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## Poultry Diseases & Management in Rainy Season

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In tropical monsoon environments like India, seasonal variation is one of the major non-genetic factors that affect poultry production. For instance, the cold rainy season affects both poultry production and the general well-being of poultry. The rainy season is usually synonymous with an increase in relative humidity and a reduction in temperature; rainfall affects both the quality and quantity of feeding, while wind speed has an impact on the outbreak of diseases.

Poultry birds and poultry production are generally affected by seasonal climatic or weather changes. For instance, in the wet or cold season, chickens eat more feed, drink less water and huddle together to generate heat and keep themselves warm. On the other hand, chickens and other livestock birds consume less feed and drink more water in the hot season or weather in order to cool their body. These changes affect the production of birds, most especially laying birds, as the egg production is reduced in extremely cold or hot weather. This reduction in egg production occurs because when there are extreme cold or hot conditions, these birds are stressed, and their ability to withstand diseases or immune system is seriously affected.

Some certain poultry diseases are rampant in the wet, rainy or cold seasons i.e., the onset of rain favors the propagation and spread of the causative organisms of these diseases and parasites. Hence, most poultry farmers experience high morbidity and mortality rate during this period.

Some of the diseases common during the rainy season will be discussed below.

### 1. Fowl Pox

Fowl pox is a highly contagious disease that affects poultry birds at any age. It is caused by poxvirus transmitted by mostly mosquitoes and other blood-sucking insects. The reason why fowl pox is prevalent during the wet season is that mosquitoes, being the vector, breed well in this season due to the abundance of stagnant water. Also, the incidence of wet litter becomes apparent when poultry houses are not adequately shielded from rain. This leads to the development of wet litter which then predisposes to fly problems in the pen.

#### How to Recognize Fowl Pox in Chickens

There are some visible things you will notice, which are proofs that your chickens or turkeys have come down with fowl pox disease. Fowl pox leads to the development of round lesions with scabby centres on the skin of the birds. The majority of the skin lesions are located on the wattle, face, comb, and some are occasionally located on the legs. This disease also affects the mouth and windpipe linings. The lesions that are formed in the throat can develop to the extent of blocking the throat and it could eventually lead to death as a result of suffocation. Lesions on the face can extend to the eyes, causing temporary or permanent blindness of the affected bird.

#### How to Prevent Fowl pox in Chickens

The mechanical carriers of fowl pox are mosquitoes. So it is advisable to reduce the mosquitoes around your farm or environment. Ordinary sanitation and management practices will not avert this disease, so vaccination is often the solution. It is recommended to [vaccinate chickens and turkeys](#) such as breeders, egg layers, and those that are



highly susceptible to fowl pox. Live fowl pox vaccine is administered in the wing web of birds within age 6 and 10 weeks. If aggressive pecking is controlled among birds, skin damage which fowl pox causes is reduced.

#### How to Treat Fowlpox in Chickens

Unfortunately, fowlpox has no treatment once the fowlpox virus has affected a bird. But as long as a diseased bird is eating and drinking, it will recover from the disease in about

two weeks or more with low mortality rate. When a bird recovers successfully from fowlpox, it is immune to the disease permanently.

## 2. Fowl Cholera

Fowl Cholera is a bacterial disease that affects birds of age 6 weeks old and above. The bacterium responsible for this is *Pasteurella multocida* a gram-negative, non-spore-forming, rod shaped bacteria. It is highly contagious and mortality in acute cases is high. The causative organism is spread readily during the rainy season because wet litter serves as an abode of numerous microorganisms.

### How to Recognize Fowl Cholera in Chickens

In acute cases develop fever, ruffled feathers, lethargy, anorexia, mucoid discharge from the mouth, increased respiratory rate, and cyanosis.

In chronic cases following sign are developed:

- Loss of appetite
- Presents as a localized infection (swelling, inflammation, and abscess) of the wattles, sinuses, foot pad, sternal bursa, joints (leg or wing), or ears.
- Sometimes tracheal rales and dyspnea may occur secondary to respiratory tract infections.
- Drooped wings and tail feathers
- Ruffled feathers
- Twisting of the neck (torticollis)
- Discharge from the nostril or beak

Note: The above signs are also similar to those of fowl typhoid.

