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Poultry Parasites and Sanitation

By F. E. HULL

Chicks are not infested with parasites at hatching time.

Chicks may be kept free from parasites by preventing contact with the parasites, parasite eggs, or intermediate hosts.

Intermediate hosts are not dangerous unless they have had access to droppings from parasitized birds.

Parasitized chickens are damaged chickens and usually fail to recover completely following treatment.

Prevention by proper management is the best defense against parasites.

The common parasites of poultry are roundworms, tapeworms, lice and mites. These cause a continuous loss to the poultry industry. The greatest loss occurs among young birds. Adult fowls and contaminated houses and grounds furnish a constant source of infestation for the young chickens. The presence of parasites is an indication of poor sanitation and poor management. Poor health, unthriftiness, and unproductiveness are often directly traceable to the presence of parasites. Methods of prevention that are effective against the common parasites of poultry are effective against other parasites of poultry and aid in the control of a majority of the diseases of poultry.

Roundworms. The common roundworm is yellowish-white in color and from one to four inches long. It is found in the intestines of the fowl. The mature female worm produces a large number of eggs which pass out of the chicken with the droppings. Droppings frequently get into the feed and water containers or become mixed with feed that is picked up from the floor or the ground. In this way roundworm eggs get into the intestines of other fowls. These eggs hatch

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and the small worms become mature in three to four weeks. The female worm then begins to produce eggs.

Roundworm eggs are resistant to heat, cold, and disinfectants. They may remain on the ground or in the chicken houses for more than one year and still be capable of producing worms. Disinfectants kill very few roundworm eggs. The best method is to clean the chicken house frequently.

Treatment. Treatment may be given to the individual bird or to the flock as a whole. Individual treatment is more effective, but flock treatment is easier. A tablet or capsule containing nicotine is the recommended remedy for individual treatment. These capsules or tablets may be obtained from local veterinarians or from dealers in poultry supplies.

Flock treatment is not always effective. A moist mash containing some form of tobacco may be used. The prescribed dosage is as follows: One pound of ground or finely chopped tobacco leaves and stems for each 100 adult birds is steeped for two hours in enough water to cover. The liquid and tobacco then should be mixed with 8 pounds of mash. This mash should be fed wet in the afternoon to chickens that have been held off feed since the previous evening. One gallon of water containing one pound of epsom salt should be provided for each 100 adult birds as soon as the mash is consumed. Smaller chickens should be given proportionately smaller doses.

Several tobacco by-products are on the market for the treatment of chickens for roundworms. If such proprietary remedies are used the directions of the manufacturer should be followed carefully.

Tapeworms. These are white, flat, segmented, ribbon-shaped parasites. Some kinds are so small that it is impossible to see them without a microscope, while others are larger and easily recognized. The head of the tapeworm fastens itself to the intestinal wall. The last segments are the oldest and when mature contain numerous eggs. The mature segments break off and are passed in the droppings.

Tapeworm eggs are not capable of causing infestation of chickens if picked up with the feed or water. It is necessary that the egg be eaten by an intermediate host, develop to a certain point in the intermediate host, and that the intermediate host be eaten by the chicken. Intermediate hosts are flies, grasshoppers, earth-worms, snails, slugs, and beetles. One of the means of preventing tapeworms is the control of intermediate hosts and preventing them from coming in contact with poultry droppings.

Treatments. No highly effective treatment for tapeworms in chickens has been discovered. Kamala is the best remedy for the removal of tapeworms from poultry, altho it cannot be depended upon to remove them all. The dose of this drug is 15 grains (1 gram) for a

mature chicken. This dose should be reduced for birds in a weakened condition and for chickens that are not full grown. For turkeys use the same dose as for chickens, except that especially large birds may be given a 2 gram dose. The Kamala treatment is quite severe and should not be used for flocks in high production or for birds that have chicken pox or other infectious diseases. The birds should be treated in the morning, following a light feeding. It is not necessary to use a physic with this treatment.

Lice. Poultry lice are spoken of as body lice, head lice, and feather lice. These parasites live on the outside of the fowl's body and feed on portions of the feathers or on scales from the skin. Head lice infest baby chicks and body lice and feather lice appear when chickens begin to feather. Lice spend their entire life on the infested fowl. The eggs are deposited singly or in clusters on the bases of the feathers. The eggs hatch in one week and the lice become mature in ten days. The heat of the chicken's body is necessary for the hatching of lice eggs. Lice die very quickly when off the fowl. They pass readily from one chicken to another.

