

ISBN 87-990401-0-7, Network for Smallholder Poultry Development, 2004

To download this guide, search online for the ISBN code above and follow the link to the PDF.

### Egg marketing: A Guide for the Production and Sale of Eggs

ISBN 92-5-104932-7, Food and Agriculture Organization (FAO), 2003

This online guide covers all aspects of egg marketing from grading and packaging to selling to the end consumer. To download this guide, go to the FAO website ([www.fao.org](http://www.fao.org)) and search for 'Egg marketing'.

# Avian flu: prevention and control

Avian flu is an infectious viral illness that spreads among birds. It can affect chickens, ducks, geese, turkeys, guinea fowl, quail, pheasants, pigeons, “song birds” and many types of wild birds. The birds may or may not show signs of the disease; if signs do appear, they begin two to five days after the bird catches the virus.

Avian flu is a dangerous disease because it can:

- kill all poultry on a farm
- spread rapidly to other farms and to the whole country
- sometimes be passed on to humans leading to sickness and even death.

Avian flu is similar to human flu and in rare cases it can affect humans. Human deaths caused by Avian flu have been reported in Azerbaijan, Bangladesh, Cambodia, China, Egypt, Indonesia, Iraq, Laos, Nigeria, Pakistan, Thailand, Turkey and Vietnam.

## What are the signs?

Always suspect Avian flu when many birds die rapidly. They may not look sick before they die, or they may be a little depressed and/or have low food intake, ruffled feathers and fever.

The clinical signs vary according to the strain of the infecting virus, the poultry species and age, as well as other diseases that may be present in the environment.

Signs include hens laying soft-shelled eggs, watery diarrhoea, excessive thirst, breathing difficulties, general weakness, swollen dark coloured combs and wattles, bleeding on unfeathered skin and looking sleepy with droopy heads.

## How does Avian flu spread?

There are many ways in which Avian flu can spread including direct and indirect contact with infected birds:

**DIRECT CONTACT** can happen if infected birds are bought at market, received as gifts, or even carried to the farm by dogs. Direct contact with infected wild birds can also spread the disease. Don't forget, infected birds might not look sick! Ducks or hens that roam free and may interact with infected birds away from the farm are also at risk.

**INDIRECT CONTACT** can happen if people visit from an infected farm or homestead. People can bring the disease on their clothes, shoes, boots, vehicles (eg wheels

## How can I prevent Avian flu?

Basic principles of hygiene will help to protect your poultry from Avian flu. If there is no known outbreak in your area some simple principles will help to keep your birds safe:

- **Keep the poultry in good condition** because fit and healthy poultry with a good clean food and water supply and good housing are less likely to catch Avian flu.
- **Keep the poultry in a protected environment** – for example in a closed building, fenced park, or protected farmyard. Poultry that roam free are at higher risk.
- **Control all entries to the farm**

of a motorbike), carrier bags etc. People who work in a live bird market, at a slaughterhouse or in a laboratory where the virus is present may also carry the disease. Infected manure can also bring disease with it, and ponds can become infected too.

## Treatment

There is currently no treatment for Avian flu so we need to focus on preventing the disease from reaching poultry in the first place.

## WHAT SHOULD I DO WITH SICK BIRDS?

- Never eat sick birds.
- Sick birds should be put in a fully closed building with no contact with any other animal. All dead birds and other contaminated objects (for instance: manure, eggs, blood, feathers, egg crates) must be destroyed properly as soon as possible on the same day by:
  - BURNING** Place all the birds and objects in a recipient, add some petrol, and light a fire.
  - BURYING** Dig a hole in the ground (far away from wells, ponds and other animals); put some quicklime at the bottom and on the edges of the hole; put all the birds and objects in the hole; cover with quicklime; then cover with earth.
  - WARNING:** quicklime is highly caustic and will burn you if you touch it.



Avian flu affects many types of birds.

## WHAT SHOULD I DO WITH HEALTHY BIRDS?

- Birds that look healthy can be kept alive as long as they are kept in a fully closed building, with no contact with any other animal.
- The veterinary authorities may suggest culling these birds immediately if the risk is too high or if laboratory tests show they have Avian flu.
- A farmer should never sell nor give away these birds or the eggs even though they may look healthy! If they do they put themselves and others at risk.

*Adapted from Prevention and Control of Avian flu in small scale poultry: A guide for veterinary para-professionals in Cambodia, jointly published by the Food and Agriculture Organization ([www.fao.org](http://www.fao.org)) and Agronomes et Vétérinaires Sans Frontières (Agronomists and Vets Without Borders [www.avsf.org/en](http://www.avsf.org/en))*

## Outbreak on Mrs Tha's farm

Below is an example of the steps that should be followed if you suspect an outbreak of Avian flu.

### SUNDAY

18.00 Mrs Tha feeds her 20 chickens. They all look normal.

### MONDAY

07.00 Five chickens are dead and the others are weak.

08.00 Mrs Tha washes her hands and sandals and then goes to the house of the paravet (animal health worker).

09.00 The paravet picks up some disinfectant and goes to Mrs Tha's house.

09.30 The paravet arrives and leaves his motorbike at the farm gate.

09.35 The paravet looks at the poultry (alive and dead). He asks Mrs Tha some questions. He learns many chickens died the previous week at the house next door. He thinks that it may be Avian flu or Newcastle disease. He explains to Mrs Tha what must be done.

10.00 Mrs Tha puts the dead chickens in plastic bags. She closes the plastic bags and places them in a protected area (away from the house, from other animals, from the well). She keeps the live birds in a protected place (a poultry pen or fenced park).

