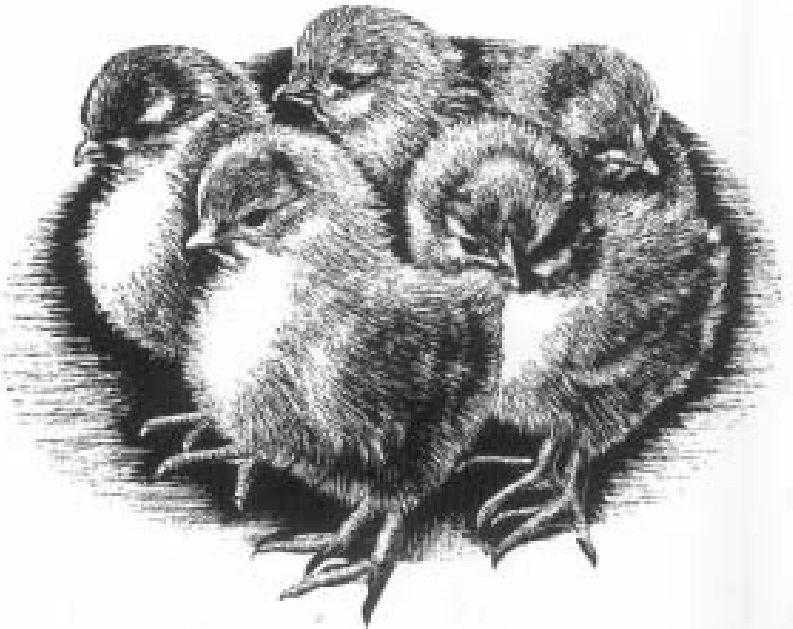




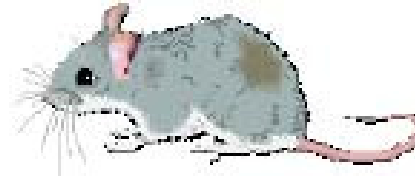
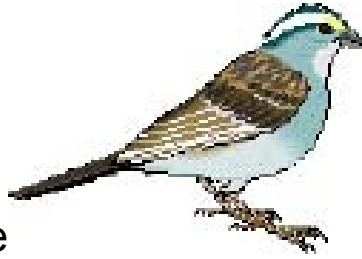
DEPARTMENT: AGRICULTURE

## Disease prevention in chickens



**M.S.K. Mashishi**

Diseases may enter the chicken flock *via* many sources:



- people
- other birds
- rodents
- insects
- feed and equipment.

These diseases will result in sick chickens that are less productive or that could die.

For disease prevention all the measures should be applied together. For example, chicken health will not improve if vaccination is done but the housing management and hygiene are poor.

The following measures are important for disease prevention in chickens.

## HOUSE MANAGEMENT

- The *design* of the house is very important. It should be easy to clean and disinfect. Cracks should be filled so that germs and parasites cannot survive there. The house should also be bird and rodent proof. Rodents (rats and mice) contaminate the feed with their faeces and therefore make it difficult to control salmonellosis in chicken houses.



- There should be *good ventilation* to prevent build-up of ammonia. Excessive dust and draughts can cause respiratory problems in chickens.

- Where possible an *all\_in all\_out system*, where chickens of the same age are kept in one house, should be used. Between batches the house should be thoroughly cleaned and disinfected and left to dry out completely. This system is effective in controlling diseases that do not survive long outside the host (chicken).

- Strict *measures* should be taken to control movement of people and chickens between different houses. People entering the chicken house should have their boots disinfected in a footbath placed at the entrance.

## HYGIENE

- Litter should be removed and dumped in a suitable area away from

the chicken houses. Houses should be cleaned, using high-pressure waterjets and soap. After rinsing the soap, a disinfectant should be applied.



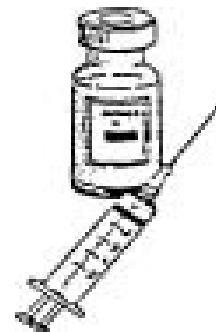
- All equipment used should also be cleaned and disinfected before a new flock enters the house.
- Good drainage should be a priority because standing waterpools can increase the risk of diseases and insect problems such as mosquitoes that can spread a viral infection called pox.

## VACCINATION

Vaccination can be used to prevent many diseases. There are different ways of vaccinating chickens; spray, drinking water, injection and the eye-drop method.

Some vaccines must be given using a specific route, for example, pox vaccination is only given *via* a wing-web-stab method, not in drinking water or in the eye.