Treatment. A flock of chickens may be freed from lice and kept in this condition. Reinfestation usually comes from stray fowls or from birds added to the flock which have not been quarantined and treated.

The best treatment is a 40% solution of nicotine sulfate. This material should be applied to the perches one-half hour before the birds go to roost. The application may be made with a small brush or an oil can. It is not necessary to cover the entire top of the perch, but only a small strip thru the center.

All poultry should be treated for lice following the cleaning of the houses on March 1 and September 1. This one treatment will not destroy lice eggs; therefore three applications of nicotine sulfate to the perches at intervals of 7 days will be necessary.

Baby chicks will not become infested if the older birds are kept free of lice. The head lice that infest baby chicks may be treated by applying a little lard to the chicks' heads. The chicks must be kept out of the sun for 2 days following this treatment.

All setting hens should be examined carefully for lice. If lice are found the hen should be treated with sodium fluoride powder by the pinch method. This consists in taking a small pinch of powder between the thumb and fingers and rubbing it thoroly under the feathers just below the vent, another under each wing, at the base of the neck and at the base of the tail.

Mites. Poultry serve as hosts for six different kinds of mites. The red mite is found in most flocks. The other poultry mites may be controlled by the treatment for the red mite, or by the treat-

ment for lice. Red mites are blood-sucking parasites. They feed almost entirely at night, and leave the chickens and hide in the chicken house during the day. The eggs are deposited in cracks and crevices on the perches, ceiling, walls, floor, and nests. Mite eggs hatch in two days, and the mites become mature in five days.

Treatment. Red mites are not hard to kill. The greatest obstacle is the difficulty of reaching them in their hiding places. The first step is to get rid of the hiding places. Loose boards and other unnecessary material should not be allowed to accumulate in the chicken houses.

Drainings from the crankcase may be used as a spray to kill mites. A rather coarse spray should be applied from all angles and thoroughly driven into the cracks. Used crankcase oil can be sprayed better if diluted with kerosene at the rate of one part kerosene to three parts of the other material. The spray should be applied to the ceiling, walls, floors, perches, nests, and any other part of the chicken house that might furnish a hiding place for mites.

The treatment for mites should follow the thoro cleaning of the chicken houses on March 1 and September 1. If mites appear between these spraying times the perches, perch supports, and adjoining walls should be painted with used crankcase oil.

PREVENTION OF PARASITES.

Prevention of parasites is dependent upon a proper management program which includes proper disposal of droppings, clean poultry houses, clean ground, clean water containers and clean feed hoppers. This program must be of long duration and the details will depend upon the size of the flock and the amount of land available.

Worm-free flocks require less feed, produce more, and are more resistant to disease than infested flocks. Because of permanent injury to birds by parasites and a lack of highly efficient worm remedies, treatment of poultry for parasites is often unsatisfactory.

Disposal of Droppings. It is always best to attack parasites at the weakest point in their life cycle. The eggs of all roundworms and tapeworms of poultry are found in the droppings from parasitized birds. The eggs may not be the weakest point in the life cycle of all of these parasites, but it is a point where they may all be attacked simultaneously. Brooders, range shelters and laying houses should be kept clean. The droppings should be placed in containers that protect them from insects and poultry until they can be removed to a place remote from the poultry houses and yards.

Cleaning the Brooder House. Parasite prevention depends upon the poultryman's ability to keep the chicks separated from the para-

sites and the parasite eggs. The brooder house should be cleaned and moved to clean ground before the chicks are put into it.

How often to clean. The brooder house should be cleaned three times each week. As the chicks increase in size, more frequent cleaning may become necessary. As soon as evidence of a disease, such as coccidiosis, appears the brooder house should be cleaned daily.

How to clean. Old brooder houses should be cleaned in the fall or winter, before being moved to clean ground. Too much reliance should not be placed on disinfectants. All brooder house equipment should be removed except the stove. Scrape and sweep the ceiling, walls, and floor until all litter and droppings have been removed. After the house has been thoroly dry cleaned it should be scrubbed with hot lye water, made by adding one 13-ounce can of lye to 5 gallons of hot water. After scrubbing with hot lye water wait one hour and then rinse the house with hot water. The house should then be sprayed with a 5-percent solution of some cresol compound. Let the house dry and then spray the ceiling, walls, and floor with used crankcase oil. The brooder house is now ready to be moved to clean ground.

