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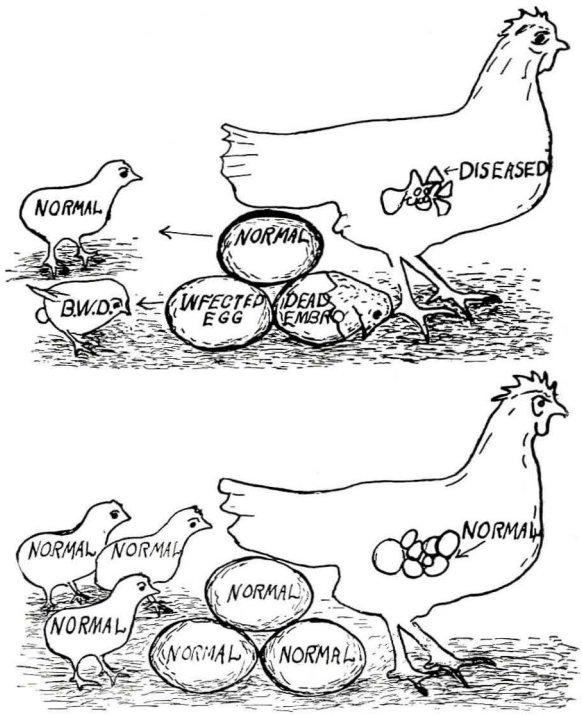
Extension Circular 1461 Revised, May, 1933

Questions and Answers Regarding Bacillary White Diarrhea



The University of Nebraska Agricultural College Extension Service
and United States Department of Agriculture Cooperating
W. H. Brokaw, Director, Lincoln

QUESTIONS AND ANSWERS REGARDING PULLORUM DISEASE (BACILLARY WHITE DIARRHEA)

By J. F. OLNEY

1. **What is pu'lorum disease or bacillary white diarrhea (B.W.D.)?**
   This is a germ disease of poultry causing heavy morality in chicks. It is also found in the adult fowl in which it tends to assume a chronic character with localization of the infection most often found in the ovary.

2. **How does the disease affect chicks?**
   Chicks may die from the disease without showing evidence of diarrhea. A diarrhea of any kind should be looked upon with suspicion. Loss of flesh, failing appetite, large abdomen, and pasting up about the vent are chief symptoms.

3. **How does the disease affect hens?**
   A large percent of the hens with this disease appear normal. The germ causes the ovary to become diseased. The diseased ovule often becomes the yolk of an infected egg. Occasionally the diseased ovules rupture producing a general infection of the body cavity, peritonitis and death. It may cause chronic diarrhea and finally death.

4. **When do the greatest death losses occur in chicks?**
   The greatest losses occur during the first three weeks of chick life.

5. **When a brood of chicks is once infected with the disease will the survivors be carriers of the infection?**
   Yes, a large number of chicks surviving an infection will be carriers of the disease and yet may appear to be perfectly normal.

6. **How is the disease transmitted from hen to chick?**
   The hen carries the local infection in the ovary. The eggs are infected when laid, and when hatched, produce diseased chicks. Feeding infected eggs to chicks will infect them.

7. **May chicks or adult birds contract the disease by eating fresh or infertile incubated eggs laid by infected hens?**
   Yes. It is known that chicks, poults, adult fowls and even rabbits may contract the disease from eating such eggs. The egg-eating habit appears at present to be one of the most important means of spreading infection among adult fowls.

8. **Can hatching eggs be disinfected to prevent transmission of infection?**
   No. The infection is within the egg substance.

9. **Can incubators be disinfected, fumigated, or sterilized in such a way as to prevent the spread during hatching?**
   No. The spread of infection cannot be entirely eliminated by such methods. However, a thoro cleaning and disinfecting of the incubator between hatches will help keep down the spread of the disease.