- Only healthy chickens should be vaccinated.
- The vaccine should be used as soon as possible after mixing.
- The vaccine should not be exposed to sunlight but should be kept cool.



- It is important to note these points because vaccination failures may result if these aspects are neglected.

## Spray vaccination

With this method the vaccine is mixed with clean, cool water that has no soap or disinfectant residue. Add 2 to 4 g of skimmed milk powder to 1 l of drinking water. The mixture is left to stand for 30 minutes before the vaccine is added.

The chickens should be sprayed in the early morning before it is too hot. Curtains should be raised to prevent wind from scattering the vaccine droplets. Special sprayers are also used.

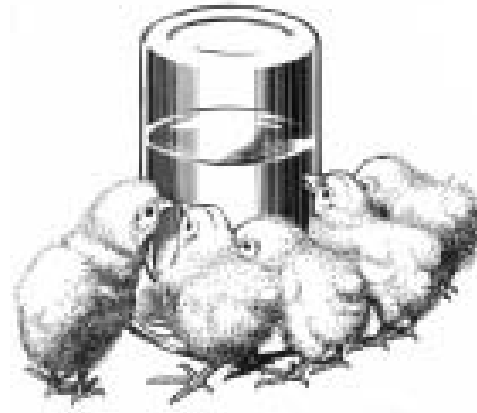
## Eye-drop vaccination

This method is regarded as the best for obtaining good protection but is more labour intensive because all the chickens must be caught.

The vaccine is dissolved in water before being given. One drop is given in one eye only.

## Vaccination *via* drinking water

With this method the vaccine is mixed with water and then poured in the drinking equipment used.



To ensure the uptake of vaccine water by the chicken, water should be removed for about 2 hours before vaccinating so that chickens are thirsty enough when the vaccine water is given. In very hot weather it may not be necessary to hold back the water.

Make sure that there are enough places for drinking.

You may have to put in more drinkers for vaccination. Ordinary water should be given after the vaccine water is finished.

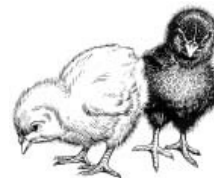
## SOURCES OF CHICKENS

If you buy day-old chicks from the supplier, make sure that they are vaccinated against Newcastle disease and infectious bronchitis.

Chickens bought at auctions or other farms may be a source of infection when introduced to a new flock of chickens.

## OTHER

If any mineral or vitamin deficiency is suspected supplements should be provided.



Free-ranging chickens should be dewormed regularly because they can pick up worms when searching for food.

**For further information contact your animal health technician, state or private veterinarian**

**or**

***Animal Health for Developing Farmers***  
**ARC-Onderstepoort Veterinary Institute**  
**Private Bag X05, Onderstepoort 0110**  
**Tel. (012) 529 9158**

**or**

**Resource Centre, Department of Agriculture**  
**Tel. (012) 319 7141/7085**

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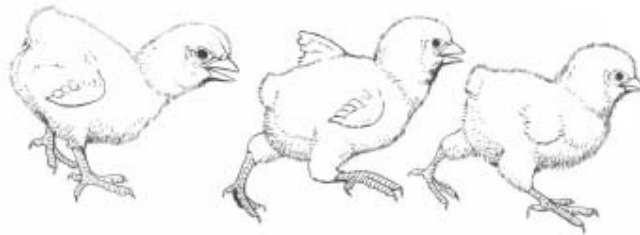
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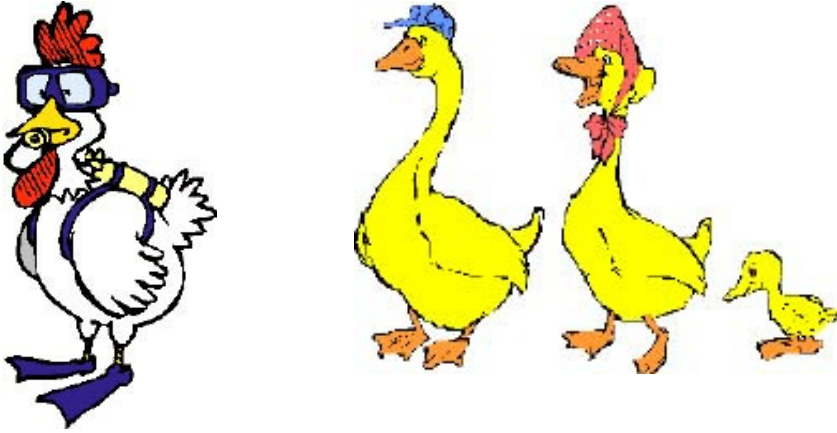


