

NEWCASTLE DISEASE OF POULTRY

by

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Newcastle disease was apparently introduced into California prior to 1940 where it has been known as *Avian Pneumoencephalitis*. In 1945 a similar disease was discovered in New Jersey and this disease now appears to be prevalent in all parts of the United States. The name, Newcastle Disease, has been adopted for both the disease of the west and east coasts.

Some countries have apparently eradicated this disease by a slaughter-quarantine program. In the United States attempts at slaughter and quarantine were rather unsuccessful. The system of purchasing chicks from commercial hatcheries, the selling of market birds to dealers that go from farm to farm and the exchange of egg crates all tended to work against the poultryman trying to operate under a quarantine system.

That the disease is widespread may be easily seen by noting the locations of Newcastle disease outbreaks diagnosed in North Dakota from July 1, 1947, to June 30, 1948.

The actual diagnosis of Newcastle disease is a laboratory procedure. A presumptive diagnosis is frequently made by a careful evaluation of the symptoms, the history and the death losses. The symptoms in different outbreaks of Newcastle disease vary greatly. In some cases the respiratory phase is so mild that the owner never observes it. The death losses may vary widely particularly in older birds. Nervous symptoms such as paralysis and holding of the head in abnormal positions have been stressed as common symptoms of Newcastle disease. In some outbreaks there are very few cases in which the birds show nervous symptoms. As a rule the nervous symptoms do not develop until about ten days after the respiratory symptoms. Some producers report losses in excess of 50% of the flock in baby chicks while in older birds the losses are frequently as low as 5%.

In a laying flock the egg production frequently falls to zero. The return to production may be quite rapid or extremely slow. The economic loss due to low egg production may be extremely high.

The information collected over the last few years has made it possible to formulate certain plans that appear to offer a working program for the gradual elimination of this disease.

There are many ways in which Newcastle disease is spread; it may be introduced onto a farm on contaminated chicken or egg crates. Baby chicks can become infected in transit. Pullorum testers, produce buyers and remedy salesmen can carry infection from farm to farm.

The following program is outlined as a means of eventually eradicating Newcastle disease.

1. Purchase chicks from a local hatchery. Get them as they are taken from the incubator and transport them in your own car or truck.

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2. Raise your chicks in a clean and disinfected brooder. Feed only mash that has been sacked in new or sterilized bags.
3. Do not allow anyone besides the regular attendant in the brooder house. The attendant should not visit other poultry flocks.
4. When chicks go on range it may be wise to vaccinate them if:
 - a. There has been Newcastle disease in the neighborhood.
 - b. The chicks may contact birds from the adjoining farms.
 - c. If there are older birds on the premises and there is a constant exchange of egg crates.
 - d. If the older birds have at any time had Newcastle disease.

It has been found that cats can spread Newcastle disease in their feces. Probably any animal eating diseased birds could also spread the disease.

Lice can spread Newcastle disease from bird to bird.

At the present time it is recommended that a killed virus vaccine be used. It may be necessary eventually to use the attenuated live virus but at present the killed virus vaccine seems to protect the birds sufficiently to allow normal growth and egg production and to resist field infection.

In baby chicks under a month of age the use of vaccine has not been very effective. With older birds the results have been uniformly good.

In the case of an outbreak of Newcastle disease, if the diagnosis is made before half of the flock is infected, it is recommended that all birds be vaccinated at once.

If over half of the birds are or have been infected the value of vaccination is low. There will be some death losses and some nervous cases. The rest will recover and be permanently immune.

So far the death losses from Newcastle disease in the United States have not been nearly as severe as they have in some other countries. At the present time it would appear that Newcastle disease could be eradicated from the United States by a concentrated effort by all concerned in poultry health.

Any program of poultry health must start with the hatcheryman. It is estimated that over 95% of all chickens brooded in the United States originate in commercial hatcheries. If the hatcheryman will watch his supply flocks and sell only to a local market he can prevent most of the trouble due to losses from Newcastle disease.

Extra chicks hatched by the hatcheryman constitute a hazard. Hatchery brooders should be entirely separate from the hatchery and have different attendants. It is much easier to infect a small chick with Newcastle disease than it is to infect a chick inside an egg.

The hatcheryman must also watch his supply flocks. If there is a sudden drop in egg production the alert hatcheryman will discard all

eggs from the flock including those he may have in storage or in the incubators. Reports from California show that in the early stages of a Newcastle disease outbreak the virus may be present in the eggs before the hens stop laying.

The hatcheryman can also aid in disease control in attempting to get a laboratory diagnosis in all flocks showing evidence of colds. The mild type of respiratory trouble in older flocks is often the initial stage of Newcastle disease.

The purchaser of market poultry also has a definite responsibility in poultry disease control. The repeated use of trucks and poultry crates without adequate cleaning and disinfecting constitutes a most flagrant disregard of the elementary rules of disease control. A poultry crate should be completely disinfected after being used on each premise. Those poultrymen refusing to allow trucks, catching and crating equipment on their property are very wise. Once a bird is placed in a produce buyer's crate it should never be allowed to re-enter the home flock.

Feed and medicine salesmen may also carry disease from farm to farm. Most of these people act not only in the role of salesmen but as "trouble shooters", advisors, and diagnosticians. They go from farm to farm and enter the poultry yards, examining birds and advising the owners. Any wise poultryman never lets anyone except the regular attendant enter a brooding house, summer range or winter quarters for poultry. If it is desired that someone examine a sick bird, the regular attendant should take the bird out of the poultry lot and not allow strangers to enter. The bird examined should then be burned. All dead poultry should be burned rather than buried.

In the production of hatching eggs the owner must allow the testing (for pullorum disease) and selecting of his flock. It is the responsibility of the testing and selecting agents to use utmost care in preventing the spread of disease from one premise to another. Any disregard of proper procedure by testing and selecting agents should be reported to the State Livestock Sanitary Board.

The suggestions offered for the control of Newcastle disease if followed by poultrymen will not only decrease the incidence of Newcastle disease but will decrease all diseases of poultry.

GEOGRAPHICAL DISTRIBUTION OF NEWCASTLE DISEASE OUTBREAKS IN NORTH DAKOTA COUNTIES

July 1, 1947 to June 30, 1948

Adams.....	1	Mountrail.....	1
Barnes.....	1	Nelson.....	1
Benson.....	2	Oliver.....	1
Burleigh.....	1	Pierce.....	2
Cass.....	6	Ramsey.....	1
Cavalier.....	2	Ransom.....	3
Diekey.....	3	Richland.....	1
Eddy.....	1	Stark.....	1
Emmons.....	1	Steele.....	1
Grand Forks.....	5	Stutsman.....	1
Kidder.....	3	Towner.....	1
LaMoure.....	1	Walsh.....	1
McHenry.....	3	Ward.....	2
McLean.....	1	Williams.....	1
Morton.....	5		