### Transmission

Direct contact with infected birds

Ingestion

Predator attacks

Fomites



### How to Treat, Prevent, and Control Fowl Cholera in Chickens

Fowl cholera can be treated using sulfa drugs, tetracycline, and erythromycin. Poultry birds can be vaccinated against fowl cholera by administering a fowl cholera vaccine. Maintain proper



hygiene and sanitation. Practice a high level of biosecurity and prevent rodents, wild birds, and other animals.

### 3. Salmonellosis, Escherichia coli, Pullorum Disease (Bacillary White Diarrhoea)

These bacterial diseases affect birds of all ages. They are endemic in farms or pens with poor sanitation, such as is seen when wet litter is allowed to stay for a long time.

They affect the digestive system of the infected birds.

#### How to Recognize Salmonellosis, Escherichia coli, Pullorum in Chickens

- Severe diarrhoea
- Loss of appetite
- Depression and emaciation
- Chicks suffer omphalitis
- huddle near a heat source are anorectic
- appear weak
- have whitish fecal pasting around the vent (diarrhea)

#### How to Treat, Prevent, and Control Salmonellosis, Escherichia coli, Pullorum

The disease may be seen in all age groups, but birds <4 weeks old are most commonly affected. Birds may die in the hatchery shortly after hatching. Salmonellosis, E. coli and Pullorum diseases can be treated by control is based on routine serologic testing of breeding stock to assure freedom from infection. In addition, management and biosecurity measures should be taken to reduce the introduction of *S enterica* Pullorum from feed, water, wild birds, rodents, insects, or people. administering a [broad-spectrum antibiotic](#) to the flock. High-level farm/pen hygiene and sanitation must be maintained. Biosecurity measures should be in place. Avoid feeding birds with contaminated feeds.

#### 4. Aspergillosis

Aspergillosis is the disease caused by *Aspergillus fumigatus* in poultry. Aspergillosis is a disease, usually of the respiratory system, Due to the high humidity during the cold season, feeds or litter dampens, thus creating a favourable environment for fungus to grow and thrive. The birds also inhale *Aspergillus* spores and these spores develop into lesions filling the lungs causing respiratory problems or discomforts. Birds under intensive management systems would experience high disease spread if the stocking density is high and ventilation is inadequate or poor. Severe outbreaks usually occur in birds 7–40 days old.

#### How to Recognize Aspergillosis in Chickens

There are a wide range of clinical signs presented in birds with aspergillosis. This is because they vary depending on how the chicken became infected, where lesions develop in their body, organ(s) involved, and their overall health status (immune system). The most common clinical signs of aspergillosis include:

- dyspnea
- labored breathing
- fever
- inappetence
- emaciation

Less frequently, a neurologic form might present, with clinical signs that include torticollis and tremors. In chickens and turkeys, the lungs and airsacs are most frequently involved. Pulmonary lesions are commonly characterized by white to yellow plaques and nodules a few millimeters to

centimeters in diameter. In rare cases, birds may present with diffuse pulmonary congestion only. A presumptive diagnosis of

aspergillosis can usually be made based on the history of the flock, clinical signs, and physical examination. In order for your veterinarian to obtain a definite diagnosis of aspergillosis, they will need to collect some samples and send to a diagnostic laboratory, to confirm the presence of *Aspergillus* in the bird.



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## How to Prevent Aspergillosis in Chickens

Dry, good quality litter and [feed](#) and hygiene will help in the prevention of aspergillosis. Antifungal drugs such as Thiabendazole or Nystatin can be used in feed. Mitigation strategies can include: 1) removing the birds from the contaminated environment; 2) removal of contaminated material(s) to limit further exposure; 3) trying not to disturb the contaminated material(s) in order to limit further aerosolization of spores; and 4) increased ventilation or air exchange rates to possibly minimize the severity of the outbreak.