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**DEPARTMENT: AGRICULTURE**

## **POULTRY DISEASES**



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**Poultry are kept all over the world for various reasons. They are one of the cheapest sources of meat and can be kept by anyone, even in backyards. In South Africa poultry are kept by large commercial farmers for meat or egg production, by smaller farmers and by house holds in backyards**

**Two very important factors that should be addressed to ensure that you have a healthy flock of chickens are management and environment. When chickens are healthy they eat less food and produce more meat and eggs. They are less trouble to look after and less money is spent on medical costs.**

### **SPREAD OF DISEASE**

**A disease can spread rapidly among chickens because they are usually kept together in a cage or chicken house. They also share the same food and waterbowls, which can spread disease and infections from sick to healthy chickens.**

**In an intensive system we place a great deal of pressure on the chickens to grow fast and to lay many eggs. This situation can cause disease to spread resulting in a lot of damage because of the stress the chickens experience**



## **FACTORS CONTRIBUTING TO DISEASE**

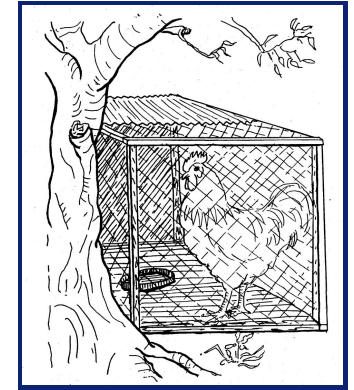
**Factors that can contribute to disease include management, environment and the chickens themselves**

### ***Management***

- **Poor-quality food and water**
- **Poor hygiene and inadequate cleaning programme**
- **Leaking water bowls**
- **Rat and fly problems**
- **Overcrowding of chicks**
- **Chickens of mixed ages reared together**
- **No security measures to prevent people and animals from entering the chicken house**

## *Environment*

- **Too hot or too cold conditions**
- **Wet litter**
- **Dusty bedding**
- **High build up of chicken droppings**
- **No air circulation**
- **Sharp wires in the cages**



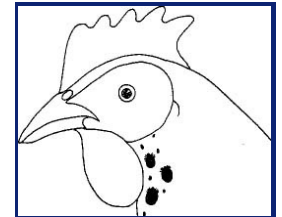
## *Chickens*

- **Young chickens**
- **Weak second-grade chickens**
- **Chickens affected with other diseases**
- **Poor condition as a result of underfeeding**
- **No vaccination**

## **ACTIONS AT FIRST SIGNS OF DISEASE**

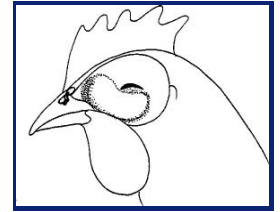
**You must act quickly at the first signs of disease. The chickens must be treated, and management that may have led to the problem must be corrected to prevent the disease from occurring again**

- **Consult your animal health technician or veterinarian to help you find a correct solution to your problem as soon as possible**
- **Call your animal health technician or veterinarian. They will kill some of the sick chickens and cut them open. They will also cut open dead chickens and take samples. They may take blood or egg**



**samples, depending on the disease. The samples taken will be sent to a laboratory.**

- **You and your animal health technician or veterinarian should then go through the entire system to identify possible problems in the management and environment that can be corrected**



## **GENERAL TREATMENT**

- **There are not many forms of treatment or in certain cases no treatment for some diseases, which is why prevention is so important**
- **The treatment will depend on the cause of the disease**
- **If it is at all possible, try to separate all sick chickens from the healthy ones daily. The sick chickens should be handled and treated last to prevent the spread of the disease**
- **Correct management problems**

## **GENERAL PREVENTION**

**Diseases can be prevented through management, environmental and chicken factors**

### ***Management***

- **Apply correct methods for raising young chicks (temperature, food, water, bedding)**
- **Disinfect and clean the housing of the different groups of chicks**
- **Maintain the correct stocking density (avoid over-crowding)**
- **Use the best-quality food that is available and provide clean water daily**
- **Use bedding that is not dusty**
- **Prevent the buildup of gases by cleaning and ventilation**
- **Control rats and flies**
- **Ensure that no people from outside your farm visit the chicken house**
- **Have bird-proof houses to keep out wild birds that eat the food and bring diseases to your chickens**

## *Environment*

- **Ensure that the building or house you are going to use is large enough for the chickens**
- **Fix leaky watertroughs**
- **Feed and waterbowls should be cleaned daily and fresh food and water should be supplied**
- **Houses should be warm in winter and cool in summer and well ventilate**
- **Dust causes irritation of the respiratory tract and the environment must therefore not be dusty**
- **Use cages for laying hens that do not have sharp edges that can injure the hens. Make sure that there is sufficient space per hen**

