

### Lesson 5: Health Issues

Maintaining poultry flock health is important in the poultry industry. The greater the number of birds, the greater the risk of disease in the flock. Risks from viral and bacterial diseases and parasite infestation are ongoing problems. Through improved sanitation and medical technology, producers can maintain a healthy flock.

#### Maintaining a Healthy Poultry Flock

Good management of the poultry flock is very important in raising a healthy flock. A good preventive maintenance program reduces flock stress and prevents disease. The poultry flock should be checked daily for any signs of disease. Any changes in feed and water consumption could be a sign of a disease outbreak.

Strict sanitation guidelines should be followed. Housing and equipment must be thoroughly cleaned and disinfected between each new group of birds. Flocks used for different production purposes should be isolated from each other. It is advisable to bring all the birds onto the farm at once and remove them all at the same time. To avoid bringing in outside diseases, only the caretaker of the flock should enter the housing area. Clean overalls and disinfected footwear should be worn. Visitors should be kept to a minimum. Facilities should be free of parasites, lice, mites, and rodents.

Clean, fresh water should be available at all times. Feed should always be easily accessible and set up to reduce competition among the flock as much as possible. The feeders and waterers should be kept clean. Use adequate ventilation to reduce moisture and buildup of noxious gases. A vaccination program to reduce outbreaks of disease should be maintained. All dead birds should be removed immediately and disposed of by incineration, pit, and deep burial according to guidelines established by the United States Environmental Protection Agency (EPA) and the Missouri Department of Natural Resources.

#### Prevention and Control of Common Viral Diseases

Viral diseases are microorganisms that require a living cell to survive and duplicate themselves to spread the virus. Viruses can be passed through contaminated equipment, food, clothing, in the air, or through other animals. A virus can easily enter an animal's system through the openings in the body, i.e., eyes, mouth, vent, skin, nose, or through the pores of an egg. Viruses are extremely resistant to sanitation products, which make them even more difficult to control and prevent. Antibiotics cannot kill a virus.

##### *Common Viral Diseases in Poultry*

Marek's Disease, also referred to as range paralysis or acute leukosis, affects many different birds but is very common in chickens. The virus is concentrated in the feather follicles and is shed in the dander (sloughed skin and feather cells.) Internal lesions cause massive internal tumors and can result in sudden death. Other symptoms include significant weight loss, diarrhea, and paralysis in the legs, wings, and neck. Most birds are affected between the ages of 6 to 16 weeks. This disease is found all over the world and once it is transmitted there is no treatment. To prevent the onset of Marek's disease, day-old chicks should be vaccinated at the hatchery.

Newcastle disease affects several species of birds, including turkeys and chickens. It is highly contagious and can infect the whole flock within three to four days. Symptoms in young birds include respiratory problems, such as difficulty breathing, sneezing, and gasping. This may be followed by nervous disorders, such as paralysis and tremors. In adult chickens, the respiratory problems are more evident. They may also show a reduction in egg production and shell quality decreases. Symptoms in turkeys are usually mild and may be unnoticed unless nervous disorders develop. There is no treatment for Newcastle disease but vaccination is a successful treatment.

Avian influenza affects the respiratory and nervous systems of both turkeys and chickens. Major symptoms include coughing, wheezing, and gasping for

## **Introduction to Poultry Production**

air. Diarrhea and nervous problems may also suggest avian influenza. Laying hens may produce significantly fewer eggs or misshapen eggs. The death rate is low. There is no vaccine, but the use of antibiotics may help reduce secondary infection. Good management helps in prevention.

Fowl pox affects chickens, turkeys, and other birds. The infection is spread slowly by mosquitos and direct and indirect contact among the fowl. Symptoms include scabbing around the featherless parts of the body, such as the comb, wattles, ear lobes, and eyes. Yellow sores may also be found in the mouth and respiratory tract. Affected younger birds will grow slowly and layer hens produce fewer eggs. There is no treatment, but the disease can be prevented by vaccination.

