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Poultry Club Demonstration Problem XIV : Extension Circular 14-14-2

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Revised
1928

Nebraska
COOPERATIVE EXTENSION WORK
IN AGRICULTURE AND HOME ECONOMICS
U. of N. Agr. College & U. S. Dept. of Agr. Cooperating
W. H. Brokaw, Director, Lincoln

Extension
Circular
14-14-2

POULTRY CLUB DEMONSTRATION
Problem XIV
SANITATION FOR YOUNG STOCK OR DISEASE CONTROL

A health officer of a poultry flock must know how to prevent his flock from becoming infested with external or internal parasites. He must know the different ways by which infectious diseases are spread. Some diseases are caused by small parasitic animals called protozoa. The protozoa are the lowest forms of animal life. Other diseases are caused by low forms of plant life. These are known as bacterial or germ diseases. We will now explain how two very common diseases of young chicks are spread by these two different causes.

- I. Coc-cid-i-o-sis is an example of a disease caused by a microscopic parasite belonging to the protozoa.
 - A. Coccidia live in the small intestines but mainly in the ceca and are responsible for the spread of coccidiosis. (Chart C-1.)
 - B. The coccidia pass out of the fowls' body in the droppings. (Chart C-2,4,5,& 6). The coccidia develop or (sporulate) while outside their host, and develop to the infective stage (Chart C-3)
 - C. Coccidiosis causes the part of the intestine affected to become inflamed and thickened. The inner lining of intestine may be destroyed. The intestine especially the ceca are filled with a bloody mass or with cheesy material streaked with blood. (Chart C-7).
 - D. The effects of coccidiosis is shown by ruffled feathers, depression, weakness, dullness, disinclination to move, loss of appetite, diarrhea with bowel discharges streaked with blood. (Chart C-6).
 - E. To prevent the coccidia from infecting chicks we should:
 1. Keep young stock away from old stock.
 2. Scrub the brooder house in preparation for the baby chicks.
 3. Rotate the chick yards as suggested for prevention of round worm infection.
 4. Keep feed and water clean by using protected feeders and waterers.
 5. Feed buttermilk and sour milk because these feeds somewhat prevent the development of coccidia.
 - F. To treat an infected flock we should:
 1. Destroy and burn all infected and dead chicks.
 2. Clean the brooder house frequently.
 3. Move the healthy chicks to fresh range if possible.
 4. Avoid carrying mud from infected yards into the brooder house on shoes or otherwise.
 5. Feed 20 grains of crude catechu in each gallon of drinking water.
 - G. Blackhead is a very deadly disease of young poults and a less serious disease of chickens. Blackhead is another important disease spread by microscopic parasites belonging to the protozoa. (Histomonas meleagris).

II. Bacillary White Diarrhea is an example of a disease spread by germs. This germ or microbe is a low form of plant life. We also refer to these germs as bacteria.

- A. Bacterium pollorum is the name of the bacteria which causes the very deadly and infectious form of white diarrhea.
- B. These germs are primarily found in the intestine of infected chicks but later invade other organs thru the blood circulation. In mature birds the disease is generally located in the ovary. (Chart D-1)
- C. In the eggs laid by an infected hen some eggs will contain the germs of bacillary white diarrhea. (Chart D-2)
- D. Such infected eggs that hatch produce infected chicks that nearly always die, but before they die they spread many germs which starts an epidemic among the other chicks. (Chart D-3)
- E. When the disease spreads from the intestine by means of the blood circulation a poison is produced that is almost constantly fatal to the chicks.
- F. Bacillary White Diarrhea causes chicks to produce sometimes a whitish, creamy, pasty discharge. These droppings contain the disease germs. (Chart D-4)
- G. Chicks with bacillary white diarrhea are weak, dull, lose their appetite, their wings droop, prefer to stay under the hover and express a peculiar cry of pain when the contents of the bowels are discharged.
- H. From 40 to 90 per cent of chicks affected with bacillary white diarrhea die within two to three weeks. Those chicks which recover and mature to pullets and hens develop diseased ovaries which affect next year's crop of chicks. (Chart D-5 & 6).
- I. To prevent chicks from becoming affected with bacillary white diarrhea:
 - 1. Hatch eggs only from birds that are healthy and free from these disease germs. Determined by blood test.
 - a. Flocks from which all hens have been given the blood test and infected hens removed should be safe flocks from which to secure eggs.
 - b. Flocks from which no heavy chick losses have occurred are apt to be disease free.
 - 2. Keep chicks on ground where disease germs have not been spread by infected chicks or hens.
 - a. Rotate chicks runs as recommended for prevention of round worms and coccidiosis.
 - b. Eliminate all chicks which show signs of sickness by killing and burning.
 - 3. Feed sour milk or buttermilk to chicks. The acid in sour milk serves somewhat as an intestinal disinfectant.
 - 4. Disinfect brooder houses to kill germs that might have been left over from former fowls.