Clean and disinfect feed containers, water containers, and all other equipment at the same time and in the same way that the house has been cleaned and disinfected.

Cleaning the brooder house after chicks have been put into it should be done with a minimum amount of water and disinfectants. Moisture aids the development of coccidiosis. Frequent dry cleaning by scraping and sweeping is best. The use of a minimum amount of litter makes frequent cleaning less difficult.

Cleaning the Range Shelter. About June 1 growing chickens are large enough to get along without heat from the brooder stove. At this time they may be moved to a range shelter or allowed to remain in the brooder house. Systematic cleaning of the brooder house or range shelter should not be neglected after it becomes unnecessary to care for the brooder stove. Insects that serve as intermediate hosts for parasites increase in number during June, July, and August. It is impossible to get rid of insects, therefore poultry manure should be protected from them. This can be accomplished by frequent cleaning.

How often to clean. Range shelters should be cleaned three times each week. As soon as evidences of disease or parasites appear the range shelters should be cleaned daily.

How to clean. On June 1 the range shelters should be thoroly cleaned and disinfected following the method that was suggested for the brooder house. At this time the spray of used crankcase oil is especially important. This spray serves as a preventive for mites.

Following this thoro cleaning and disinfecting the cleaning should be done without the use of water and disinfectants.

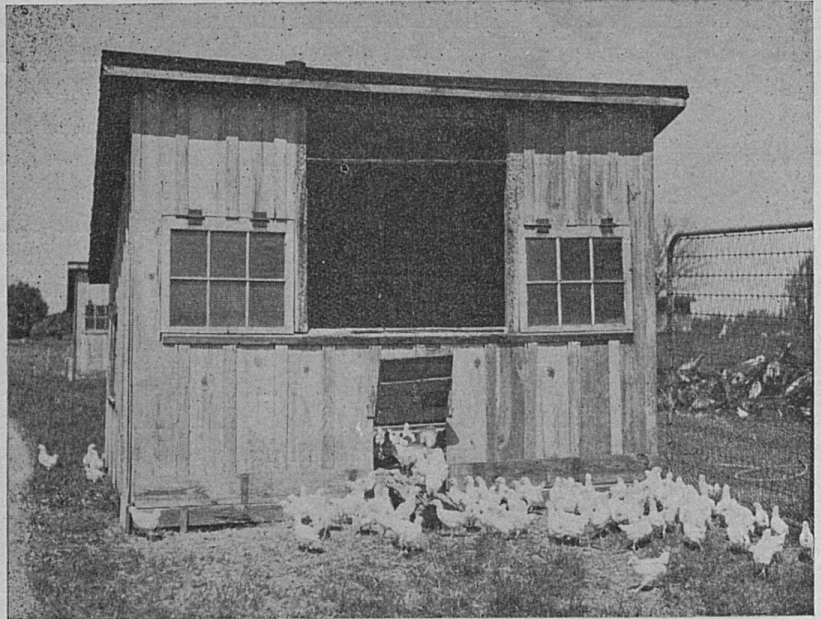


Fig. 1. Brooder house in good condition.

Cleaning the Laying House. The breeding and laying flocks are a constant source of supply of parasites and parasite eggs. Hens and pullets allowed free range void more than 50 per cent of the droppings in the house, therefore the laying house should be cleaned thoroly and systematically.

How often to clean. The house should be cleaned thoroly and disinfected twice each year, March 1 and September 1. The house should be sprayed for mites and all poultry should be treated for lice at these times. Dropping boards should be cleaned each week, and floors should be cleaned each month. More frequent cleaning of floors and dropping boards may become necessary in damp weather.

How to clean. All movable equipment should be taken from the house. All litter, droppings and dirt should be burned or taken to a place remote from the poultry houses and yards. The house should be thoroly dry cleaned by scraping and sweeping. Ceiling, walls and floor should be scrubbed with hot lye water, made by adding one 13-ounce can of lye to 5 gallons of water. Rinse the house with hot water and then spray with a 5-percent solution of some cresol compound. Let the house dry, then spray the ceiling, walls, and floor with used crank-case oil.