Infectious bronchitis only affects chickens and is considered the most contagious of poultry diseases. It is spread through the air and through contact with clothing, crates, and equipment. Symptoms are confined to the respiratory system and include difficulty breathing, gasping, sneezing, and watery nasal discharge. Death rates of young chicks less than three weeks of age are high. Laying hens may have a dramatic drop in egg production and lay soft-shelled eggs. It is important to vaccinate laying hens. There is no effective treatment for this disease. Ideal environmental conditions are helpful.

Laryngotracheitis mainly affects older chickens. Symptoms include coughing, sneezing, gasping, and weepy eyes. The death rate is high. Laying hens have a reduction in egg production and soft-shelled eggs. Vaccination is available for prevention. No drug treatment is effective.

### **Prevention and Control of Common Bacterial Diseases**

Bacterial diseases are caused by single-celled, microscopic organisms. Bacteria require certain environmental temperatures, moisture, and nutrition to multiply. Some bacteria are necessary for proper food digestion. Bacterial diseases that are detrimental to animal health need to be isolated to reduce transmission. Bacteria are easily transmitted through

the air, contaminated feed, clothing, equipment, soil, and other diseased animals. Bacterial vaccines are used to prevent hazardous bacteria from multiplying. An immunity to the vaccine may develop so effective measures to maintain a sanitary environment must be developed.

### *Common Bacterial Diseases in Poultry*

Pullorum disease affects both chickens and turkeys but other fowl can be infected. A hen passes the bacteria to her chicks via the egg and then can be spread by contaminated chicks from one to another in the hatchery. Most outbreaks occur in chicks less than three weeks old. Infection in young birds results in ruffled feathers, labored breathing, a chilled appearance with birds huddling together for warmth, and white diarrhea. The disease results in high losses in production due to death of chicks and the survivors can contaminate unaffected birds. The best prevention has been to do blood tests of the breeder flocks and cull the birds that carry the bacteria. Treatment of the disease includes administering many different types of antibiotics and maintaining sanitary facilities.

Colibacillosis (coliform infections) is caused by strains of the *Escherichia coli* (*E. coli*) organism. *E. coli* is common in intestinal tracts and feces of poultry and is a common organism in the birds' environment. Infections range in severity from mild to severe and can result in respiratory disease, blood disease, intestinal infection, or a combination of any or all conditions. Common symptoms include fever, ruffled feathers, diarrhea, and labored breathing. In severe cases, death may occur suddenly and spread through the flock quickly. Infected birds need to be isolated quickly. Sanitation and management practices that reduce organisms in the birds' environment are necessary.

Fowl cholera is the most hazardous infectious disease of turkeys but also infects chickens and many other birds. The organism enters tissues of the mouth and upper respiratory tract. It is not transmitted through the egg. Animals other than birds can be carriers of the disease. Symptoms of the disease include loss of appetite, rapid weight loss, lameness, swollen wattles, difficult breathing, yellowish or green diarrhea, and

development of a purple-colored comb. Medicine exists to lessen the disease but it is not always successful and the birds continue to be carriers of the disease. A rigid sanitation program must be followed to aid in the prevention of the disease.

Infectious coryza (roup) is a respiratory disease that affects many older chickens. Outbreaks usually occur from the introduction of infected or carrier birds into a flock. Once a flock is infected, all birds must be considered carriers. Symptoms include a swollen face around the eyes and wattles, nasal discharge, and sneezing. The disease results in decreased feed and water consumption and egg production is reduced. Antibiotics are helpful for treating the symptoms but the best way to combat the disease is to cull all carriers in the flock. Good management and sanitation with thorough cleaning and disinfecting will eliminate the disease.

