

# **Practical Management of Health Issues in a Poultry Production System: Symptoms, Sources, and Prevention of Common Diseases**

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## **Introduction**

In order to operate a profitable commercial poultry production system, a good disease prevention program is essential. Flocks that face chronic diseases do not perform very well and are more costly to maintain. This article will provide a list of symptoms to help to diagnosis disease, discuss the sources of disease, and suggest some good biosecurity measures to prevent the outbreak of disease.

## **External Symptoms for Diagnosing Diseases**

Accurate and early diagnosis of disease in a flock could mean the difference between the loss of a few birds and the loss of an entire flock. It could also alert the aviculturist to the possibility of a recurring disease or problem that must be addressed. The ability to treat the birds as early as possible is important in today's commercial production systems because the birds grow very fast. If the birds become too seriously affected by disease, they may never have the opportunity to recover well enough to perform, production-wise, at an acceptable level because their normal production life-span is so short. It is important to regularly monitor the flock for signs of abnormality including nervousness, excessive apathy, and sick individuals. There are a host of conditions or diseases that affect poultry. In fact, many symptoms will be indicative of many possible causes. A differential diagnosis of possible agents may involve additional testing by a laboratory or veterinarian to confirm the diagnosis. However, one of the most important recommendations that can be made is to identify any abnormalities as early as possible and respond in a timely manner. Table 1 provides some common symptoms and possible causes. A more extensive list of symptoms of common diseases and management problems can be found at the website of the [Mississippi State University Cooperative Extension Service](#).

## **Sources of Disease**

In order to properly prevent the outbreak and the spread of disease in a flock, an aviculturist should have an understanding of the sources of disease. If the sources of disease are identified and managed properly, the number of outbreaks should be greatly reduced. Additionally, the following sources of diseases should be investigated when an outbreak occurs. The main sources of disease are humans, contaminated equipment, newly introduced birds, pests, stress, and air.

**Humans** are a major source of disease transmission. They can be infected indirectly by carrying the disease on clothing or shoes (mechanical transmission) or directly infected by diseases that can also infect the birds.

**Contaminated equipment** can serve as carriers if not properly sanitized. This is why it is important to not share equipment between multiple operations. If it is necessary to share equipment, it should be thoroughly cleaned and sanitized.

**Newly introduced birds** can carry infectious diseases. It is important to remember that infected birds may appear healthy and still shed diseased organisms. It is also important to be cautious with birds that are taking to shows or other events where they come into contact with birds from other operations because they become potential carriers of disease.

**Pests** such as rodents, insects and wild birds can also bring disease to the flock. They like humans can either be mechanical carriers or be directly infected with the infectious organism. It is important to be sure that the wild birds and rodents can not enter the housing facilities in addition to following other pest control measures.

**Stress** may not be thought of as a source of disease at first glance. However, many consider stress to be the most important source of disease. Birds that are under excessive stress or in stressful environments have a depressed immune system. Flocks that are in stressful environments typically have chronic problems with disease and experience greater losses when presented with a disease outbreak. These birds are also more likely to have problems with opportunistic organisms, which are organisms that are normally present but do not cause problems until the bird's immune system is compromised. Sources of stress for a flock should be identified and removed.

**Air** can also be a source of disease transmission. However, it is normally not a significant source of disease transmission. Infectious organisms that can be carried by dust or water droplets usually are only transmitted between birds in close contact.

## **Disease Prevention**

The most effective disease prevention programs use a good biosecurity strategy. Biosecurity is basically a set of practices used to guard a producer's flock against biological pathogens based on the understanding of how disease is spread and transmitted. It is important to understand the sources of diseases discussed above in order to set up safe guards to protect the flock from the outbreak of disease. The goal of a disease prevention program should be to keep disease off of the farm and to eliminate the risk of sickness from disease that may already be on the farm. The implementation of a biosecurity-based disease prevention program may not completely prohibit the outbreak of disease on a farm, but it will certainly decrease the possibility of a disease outbreak.