## 5. Coccidiosis

Coccidiosis is caused by protozoa of the phylum Apicomplexa, family Eimeriidae. Coccidiosis is caused by protozoan *Eimeria sp* in poultry, most species infect various sites in the intestine. Both clinically infected and recovered birds shed oocysts in feces, which contaminate feed, dust, water, litter, and soil. Oocysts may be transmitted via equipment and personnel (eg, shoes) as well as the presence of insects (eg, flies) and rodents. The infectious process is rapid (4–7 days) and is characterized by parasite replication in host cells with extensive damage to the intestinal mucosa. Poultry coccidia are generally host-specific, and the different species parasitize specific parts of the intestine. However, in game birds, including quail, the coccidia may parasitize the entire intestinal tract. Coccidia are distributed worldwide in poultry, game birds reared in captivity, and wild birds. The wet litter and the hot pen temperature commonly observed in the rainy season favours the sporulation of the coccidian oocyst and therefore, the outbreak of coccidiosis.



## How to Identify Coccidiosis in Chickens ?

Prior to the advent of molecular methods, traditional methods such as cross-immunity, characteristics lesions, site of development and pathogenicity were used in the identification of *Eimeria* species. Alternative method to the traditional method is the introduction of computational method called COCCIMORPH which uses oocyst morphology in the identification of *Eimeria* species. Molecular method uses PCR assay by amplification of specific gene in the DNA sequences of *Eimeria* parasite. Coccidiosis disease is promoted by

poor housing and management system of poultry. Clinically, bloody faeces, ruffled feathers, anaemia, and somnolence are observed. Other signs of coccidiosis range from decreased growth rate to a high percentage of visibly sick birds, severe diarrhea, and high mortality. Feed and water consumption are depressed. Weight loss, development of culls, decreased egg production, and increased mortality may accompany outbreaks. Mild infections of intestinal species, which would otherwise be classed as subclinical, may cause depigmentation and potentially lead to secondary infection, particularly *Clostridium spp* infection. Survivors of severe infections recover in 10–14 days but may never recover lost performance. The lesions are almost entirely in the intestinal tract and often have a distinctive location and appearance that is useful in diagnosis.

### **How to Prevent Coccidiosis in Chickens**

**Basic hygiene is your first step for prevention.** It is good to ensure that the poultry house is generally clean and dry.

- Ensure water is clean and fresh. Keep feeding areas clean and dry.
- Ensure the birds have enough space i.e. overcrowding should be prevented as it is a predisposing factor for coccidiosis. Chickens need an average of a square meter for 3-5 birds.
- If your chicks have not been vaccinated against coccidiosis, provide medicated starter feed for them. Anticoccidial medication should be given to the chicks at around 12 days of age (this might vary depending on the vaccination schedule being followed).
- An all-in all-out method should be employed on the farm in order to prevent a horizontal transfer of infection. If this method is not feasible, keep the new batch quarantined for a minimum of two weeks, for the protection of the current stock.

### **How to Treat Coccidiosis in Chickens**

Once coccidiosis is diagnosed in a flock, all the birds need to be treated. Also, the litter needs to be changed so that birds do not pick up the sporulated oocyst from the droppings of affected birds. [Common anticoccidial drugs](#) include; Amprolium, toltrazuril, sulfaquinoxaline etc.

To manage poultry such as chickens, turkeys, quails, duck, and pheasants during cold or rainy periods, poultry farmers have to do the following:

- Add oil or fat to the diet of the birds or reduce the level of nutrients that are not required by the birds to generate heat. This is necessary to avoid wastage and reduce feed production costs, since birds consume more feed to generate heat.
- Install electric bulbs or heater in the pen to serve as a secondary source of heat for the birds. This would help the birds drink enough water and stay warm without getting the reserved energy used up in the process.
- Though very rare in an intensive system but rampant in a free-range system, birds drink from the stagnant water around, thus pick up eggs of parasitic organisms such as intestinal worms. That is why it is important to deworm poultry birds bi-monthly with effective dewormers such as piperazine. A broad-spectrum antibiotic like oxytetracycline should be administered to the birds every month.
- Construct a generous roof overhang over the entrance and sides of pens to prevent rainwater from getting into the pen whenever it rains. Construct a foot dip at the entrances of the pens and a strong disinfectant solution should be in the foot dip always.
- Vaccinate birds at the right time.