Clean and disinfect feed containers, water containers, roosts, nests, and all other equipment at the same time and in the same way that the house is cleaned and disinfected.

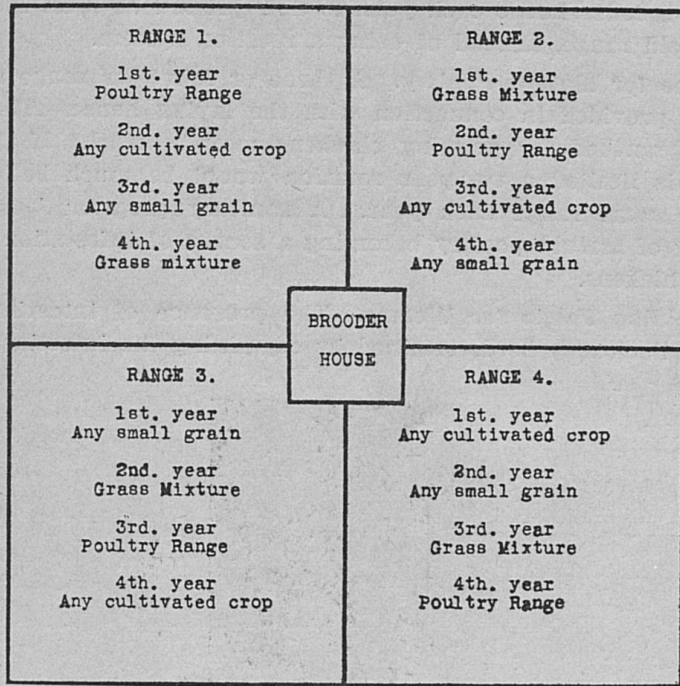


Fig. 2. Brooder house and four-year rotation.

Apply a 40% solution of nicotine sulfate to the roosts, as directed for control of lice, before allowing the chickens to come into the house.

The monthly cleaning of the floor and the weekly cleaning of the dropping boards is a matter of scraping and sweeping—dry cleaning. Proper construction of the house and dropping boards makes cleaning less difficult.

The September cleaning and disinfecting should be done before the pullets are housed. All pullets should be deloused immediately after being put into the laying house.

Ranges for Growing Chickens. It is especially important that growing chickens have a clean range. All the work of keeping a brooder house clean is lost if chickens are turned out on a range infested with parasite eggs. The best plan is to provide four ranges, a different one to be used each year. The ranges not in use may be cultivated, or mowed frequently. Weeds, brush, boards or other trash should not be allowed to accumulate on any poultry range. Trash harbors insects that serve as intermediate hosts for parasites of poultry. A four-year rotation is suggested. This system makes yearly

moving of the brooder house unnecessary. Four yards surround the house, each to contain at least one-fourth acre.

If it is impossible to begin with clean ground it would be best to move the brooder house each year to new ground at least 100 yards from the old range, instead of using a rotation system.

Ranges for Mature Poultry. A three or four-year range rotation should be provided in connection with the laying house. The range rotation described for growing chickens may be used. If the land available is limited a two-year rotation would be much better than using the same range each year. A sanitary program lessens the possibility of mature poultry becoming a source of infestation for the growing chickens.

Examining Fowls for Worms. The presence of intestinal parasites in a flock may be determined by examining the intestines of the

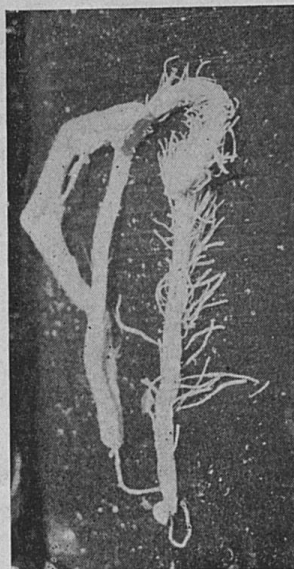


Fig. 3. Intestines slit open, to show tapeworms.

chickens that are killed for table use. All chickens that die should be examined. Remove the intestines from the dead bird and slit them open with a small knife or a pair of scissors. If the opened intestines are placed in a pan of warm water the smaller worms will be easier to see.

Disposal of Dead Fowls. Fowls that die should be burned immediately or buried deep. An outbreak of disease or parasites can often be stopped by killing and burning all sick chickens. Dead baby chicks may be burned in the brooder stove.