Some other aspects of disease that should be considered in order to develop a proper disease prevention program are the lifespan of disease-causing organisms and the

immune system of the poultry. These aspects are also important because they should be considered when deciding on the proper times to sanitize the housing areas and the proper times to administer antibiotics. They will also help a producer respond appropriately when an outbreak occurs.

The following are recommended guidelines to include in a disease prevention program for a poultry farm:

- Keep visitors to a minimum level. Farm-workers or personnel that travel to more than one farm should shower and change cloths before entering the houses. Also, be sure every visitor's footwear is properly sanitized, which can be done by soaking them in a chlorine water solution for about five minutes.
- Be sure that equipment is properly sanitized. This includes equipment that is shared between farms and equipment that is used on or near a flock that was possibly diseased.
- Practice "all in, all out" introduction and removal with flocks when possible. Clean and sanitize areas thoroughly between flocks, which will decrease the occurrence of chronic or reoccurring disease outbreaks. There should be a down time of a minimum of two weeks when rotating flocks.
- As insects and rodents can spread disease, there should be measures in place to control them. Make sure rodents and wild birds can not enter the buildings. Keep the buildings clean and remove dead birds. When cleaning the houses and replacing the litter, an insecticide that is approved for poultry use may be applied.
- Stress can only be reduced through good management practices. These practices include providing adequate water, food, vitamins, ventilation, and dry litter, monitoring the temperature of the houses, protecting the animals from adverse weather conditions and predators, and insuring proper stocking rates.

The development of an infectious disease depends on three variables, which are resistance capabilities of the poultry, virulence of the disease-causing organism, and the dosage of the organism to which the birds are exposed. A good biosecurity program that includes the recommendations and tips found in this article will help to suppress the development of an infectious disease by addressing two of these variables (the ability of the poultry to resist the disease and the dosage of the organism to which the birds are exposed.) An effective disease prevention program would be extremely beneficial to any poultry production system.

For more information, please contact the University extension veterinarian by phone at (850) 599-3546, by email at [ray.mobley@famuedu.edu](mailto:ray.mobley@famuedu.edu) or visit the Herd Health Program website at <http://www.famuedu.edu/herds>.

**Table 1. Symptoms and possible causes of disease and conditions in poultry<sup>a</sup>**

<b>Region of Body</b>	<b>Symptom Observed</b>	<b>Possible Cause</b>
<b>General Body Conditions</b>	Emaciated	<i>Nutritional deficiency, Enteritis, Tuberculosis and others</i>
	Twitching	<i>Botulism, Infectious bursal disease</i>
	Paralysis	<i>Botulism, Marek's diseases, Aflatoxin poisoning</i>
	Dehydration	<i>Lack of water, Coccidiosis</i>
<b>Feathers</b>	Feather eating	<i>Methionine deficiency</i>
<b>Skin</b>	Nodules (legs)	<i>Marek's Disease</i>
	Crusted Ares	<i>Erysiphe</i>
<b>Comb</b>	Eruptions	<i>Marek's Disease</i>
	White and scaly	<i>Faucis</i>
<b>Eyes</b>	Watery	<i>Infectious coryza</i>
	Large and swollen	<i>Mycoplasma</i>
<b>Face</b>	Swollen	<i>New Castle, Infectious coryza</i>
	Nodules	<i>Fowl pox</i>
<b>Nostrils</b>	Discharge	<i>Infectious coryza, Chronic respiratory disease, Infectious bronchitis, Influenza</i>
<b>Mouth</b>	Pustules	<i>Vitamin A deficiency,</i>
	Ulcers	<i>Mycotoxins</i>
<b>Wattles</b>	Swollen	<i>Infectious coryza</i>

<sup>a</sup>This list is not inclusive and only represents a sampling of common disease symptoms and causes. A more extensive list can be found on the Mississippi State University Cooperative Extension Service website (<http://www.msstate.edu/dept/poultry/diagext.htm>). A veterinarian could also be consulted.

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## Footnotes

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Printed 4/07