

**Tapeworms of poultry : how to control them / [prepared by the Animal Disease and Parasite Research Division, Agricultural Research Service].**

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# Tapeworms of Poultry

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# Tapeworms of Poultry . . .



## HOW TO CONTROL THEM

Heavy infestations of tapeworms cause poultry to lose weight. They cause diarrhea and weakness. A few of these worms will not harm a bird, but many of them may cause it to starve to death. Leg weakness and paralysis frequently are blamed—without proof—on tapeworm infestation. Young birds are affected more seriously than older birds.

At least 10 different species of tapeworms live as parasites in the intestines of chickens. Some of these, and certain other species, are found in turkeys, ducks, geese, and guinea fowl.

Tapeworms are prevalent where poultry raising is a long-established practice. Not all the different poultry tapeworms are found everywhere, however.

## WHAT A TAPEWORM LOOKS LIKE

Tapeworms are flat, segmented, white or yellowish, ribbonlike worms. One of the smallest tapeworms is about one-sixth inch long when mature and has only a few segments. Others are several inches long and have hundreds of segments.

At its narrow end, a tapeworm has a holdfast organ. The rest of the worm is a chain of boxlike segments. The holdfast organ has four cuplike suckers and, usually, a structure covered with spines or hooks that anchor the worm to the intestinal wall and keep it from being swept outside with the droppings. The holdfast organ is buried in the tissues; the chain of segments hangs free in the intestinal cavity.

## HOW TAPEWORMS GROW

New segments are added just back of the holdfast organ. This means that the farther away from the holdfast organ that a segment is, the older it is. You cannot see any internal structures in the segment when it is first formed, but, as it moves along the "assembly line" and becomes older, the reproductive organs and some other structures appear. The ripe segment is nothing but an egg sac that becomes detached from the tapeworm chain and passes out with the droppings.

## HOW POULTRY GET TAPEWORMS

Birds become infested with tapeworms by eating insects, snails, slugs, or earthworms—the intermediate hosts that carry the immature tapeworms in their bodies. These hosts eat segments that are in the droppings of infested birds. The segments contain eggs. The eggs develop into cysts if segments from the right tapeworms get into the right host. The cysts are actually immature tapeworms with fully developed holdfast organs, but without segments. They do not develop further until the intermediate host is swallowed by a susceptible fowl. Then, the heads pop out from the cysts, attach to the intestinal wall, and begin to produce segments. Without insects, snails, slugs, and earthworms, tapeworms cannot complete their development.

Poultry never get tapeworms merely by coming in contact with infested birds or by swallowing the segments that are in the droppings of infested birds.

## HOW TO FIND TAPEWORMS

You cannot be sure that a live bird has tapeworms unless you see a tapeworm segment in the droppings. Since tapeworms produce no spectacular effect—they harm your chickens chiefly by robbing them of their food—it is easy for you to overlook their presence.

The only certain way of discovering whether your birds are infested is to kill a sick or unthrifty bird and examine its intestines. After you cut open the intestines, rinse them and put them in a pan of water. If a tapeworm is present, you can see it floating freely in the water with one end fastened to the intestinal wall. One of the tapeworms affecting poultry is so small you need a microscope to find it. This is also one of the most harmful species.

Another kind of tapeworm causes nodules to form on the outer intestinal wall opposite the place where the holdfast organs penetrate the inner tissues. These nodules are like those caused by tuberculosis, but occur only on the intestines. Tuberculosis nodules are found on the walls of the liver and spleen, as well as on the intestines.

Send any bird that is thin, weak, or looks starved to a poultry diagnostic laboratory or the veterinary department of your State University for examination. If they find tapeworms, you should use the control measures outlined.

Figure 1.—Chicken intestine cut open to show heavy infestation of tapeworms. (Courtesy of J. E. Ackert.)

Figure 2.—Nodules on outer wall of intestine caused by tapeworms *Raillietina echinobothrida*. (Courtesy of L. D. Bushnell.)