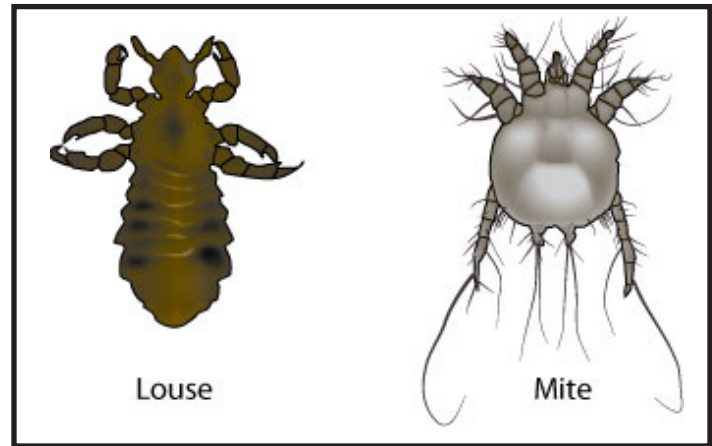
### Prevention and Control of Common Parasites

A variety of internal and external parasites cause disease in poultry. Parasites are multicellular organisms that feed off another organism or host. They can be internal or external. Parasites are easily transmitted through contaminated feed, equipment, clothing, and other animals. They consume the nutrients needed to maintain health from the host animal and may eventually cause death. They can survive without a host for a long time and can flourish in hot and humid conditions or cold and dry conditions.

External parasites cause stress to the birds and can cause weight loss and reduce egg production. This results in lower quality and market value. In severe cases, high mortality rates can occur in young poults. The most serious categories of external parasites are lice and mites. Lice (plural for louse) are flat, wingless, fast-moving insects that bite or suck their host. Symptoms are frequent picking, pale head and legs, and loss of weight. Mites are blood-sucking insects that transmit diseases and cause scabbing. Symptoms include reduced egg production, slow growth, damaged feathers, and even death. Prevention of mites and lice

includes periodically inspecting the birds for any signs of external parasites. Effective treatment is administered via dusts and sprays.

Figure 5.1 - Louse and Mite (magnified)



The most common type of internal parasite is intestinal worms that primarily affect birds raised on the range. Worms come in many varieties such as the tapeworm, large roundworm, and gapeworm. They live in the intestines and linings of the bird and cause slow growth and lower production. Treatments for worms are available for each specific type of worm. The flock should be checked periodically for the presence of worms. Rotating flocks raised on the range and maintaining a strict sanitary environment is the best prevention for worms.

### Importance of Biosecurity

Biosecurity is a practice designed to prevent the introduction of diseases or parasites into the poultry production operation. This practice will reduce the risk of outside sources of biological organisms, such as viruses, bacteria, and parasites from contaminating the flock. Biosecurity has three major components: isolation, traffic control, and sanitation.

Isolation is the practice of controlling the environment by separating birds by age group. An all-in, all-out system is when a producer brings in all of the birds at the same time and at the same age. The producer then markets the birds at the same time and thoroughly cleans, sanitizes, and prepares the facilities for the incoming flock. Isolation practices also keep out unwanted animals that can carry disease organisms.

## Introduction to Poultry Production

Traffic control includes both the traffic on the farm and the traffic patterns within the farm. Only authorized personnel should be allowed in or around the production facilities. Vehicle traffic should be kept to a minimum with necessary vehicles cleaned and sanitized before entering the premises.

Sanitation involves the disinfection of materials and equipment entering the farm and the cleanliness of personnel on the farm. For example, employees should shower on their way in and on their way out when moving from one unit to another, wear special clothing to cover skin and hair, or step in detergents that kill microorganisms when entering and exiting rooms within the unit.

### Summary

To maintain a healthy poultry flock, a good preventive maintenance program must be carried out to reduce flock stress and prevent disease. Proper sanitation and clean, fresh food and water are important to maintain flock health.

Common viral diseases include Marek's disease, Newcastle disease, avian influenza, fowl pox, infectious bronchitis, and laryngotracheitis. Common bacterial diseases include pullorum disease, colibacillosis, fowl cholera, and infectious coryza. Many viral and bacterial diseases can be controlled with vaccines. Good sanitation and disinfection are the best ways to reduce poultry diseases.

External parasites, such as lice and mites, and internal parasites, such as worms, are easily transmitted. The flock needs to be checked periodically for any infestations of parasites and treated accordingly.

Biosecurity will reduce the risk of outside sources from contaminating the flock with viruses, bacteria, and parasites. Important components to observe in biosecurity are isolation, traffic control, and sanitation.

### Credits

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