

Diseases of the Respiratory System of Chickens

By

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There is a group of disease complexes which have in general been classified as respiratory diseases. The similarity of the symptoms and lesions of these diseases often causes considerable difficulty in diagnosis and treatment. In order to successfully combat any disease a correct diagnosis is the first step.

The "colds" of poultry is usually a mild type of coryza which may be aggravated by sudden changes in temperature and humidity. The disease "**coryza**" is caused by a specific microorganism which may infect the birds alone or in company with other organisms. The symptoms are sneezing, watery eyes, and nasal discharge. If no complicating factors develop this disease responds to good nursing, correcting the ventilation and increasing the amount of Vitamin A in the ration. If complicating factors are present good results have followed in the use of certain of the sulfa drugs. It is not recommended that sulfa drugs be given unless specifically indicated because they may actually increase losses in some other types of respiratory diseases. Improperly handled coryza outbreaks result in low egg production for long periods of time, rousy eyes, and gradual loss of flesh. Coryza is very common in North Dakota flocks.

Vitamin A deficiency is frequently associated with coryza. The only specific lesion is the presence of white nodules in mouth and gullet of the chicken. In cases of vitamin A deficiency the sneezing and watery eyes are usually present, in advanced cases the eyes may be swollen shut and full of hardened pus. Where true coryza and vitamin A deficiency are present the birds look very depressed, egg production may cease and the birds have the foul odor associated with roup. At this time it may be easy to confuse the true disease complex with the diptheritic form of fowl pox.

The treatment for vitamin A deficiency is to increase the carotene and vitamin A content of the ration. Use a high vitamin A fish liver oil and feed plenty of fresh green feed or alfalfa hay leaves.

Infectious bronchitis is common in North Dakota. This is a specific virus disease and is characterized by gasping and by lesions confined to the bronchial portion of the lungs. There is a mild pneumonia. Infectious bronchitis in baby chicks is rapidly spread through the brooder and nearly all infected chicks die. Mild inhalants may do some good but in general the

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losses are heavy. In older birds the symptoms consist of gasping, as a rule the nostrils do not discharge as much fluid as they do with coryza and if the birds are not in production the losses may be insignificant. In laying hens an outbreak of infectious bronchitis may first be known by a marked drop in egg production. There may be only a few showing the gasping symptoms at a time. This rapid drop in egg production also occurs in other diseases and is not at all valuable in making a diagnosis. In Newcastle disease the hens do not return to egg production for a much longer time than in the case of infectious bronchitis. Most pullets and hens recover from bronchitis. There is no vaccine for this disease and medicinal treatment does not seem to alter the course. Recovered birds may be carriers so that chicks brought onto a farm where there has been an outbreak of bronchitis may all die from the disease. If infectious bronchitis has been known to exist on a farm all mature birds should be removed or isolated until any new chicks are at least three months old.

Laryngotracheitis is not as common in North Dakota as has been assumed. This is another virus disease in which the upper part of the wind pipe becomes badly inflamed and may actually contain blood. The chickens gasp in a manner similar to those with infectious bronchitis, but as they struggle to breathe they throw their heads and actually throw blood out of their mouths. Unlike infectious bronchitis this disease rarely infects baby chicks and in older birds it causes a heavy death loss. Medicinal treatment is of no

value. There is an effective vaccine for the protection of chicken against laryngotracheitis. However, vaccinated birds may spread the disease although they are not showing any symptoms of disease.

Whenever a poultryman purchases replacement birds he should inquire as to whether the birds have been vaccinated for laryngotracheitis or not. If they have he is advised to vaccinate his flock at least a week before introducing vaccinated birds. Once the vaccine has been used on a farm it is almost necessary to use it each succeeding year. The use of laryngotracheitis vaccine actually perpetuates this disease.

Newcastle disease has recently made its appearance in the United States. This is a virus disease which first causes the birds to show symptoms of a mild cold, egg production drops to a negligible number and later the birds show symptoms of paralysis or incoordination in which abnormal movements of the head are very common. It is not known for sure whether this disease is present in North Dakota or not. If it is every precaution should be made to eliminate it. In this disease losses continue by death and a prolonged period of low egg production. If a poultryman suspects the presence of this disease in his flock he should at once contact the state Livestock Sanitary Board officials.

Other Causes of Gasping, and Difficult Breathing

There are numerous other poultry diseases in which symptoms of respiratory difficulties are observed. **Brooder pneu-**

monia of chicks is caused by a mold growing in the lungs. This disease is caused by the inhalation of mold spores from the feed, the litter or the air in the brooder house. Medicinal treatment is of little use. It is necessary to find the source of the mold and remove it in order to control the disease.