10. **Can any treatment be given eggs to prevent the spread of the disease in the incubator?**
    The following statement has been made by Payne of Kansas Agricultural College: "It has been found that a wet bulb reading 90° to 94° F. from the nineteenth to the twenty-first days of incubation, when the incubator temperature is 90° to 100° F. has a decided effect upon the circulation of chick down and germs which float through the air." Fumigation with formaldehyde gas has

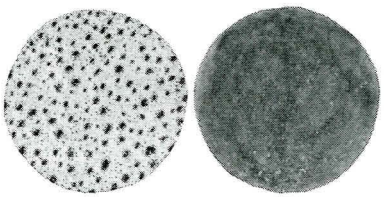
also been recommended by the Kansas Station. The investigators there state that the correct dose is 0.35 c.c. of formalin mixed with 0.175 gram of potassium permangenate per cubic foot of incubator capacity. Disinfection in this way, they also state, is most effective when the humidity of the incubator is high.

11. Has it been definitely proved that incubators are sources of transmitting the germs to uninfected chicks?

Yes. The transmission of infection in the incubator has been definitely proved.

12. Can a positive diagnosis of pullorum disease (B.W.D.), be made from the symptoms of chicks that are sick with the disease?

With the symptoms and the history of the flock, one familiar with the disease may diagnose with a fair degree of accuracy. A definite diagnosis, however, can only be made by laboratory experiment.



RAPID AGGLUTINATION TEST
Positive Negative

13. Is the rapid agglutination test or the tube agglutination test dependable in diagnosis of the disease in baby chicks?

No. As a rule, baby chicks with pullorum disease (B.W.D.) do not react to either test.

14. What tests are used to detect infected birds in the breeding flock?

The rapid agglutination, tube agglutination and the pullorum intradermal (wattle) tests are used.

15. Which methods are recommended by the University of Nebraska Department of Animal Pathology and Hygiene?

The rapid agglutination test and tube agglutination test are recommended by this Deparment.

16. Is the rapid agglutination as reliable as the tube agglutination test?

The rapid method is as reliable as the tube method if made by a person equally qualified.

17. What is the approximate cost of the agglutination test?

The rapid agglutination test costs about five cents per bird.
The tube agglutination test costs about ten cents per bird.

18. What are the advantages of the rapid agglutination test?

It is not necessary to band the birds. The results of the test are known within five minutes and the bird is disposed of accordingly.

19. What should be done with the reacting birds?

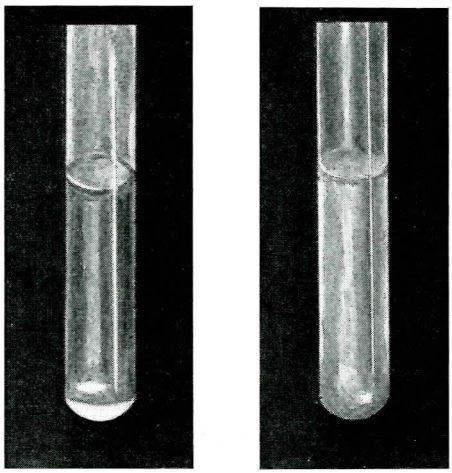
Reacting birds should be marketed at once.

20. What should be done with a breeding flock of which thirty percent or more are reactors?

Flocks showing a high percentage of reactors should be discarded for breeding purposes as the time and expense of cleaning up such a flock make such a procedure unprofitable.

21. How often should a breeding flock be tested?

Breeding birds should be tested at least once each month. Two or three tests taken at one month intervals before eggs are saved for hatching is the best procedure to follow until the flock is known to be free from disease.



TUBE AGGLUTINATION TEST

Positive Negative

22. What methods of control should be used besides the aggultination test?

Daily culling of chicks during the first three weeks is of utmost importance. Pick out, kill and burn every chick which is seen drooping around, pasting up about the vent, or falling behind the average weight. This will greatly aid in controlling the infection in a brood of chicks. General sanitation should never be neglected. Birds surviving a bad infection where severe loss has occurred should never be saved for breeding purposes, and seldom should be used for egg production.

23. What should be done with a brood of chicks that has survived a severe infection?

If the chicks surviving a bad outbreak are fairly vigorous they should be kept separate from any other group of chicks and sold as broilers after which the brooder should be thoroughly cleaned and disinfected.

24. Are male birds affected?

Yes. Male birds contract the disease.

25. Is the disease spread through breeding?

Conclusive information on this point is not available. The testicles have been found occasionally to be infected. The male might act as a mechanical carrier in transmitting the infecting organism from an infected female to a non-infected female.

For more detailed information consult Nebraska Agricultural Experiment Bulletin No. 195.

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