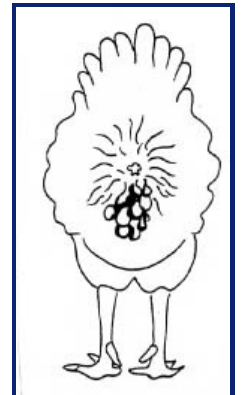
## *Chickens*

- **Get only first-grade chicks from a good, reliable supplier**
- **Vaccinate chicks against important diseases**
- **Keep chickens of the same age together in one house**

## **DIARRHOEA**

### *Signs in sick chickens*

- **Diarrhoea (also known as scours or dirty vent). The stool or droppings of the chickens are not firm but very loose, watery, not of the normal colour and may contain blood.**
- **This may cause the feathers of the vent to be soiled and caked together**
- **Depression**
- **Reluctance to eat, drink and move about**
- **Poor growth**
- **Death**



### *Signs in dead chickens*

- **Poor condition**
- **The intestines may be red and swollen and the contents watery**
- **There may also be a yellow butter-like substance around the heart, liver and intestines**

### *Causes*

**There are many different types of organisms that can cause diarrhoea, which include:**

- **Bacteria (*Salmonella, E. coli, Pasteurella*)**
- **Viruses (Newcastle disease, gumboro disease)**
- **Parasites (coccidiosis, worms)**
- **Fungi (*Candida, Aspergillus*)**

### *Treatment*

- **Use an antibiotic or coccidiostatic drug in the water that was recommended by the animal health technician or veterinarian in the water for 3 to 5 days.**
- **Stress preparations that contain electrolytes, vitamins and minerals can be added to the water.**

## **UPPER RESPIRATORY DISEASES**

### *Signs in sick chickens*

- **The sinuses of the chicken (the area between the eye and the beak) are swollen. These may be swollen in such a way that the eyes are closed.**
- **Tears and wetness often occur around the eyes and nostrils. The discharge from the nostrils may look like clear water in the early stages but can become cloudy and yellow when secondary bacterial infections cause complications.**
- **Sneezing**

- **Coughing**
- **Difficulty in breathing. They breathe with an open beak and you can hear a snoring or clicking sound**
- **Loss of appetite**
- **Weakness**
- **Weight loss**

### *Signs in dead chickens*

- **A very red windpipe and throat**
- **Fluid in the windpipe**

### *Causes*

**There are many different types of organisms that can cause disease in the upper respiratory tract. These include:**

- **Mycoplasma**
- **Bacteria (*E. coli*, *Pasteurella*, *Haemophilus*)**
- **Viruses (Newcastle disease, influenza, infectious bronchitis, infectious laryngotracheitis)**
- **Parasites (mites and worms)**
- **Fungi (*Aspergillus*)**

### *Treatment*

- **Use an antibiotic drug that was recommended by your animal health technician or veterinarian in the water for 3 to 5 days**
- **Stress preparations that contain electrolytes, vitamins and minerals can be added to the water**

## **NERVOUS SIGNS AND LAMENESS**



## ***Signs in sick chickens***

- **Signs may vary, but usually chickens lie down because they cannot stand up**
- **They also walk with a limp or are reluctant to move**
- **Nervous signs may include staring into the sky, not knowing where they are, pulling the head and neck over their backs, paralysis**
- **Sores on the breast muscles from lying down**

## ***Causes***

**There are many different types of organisms that can cause nervous signs and lameness. These include:**

- **Bacteria (*Salmonella*, Botulism)**
- **Viruses (Newcastle disease, Marek's disease, avian encephalo- myelitis)**
- **Fungi (*Aspergillus*)**

## ***Treatment***

- **A complete hygiene and disinfection programme should be planned together with the animal health technician or veteri- narian**
- **Antibiotics will only be effective against bacteria and can be used as recommended. If it is a viral disease, such as Newcastle disease, urgent steps have to be taken to prevent possible spread because it causes serious production losses**

## **DROP IN EGG PRODUCTION OR QUALITY**

- **You will notice that the hens are not producing as many eggs as they should for their age**
- **You may see unusually-shaped eggs, eggs with no shell, soft eggs, eggs that break easily, or that have abnormal contents when you break them**

- **Often the people buying the eggs will complain of poor quality**
- **The only way these changes will be noticed is if you keep good records**