Chicks suffering from pullorum disease and paratyphoid frequently show gasping symptoms. In these cases it is a generalized disease and the gasping symptoms are only one manifestation of the disease.

Chicks that are maintained at too high a brooder temperature frequently show symptoms suggestive of gasping but which are really manifestations of panting. These chicks are attempting to cool themselves by breathing at a more rapid rate. Any brooder should be so arranged that the chicks can get at least 20° cooler than the brooder hover temperature. Also insure adequate amounts of water continuously.

Older chickens sometimes show symptoms of respiratory distress due to tumors of the lungs. In some outbreaks of fowl leucosis lung tumors are not uncommon. These birds should be removed from the flock and destroyed.

There is a worm that invades the windpipe of chickens and causes severe "gasping". This worm does not appear to be present in North Dakota.

In fowl pox there may be lesions in the mouth and windpipe. At times these become so severe as to interfere with breathing. Control measures must be directed at the main disease which may be either vaccination or removal of birds showing symptoms. In general

under North Dakota conditions the vaccination against fowl pox is not recommended. The disease if allowed to spread will go through the flock, there will be a drop in production, but the birds rapidly return to production. In most cases the disease does not reappear on the same farms the next year.

Principles of Control of Respiratory Diseases

There are certain general principles in all disease control programs and some which are particularly pertinent as to the diseases of the respiratory apparatus of poultry.

(1) In the first place have a clean well disinfected brooder house and maintain the brooder at the proper temperature. The attendant of the young chicks should not contact mature fowls at all. If the same attendant cares for both chicks and hens the hands and shoes should be disinfected before entering the brooding house.

(2) Obtain chicks from the local hatchery. Chicks shipped long distances have more opportunity to become infected with any one of the chick diseases, and their resistance is lowered by lack of water and feed.

(3) Feed a balanced ration and keep the chicken houses and brooders clean. Let sanitation take the place of medicine in the drinking water.

(4) Control the humidity in brooder and laying houses. Do not let the litter get damp.

(5) Keep visitors out of the chicken houses.

(6) Do not add chickens to your flock without a history of their vaccinations and not until

you have kept them in isolation for at least two weeks.

(7) In the event of a disease outbreak have the trouble diagnosed by a trained animal pathologist.

(8) Do not vaccinate unless you are reasonably sure that

your flock will be exposed to the disease you are vaccinating against.

(9) In any outbreak of disease in which the birds show symptoms of difficulty in breathing use only a mild inhalant. Strong inhalants do more harm than good.

FEEDING PREGNANT AND LACTATING EWES RATIONS WITH DIFFERENT PERCENTAGES OF PHOSPHORUS

A Review

Results from feeding pregnant and lactating ewes rations containing different levels of phosphorus were published in December 1945 in Idaho Agricultural Experiment Station Bulletin 266, "The Phosphorus Requirement of Ewes for Pregnancy and Lactation" by W. M. Beeson, R. F. Johnson, D. W. Bolin, and C. W. Hickman.

Rations containing 0.14, 0.16, 0.19 and 0.23 per cent phosphorus were fed to ewes during their gestation and lactation period. Blood samples were drawn periodically from these ewes and analyzed for inorganic phosphorus. These blood phosphorus values were used as an index to determine whether ewes were receiving sufficient phosphorus in their ration.

Ewes fed the 0.14 per cent phosphorus ration did not receive sufficient phosphorus. However, ewes fed the 0.16 and the 0.19 per cent phosphorus ration received sufficient phosphorus during the gestation period, but these two rations failed to supply enough phosphorus when the ewe was suckling a lamb. The 0.23 per cent phosphorus ration supplied enough phosphorus to meet the normal phosphorus requirements of lactation. The ewe, when suckling a lamb, requires a larger amount of phosphorus than at any other period of reproduction.

The authors of this bulletin point out from previous investigations, that ewes on ranges have access to forage, which is rich in phosphorus and protein during the spring and early summer months but when the range becomes dry and the forage matures, there is a rapid loss of phosphorus and protein. The critical period in the phosphorus nutrition of the sheep is during the fall and winter seasons. During this critical period, the rations should be supplemented with phosphorus by giving ewes free access to equal parts of bone meal and salt. In case the ration is also low in protein, a protein-phosphorus rich concentrate such as cottonseed, soybean and linseed meals should be added to the ration.

These investigations would indicate that many rations fed to sheep in North Dakota may be deficient in phosphorus and possibly protein, and that these rations should be supplemented with steam bone meal or a protein-phosphorus rich concentrate if the rations are low in both protein and phosphorus. (Reviewed by Donald W. Bolin, Associate Nutritionist)