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NEWCASTLE DISEASE

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NEWCASTLE DISEASE

(Pneumoencephalitis)

By

By E. M. Dickinson, Veterinarian

Newcastle Disease, as it was first described in England and other foreign countries, is a highly fatal, contagious, infectious disease of poultry that is caused by a virus. In the United States a disease of chickens first described as a contagious, infectious, respiratory-nervous disease that is caused by a virus was given the name of pneumoencephalitis by Dr. J. R. Beach, veterinarian at the University of California. Later it was shown that viruses isolated from the disease in England and from the pneumoencephalitis disease in the United States produced antibodies that could neutralize each other. Because of this, the viruses are considered to be the same and the disease that is called pneumoencephalitis in the United States is considered to be Newcastle Disease. Therefore, the terms Newcastle Disease and Pneumoencephalitis are synonymous terms for a contagious, infectious, respiratory-nervous disorder of poultry.

Nature of the Disease

Mortality from Newcastle Disease in this country varies from none to more than 50 per cent. In young brooder chicks, the mortality averages about 20 per cent. Mature birds and young growing stock on range do not suffer much mortality. Often there is no mortality during an outbreak among older birds. Birds that are in lay usually show a sudden severe drop in egg production. Eggs that are laid during an outbreak may have a higher percentage of soft or deformed shells than usual. Although the respiratory symptoms are the most often noticed, they usually clear up in 10 to 14 days. Following the respiratory symptoms, some of the birds may develop nervous symptoms of paralysis, incoordination, and tremors.

The respiratory symptoms as well as the nervous symptoms may readily be confused with other diseases that cause birds to manifest such symptoms. However, an acute contagious respiratory disease of young chickens followed in a few days by symptoms of incoordination, paralysis, or tremor in several of the birds should cause one to suspect the presence of Newcastle Disease. An acute, contagious respiratory disease in laying birds that results in a very sharp drop in egg production should also cause one to suspect Newcastle Disease in older birds.

Spread of the Disease

The most dangerous period for the spread of the disease is during the time when the birds are showing the acute symptoms of the disease. During the acute symptoms of wheezing, coughing, and sneezing, small particles carrying virus in the air may be the most potent means of spread within a pen or house. These particles with virus may settle on the clothing, footwear or other exposed surfaces of a person going into these pens and thus be carried into other susceptible pens or onto other poultry farms. In general, this most dangerous period is during the first and second week of acute symptoms. The danger of spread diminishes rapidly after the third week following the outbreak of disease. This should not be construed to mean that there is no danger after this period.

Since virus on small particles carried in the air seems to die out quickly, factors that may carry such virus particles quickly from an infected flock to susceptible flocks are the greatest hazards. Human beings stand high on this list of factors. Sparrows or other free-flying birds may be mechanical carriers when the neighborhood is concentrated and poultry farms are only a few hundred feet apart. Buying started chicks or other birds that have just recovered from acute symptoms may introduce the disease into new localities. Processors' equipment, such as crates or trucks, may also be important in this carrier category. Although feed sacks and egg cases may be factors in the spread, they are more theoretical possibilities than actual carriers.

Control

There are many localities in Oregon where Newcastle Disease has not yet been found. The control in this state depends somewhat on whether you are in a locality where the disease is present. Some points of control to consider when the disease strikes are:

1. If symptoms and history suggest Newcastle Disease have a laboratory test made on some of the affected birds.
2. Stay away from other poultry farms.
3. Keep other people away from your flock.
4. Use wire screens that will keep sparrows or other free-flying birds away from the flock.
5. Do not slaughter any birds while the flock is showing acute symptoms of the disease.
6. Eggs should not be used for hatching during the acute stage of the disease. Wait until normal lay is resumed before saving eggs.
7. Give supplemental feeds and any special care that will help maintain appetite and body weight.

8. Keep the flock under isolation for at least 30 days after all symptoms or evidence of the disease has subsided.
9. Maintain reasonable sanitary precautions at all times.
10. Susceptible baby chicks 3 to 6 weeks of age may be vaccinated with live-virus vaccine to immunize them against the disease. This may be a desirable procedure on some poultry farms where the disease has occurred.
11. Maintain segregation of vaccinated birds for at least 3 to 4 weeks after vaccination, since such vaccinated birds are a menace to other susceptible birds.
12. It is illegal to use live-virus Newcastle vaccine in Oregon, at present, without gaining permission from the State Department of Agriculture, Division of Animal Industry, Salem, Oregon.

For the control and prevention of Newcastle Disease some points to consider in flocks of susceptible birds are:

1. If crates are borrowed for culling or handling birds, make certain they have been cleaned and disinfected.
2. Do not allow crates from hucksters or processors to be taken into the poultry house.
3. Do not take feed sacks or egg cases into the pens.
4. Use fine mesh wire on poultry houses to keep out sparrows and other free-flying birds.
5. Wage a constant war to eliminate rats and mice.
6. Stay away from other flocks of birds. Keep other people away from your flock.
7. When business requires you to be in contact with poultry or establishments other than your own, take reasonable precautions of changing clothes and washing hands before working again with your own birds.

Diagnosis

When cases of Newcastle Disease are suspected, a positive diagnosis is possible only by laboratory tests. Three or four birds with typical symptoms may be brought (do not ship) to the Poultry Disease Laboratory, Oregon State College, Corvallis, Oregon. When birds cannot be brought, an alternative is to send blood samples from three to five birds out of each pen that is infected. Tubes for taking blood samples may be the same as those for drawing pullorum blood samples.

However, the tube should be filled at least one-third full of blood and then laid horizontal until the blood clots. The blood should be drawn and shipped during the first part of the week so that samples will arrive before Saturday. Shipment of blood samples by prepaid express has given the most satisfactory service.