11.00 The paravet prepares a solution of commercial disinfectant in a bucket. The paravet goes to the farm gate, washes and brushes his hands and his sandals in the bucket, and also washes the wheels of his motorbike. Mrs Tha puts small tools and equipment which might carry the virus in the bucket. Mrs Tha agrees to control the entry and exit of people and animals to and from her farm. Mrs Tha puts some quicklime on the affected poultry house, and everywhere the poultry may have walked during the last few days. She checks that all animals are kept in their pens.

11.30 The paravet goes immediately to inform the village chief and telephones the regional veterinary authorities to inform them about the disease. He gives them detailed information of what he has seen and what he has done. They agree to send someone to discuss the situation and take some specimens for laboratory testing.

15.00 The District Veterinary Officer (DVO) arrives at Mrs Tha's house with the paravet. The DVO and the paravet follow the agreed process before entering the farm to avoid spreading the virus.

The DVO opens the bags and examines the dead birds to work out how they died (this examination is known as a post-mortem). He takes specimens from both dead and live birds. During these operations, the DVO and others wear gloves and face masks.

16.00 The DVO asks Mrs Tha the following questions: Who has entered your farm during the past three weeks and where have they gone afterwards? What animals have been purchased during the past three weeks and where did they come from? What animals have left your farm during the last three weeks and where have they gone?

17.00 The DVO advises Mrs Tha not to move any animals on or off the farm, as well as to reduce the movement of people on or off the farm and to cull the remaining animals before getting the laboratory results. Mrs Tha agrees.

17.30 The DVO goes to the next house to ask the same questions and to see if there are still live animals there. He finds some so he also takes samples and advises the farmers to keep the animals in a protected place.

19.00 Back at the office, the DVO calls the Provincial Department of Animal Health to inform them. Specimens are stored in the fridge at the DVO's office. The DVO prepares a brief report to send alongside the specimens for the laboratory.

### TUESDAY

The DVO calls Mrs Tha to give her the results from the laboratory. He confirms that Mrs Tha's birds have died of Avian flu. The DVO thanks her for her quick reporting and assistance. He also offers support to help her to control any further spreading of the disease.

# Ducks

**Ducks, like other poultry, can be used for their meat and their eggs. There are many ways of raising ducks. The simplest method requires little capital input, where ducks are raised in the farmyard as part of a mixed farm.**

In order to decide how to raise ducks, a farmer or extension worker needs to ask a number of questions:

- Are the ducks intended for your own use or do you also want to sell duck products? If you are considering keeping ducks in order to sell their products it is important to know whether there is a market for the eggs or meat.
- Will duck rearing fit in with the rest of your activities? Do you have room for ducks? Not only do you need room for shelter and a water supply for the ducks, but their daily care also takes time and may get in the way of other activities.

## Case study – Cambodia

Chantha Im and Savorn Rath are married and have three daughters. They live in a village in Cambodia and used to raise ducks in a traditional way; releasing them during the day to go into the fields to look for food. But this method was full of problems: their ducks grew very slowly, often suffering from diseases and sometimes dying without the family knowing why. Members of the family often got ill themselves.

In 2009, a local NGO called the Wholistic Development Organization started a holistic community development project in the village. After attending a course, Mr Im started planting vegetables, feeding some to his family and some to the ducks. He also learnt how to improve the way he raised his ducks and chickens. He started putting a mosquito net over the hen house

at night, began feeding his ducks three times a day with organic feed and vegetables left over from his kitchen and built houses for all his birds. After six months the family's ducks had grown to two or three kilograms and they could sell them at a good price. With the money they got from selling the ducks, they were able to buy fertilizer for their rice paddy, a television, a mobile phone and other materials for use in the kitchen. The whole family benefited as his daughters were also able to finish high school.



*Written by Mrs Chhenglang Nget, translated by Yauk, Kunthea Sambo*



Ducks can be used for their meat and their eggs.

- Where will you get your ducklings in order to maintain a stock? Will you breed them yourself or will you buy ducklings when you need them? If you plan on buying them, can you be sure there will be a regular supply in the future?
- What will you feed the ducks? Where can you obtain feed? Do you have sufficient food available on your own farm or will you have to buy some types of feed? Ducks are capable of scavenging a large part of their food for themselves but it is often necessary to give them extra in the dry season. If ducks are free range they are more likely to suffer from a shortage of vitamins and minerals.

## Advantages of ducks compared with chickens:

- Ducks are tougher than chickens; they require less attention than chickens and are less likely to be sick than chickens.
- Ducks are larger than chickens, so if they are reared for meat there will be more to sell. Duck eggs are also larger than chicken eggs.
- Ducks do not necessarily need supplementary grain and maize.
- Chickens normally do need supplementary high quality feed. Ducks eat more vegetable material and insects than chickens. Ducks also eat snails.

## Disadvantages of ducks compared with chickens:

- Ducks are water birds and need water to be able to breed and grow well. A pool or pond of water can take up a lot of room. A trough of water can also be provided so that ducks can bathe. Pools, ponds, troughs or tubs of water all need to be kept clean and hygienic.
- Muscovy ducks (sometimes called Barbary ducks) have less need to cool themselves and so have less need for a constant supply of bathing water. Peking ducks come originally from colder climates and live near to water. These ducks need water to keep their body temperature at the right level.

*This information has been adapted from Agrodok 33: Duck Keeping in the Tropics by S.J. van der Meulen, G. den Dikken, Agromisa Foundation, Wageningen, 2004. Find out more about this publication, including how to order or download it, on page 13.*