### *Causes*

**There are many different types of organisms that can cause a drop in egg production or quality. These include:**

- **Bacteria (*E. coli*, *Salmonella*)**
- **Mycoplasma**
- **Viruses (Newcastle disease, influenza, infectious bronchitis, infectious laryngotracheitis, avian encephalomyelitis, egg drop syndrome)**
- **Parasites**

### *Treatment*

- **Your animal health technician or veterinarian may recommend a short course of antibiotics but usually it may only help for bacterial infections**
- **Adding vitamins and minerals to the water or feed may help**

## **NEWCASTLE DISEASE**

- **Newcastle disease is probably the most important disease for poultry farmers around the world. This is a production disease that causes a large number of deaths in chickens and huge losses to farmers and the industry**
- **Because there is no treatment and the disease spreads so quickly, sick chickens should be slaughtered immediately**
- **This disease is caused by a virus**

## *Signs in sick chickens*

- **A large number of chickens will die suddenly without any of the following apparent causes:**
  - **Depression**
  - **Nervous signs**
  - **Sneezing, swollen eyes, difficulty in breathing**
  - **Diarrhoea**
  - **Death**

## *Treatment*

- **There is NO treatment for the disease and all the chickens may die within a few days. Very few chickens survive**
- **It is best to prevent the diseases by good management and a vaccination programme**
- **Your animal health technician or veterinarian will give you the best advice in a Newcastle disease outbreak, especially as this is a controlled disease**

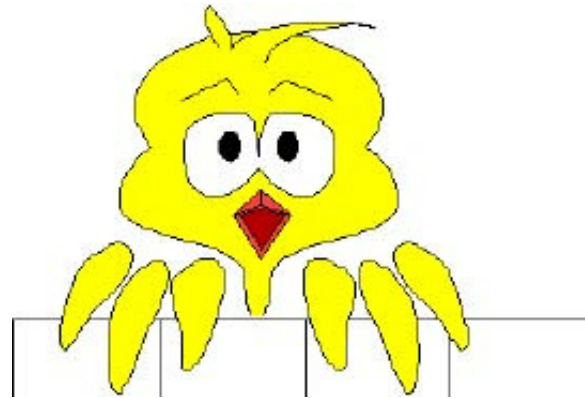


## *Prevention*

- **You should vaccinate all the chickens against this disease by using a good vaccination programme before any signs appear**
- **It is a very contagious disease, which means it spreads easily to other farms. You should not visit your neighbours without washing and putting on new clothes and shoes. You should also recommend that your neighbours vaccinate their chickens as soon as possible**
- **You should clean the chicken house thoroughly with soap and water. All equipment must be washed. Everything should then be disinfected. You should also wash and disinfect your clothes and shoes. All chicken litter or dead chickens should be burned to prevent the spread of the disease**

**For many poultry diseases there is still no treatment.**

**Prevention is therefore the only option!**



For further information about the recognition, prevention and treatment of diseases in your poultry, speak to your animal health technician or veterinarian

or

*Animal Health for Developing Farmers*  
ARC-Onderstepoort Veterinary Institute,  
Private Bag X05, Onderstepoort 0110.



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DEPARTMENT: AGRICULTURE

**Disease prevention  
in chickens**



**M.S.K. Mashishi**

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◆ people

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❖ Good drainage should be a priority because standing waterpools can increase the risk of diseases and insect problems such as mosquitoes that can spread a viral infection called pox.

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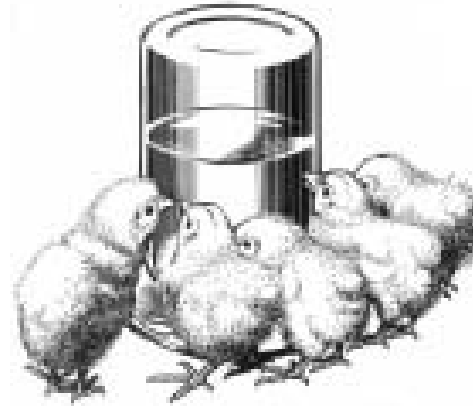
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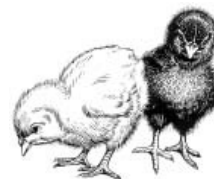
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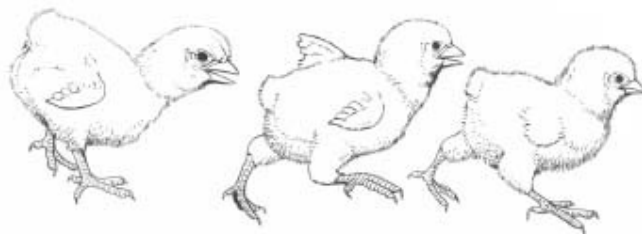
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