5. Keep all feed troughs and drinking vessels protected from filth and outside contamination as recommended for coccidiosis control.
6. Disinfect drinking water so as to kill germs which might fall into it from sick birds.

Bacillary White Diarrhea is an example of a germ disease caused by a definitely known organism (*Bacterium Pollorum*). Other germ diseases which a poultry health officer must guard against are fowl typhoid, fowl cholera, and avian tuberculosis. For full information on these diseases club members can refer to State and U. S. bulletins.

These discussions dealing with internal parasites, and the filth borne diseases of chickens, will assist young poultry growers to avoid the common pitfalls and help them to become good health officers for their poultry flocks. Healthy flocks can be maintained if the managers realize the importance of clean stock, kept on clean ground, and fed only clean feed and clean water. With sanitary methods both the filth borne diseases and parasites can be avoided.

NOTE: In the preparation of this circular current literature on poultry diseases and subjects related thereto has been freely consulted, especially the charts on poultry parasites and diseases prepared by B. F. Knaupp, R. S. Dearstyne and W. F. Armstrong of the North Carolina State College. Other bibliographic references have been omitted. Prepared by Dr. L. V. Skidmore, Animal Pathology and J. H. Claybaugh Poultry Husbandry.

CHART C

COCCIDIOSIS OF POULTRY CAUSED BY A PROTOZOAN EIMERIA AVIUM ONE STAGE OF LIFE-CYCLE, (8-10 DAYS)



③ SPOROCYSTS
INFECTIVE STAGE
DEVELOPS OUTSIDE



② OOCYSTS
CAST OFF IN
DROPPINGS

CONTROL MEASURES

1. CLEAN PREMISES
2. ROTATE AND CULTIVATE YARDS
3. ELIMINATE ALL SICK BIRDS
4. KEEP OLD BIRDS FROM YOUNG
5. FEED SOUR MILK OR BUTTERMILK
6. CLEAN WATER AND FEED
7. DO NOT CARRY DIRT FROM INFECTED YARDS INTO BROODER HOUSE ON SHOES OR OTHERWISE



① CHICKEN INFESTED
WITH COCCIDIA



④ PREMISES CONTAMINATED
BY INFECTED HEN



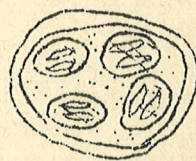
⑤ OPEN FEED TROUGHS AND
DRINKING VESSELS CONTAMINATED



⑥ DISEASED BLOOD
STAINED DROPPINGS



⑦ INTESTINAL TRACT AND CECA
DISEASED - ESPECIALLY CECA.
DESTROY CELLS OF INTESTINE.
"OOCYSTS PRESENT"