## CONTROL MEASURES

### Treatment

No drug has yet been found that will remove all tapeworms in poultry. Only two or three species of tapeworms that do not fasten their heads too deeply into the intestinal wall usually can be removed, heads and all, by using drugs. Unless the heads are removed or destroyed, new segments will develop within a few weeks.

### Prevention

The best way to control tapeworms is to kill their intermediate hosts.

*House flies* can be controlled most effectively by sanitation and poisoned baits. These flies breed in manure, garbage, or wherever such filth accumulates. Find and promptly eliminate all breeding places. Remove poultry manure daily whenever possible and dispose of it in such a way that it will be unsuitable for fly breeding. On the farm, scatter it thinly over the fields so that it will dry out quickly. When this is not practical, you can store manure in boxes or pits where flies cannot reach it, and sell or give it away later as fertilizer.

Fly traps are of only limited value. Suitable baits must be used to attract the flies to the traps.

Either dry or liquid poisoned baits are effective in controlling house flies around poultry houses. The commonly used poisons are malathion, Diazinon, and Bayer L 13/59.

Ready-to-use baits containing these poisons are on the market. However, you can make your own liquid bait by buying one of the poisons and mixing it with molasses, sirup, or sugar and water.<sup>1</sup> To make a dry bait, mix sugar with the poison and stir thoroughly. A small amount of lampblack mixed with the bait will color it so that it may not be mistaken for ordinary sugar.

Apply poisoned bait under the cages, on window sills, underneath roosts and sunporches, in feed rooms, and in other places where flies collect. Sprinkle the bait where poultry cannot get it. Be careful not to get any poison in feed, water, or utensils.

Control measures for *stable flies*, as well as house flies, are directed primarily toward their breeding places. Loose piles of straw or grass clippings are important breeding places. Do not allow straw to become wet or decayed before removing it. Moisture is necessary for the development of fly larvae. Therefore, promptly remove moist feed wastes and piles of

<sup>1</sup> Directions for making baits are given in *The House Fly: How To Control It*, U. S. Department of Agriculture Leaflet 390.

weeds and other vegetation. Residual applications of malathion and Diazinon on the walls, ceilings, and other resting places also provide effective control of the stable fly.<sup>2</sup>

*Grasshoppers* are intermediate hosts of a tapeworm that infests the turkey. These insects may be controlled by applying a 5-percent malathion dust or spray and, to some extent, by agricultural practices.<sup>3</sup>

Where *ants* are involved as intermediate hosts, they may be controlled by using a poison. Chlordane is the most effective. It is sold in hardware stores, drug-stores, and garden supply stores. Apply the insecticide to the ants' nests and to the surfaces over which they crawl.<sup>4</sup>

*Ground beetles* are difficult to control. They, as well as *slugs* and *snails*, collect under loose boards and other protected places where it is moist. Removing these and eliminating moist feed wastes from poultry yards will discourage their presence.

Where *slugs* and *snails* are involved as intermediate hosts, they may be controlled with a commercially prepared bait containing metaldehyde. Apply bait in late afternoon or evening. A 5-percent chlordane dust is also effective in controlling these pests.<sup>5</sup>

You can reduce the number of *earthworms* considerably by keeping the yards dry and well drained, and avoiding the accumulation of manure. Chlordane, applied either as a spray or dust, has been found effective in destroying earthworms in the soil.

**Caution.** Insecticides are poisonous. Handle them with care. Follow the directions and heed all precautions on the container label. If any insecticide is spilled on the skin, wash immediately with soap and water. If it is spilled on the clothing, change to clean clothes immediately.

<sup>2</sup> For further information, see *Stable Flies: How To Control Them*, U. S. Department of Agriculture Leaflet 338.

<sup>3</sup> For further information, see *Grasshoppers: A New Look at an Ancient Enemy*, U. S. Department of Agriculture Farmers' Bulletin 2064.

<sup>4</sup> For further information, see *Ants in the Home and Garden: How To Control Them*, U. S. Department of Agriculture Home and Garden Bulletin 28.

<sup>5</sup> For further information, see *Insects and Diseases of Vegetables in the Home Garden*, U. S. Department of Agriculture Home and Garden Bulletin 46.

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