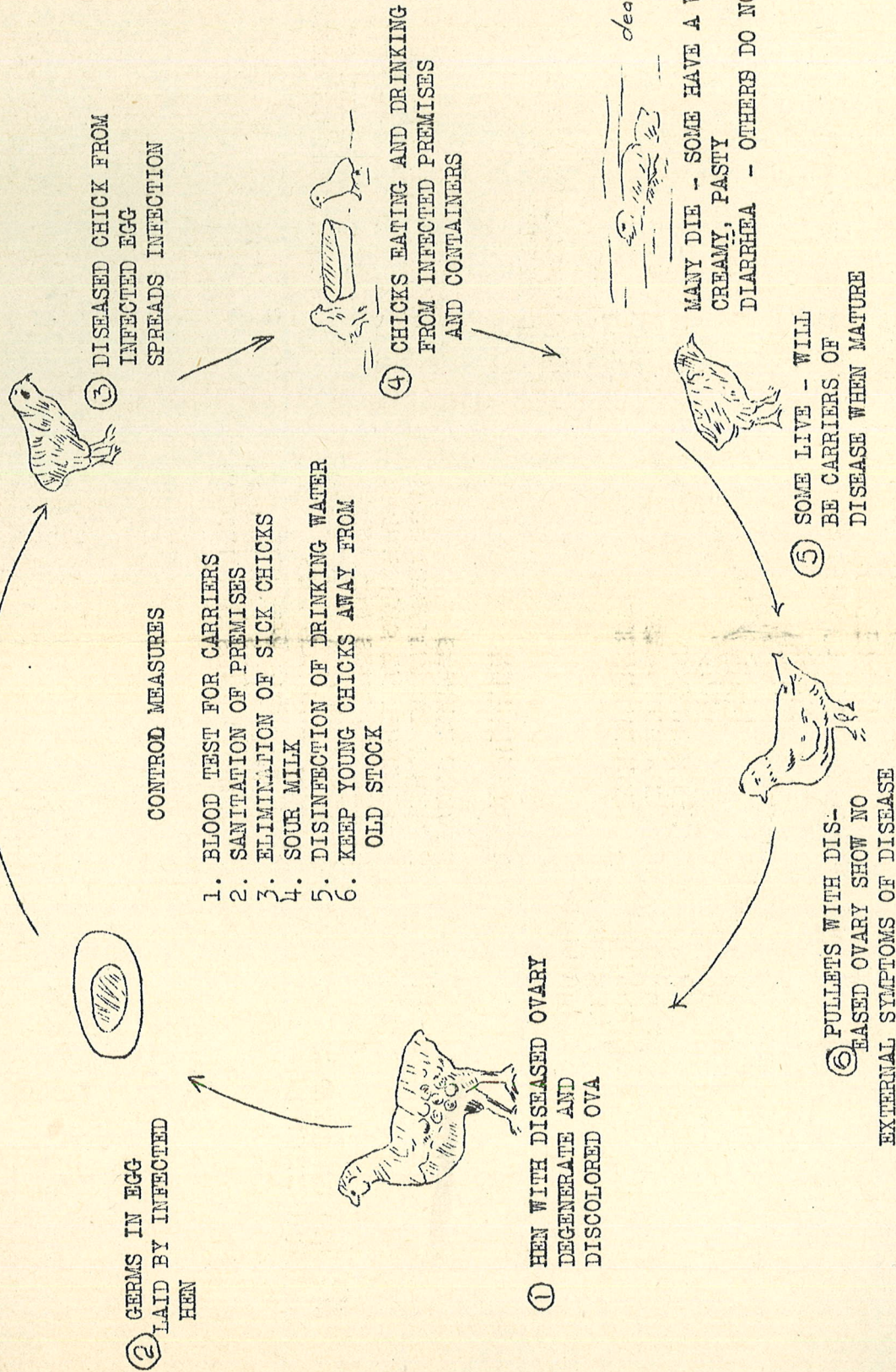


⑧ SPOROCYST STAGE
INFECTIVE STAGE

EACH SPOROCYST CONTAINS TWO SPOOROZOITES

CHART D
BACILLARY WHITE DIARRHEA
CAUSE--(A GERM) BACTERIUM PULLORUM

CYCLE OF DISEASE



CONTROL MEASURES

1. BLOOD TEST FOR CARRIERS
2. SANITATION OF PREMISES
3. ELIMINATION OF SICK CHICKS
4. SOUR MILK
5. DISINFECTION OF DRINKING WATER
6. KEEP YOUNG CHICKS AWAY FROM OLD STOCK

Reference-Kaup, Dearstyne
and Armstrong