

Treatment of Intestinal Worms in Broiler Breeders

**This article was updated from the original version written by Dr. Suzanne Young Dougherty and Dr. James Dawe (2008).*

Intestinal worms are commonly diagnosed during necropsy of pullets, cockerels and occasionally broilers. A preventative worming program is suggested in rearing breeders to reduce the incidence and severity of intestinal worms. Severe intestinal worm infestations can cause diarrhea, poor absorption of nutrients, and enteritis. Clinical signs commonly seen with intestinal worm infestations include rough feathering, retarded growth, pasty vents and pale birds. Worms can be carriers of infectious diseases, including blackhead (*Histomonas meleagridis*), which has been diagnosed more frequently in recent years. Early preventative programs are necessary for control of intestinal worms.

Cleaning out houses and placing new litter with every flock will minimize exposure to intestinal worms. Not only do houses containing built-up litter harbor intestinal worm eggs that could affect the next flock, they also serve as a reservoir for darkling beetles that are associated as carriers for worm transmission. Although preventative programs are ideal, occasionally outbreaks will occur. **Table 1** below describes the most common intestinal worms in chickens; **Table 2** summarizes treatment options.

Table 1: Common intestinal worms in chicken.

Common Name	Scientific Name	Location	Age of birds when adult worms first appear	Description	Intermediate Host	Treatment Options
Roundworm (Ascarid) 	<i>Ascaridia galli</i>	Small intestine	> 4 week	Large, thick, yellowish-white 50-116 mm long 500 µm-1.8mm wide	None	1. Levamisole hydrochloride 2. Piperazine 3. Albendazole 4. Oxfendazole 5. Fenbendazole 6. Ivermectin
Tapeworm 	Many	Small intestine	> 5 week	Segmented, white Length and width varies greatly with species.	1. Darkling beetle 2. Earthworm 3. Grasshoppers 4. Housfly 5. Beetle 6. Ant 7. Stable fly	1. Albendazole
Capillaria 	<i>Capillaria obsignata</i> (most common)	Small intestine (occasionally ceca)	> 3 week	Hair-like worm hard to visualize 7-18 mm long 49-80 µm wide	None	1. Levamisole hydrochloride 2. Albendazole 3. Oxfendazole 4. Fenbendazole 5. Ivermectin
Cecal Worm 	<i>Heterakis gallinarum</i>	Cecal pouches	> 6 week	Small, white, hard to visualize. Detected by their movement in cecal contents. 7-15 mm long	None (earthworm vector for blackhead)	1. Levamisole hydrochloride 2. Albendazole 3. Oxfendazole 4. Fenbendazole 5. Ivermectin

When administering treatment, follow all manufacturer recommended doses and consult your veterinarian for prescriptions and withdrawal times.

Table 2: Drugs for treatment of intestinal worms via drinking water.

Active Ingredient	Trade Name	Susceptible Worms	Problems and Drug Side Effects
Piperazine Sulfate	Wazine 34%	Roundworms only	1. Resistance has been associated with this drug. 2. Water soluble
Levamisole Hydrochloride	Prohibit Solution	Roundworms, Capillaria, cecal	1. No effect on egg production or performance when used 8-16mg/lb body weight dose. 2. Water soluble
Albendazole	Valbazen Suspension	Roundworms, Capillaria, cecal and tapeworms	No reported negative effects
Oxfendazole	Synanthic	Roundworms, Capillaria, cecal	Can settle in water lines
Fenbendazole	Safe-Guard AquaSol	Roundworms, Capillaria, cecal	No reported negative effects
Ivermectin	Ivermectin 1% (10mg/ml)	Roundworms, Capillaria, cecal	Can settle in water lines

HELPFUL HINTS WHEN CALCULATING DOSAGES:

1. Calculate total body weight of flock (lbs/kg)
2. Dose mg X (lb/kg in flock) = Total mg for flock
3. Be sure active ingredient and dose are in the same unit. 1 g = 1000 mg
4. Total grams needed for flock / grams active ingredient per package = # of packages for flock

CALCULATION EXAMPLE (Imperial):

1. A house with 9000, 5 lb females and 900, 5.5 lb males:
 $9000 (5) + 900 (5.5) = \sim 49,950$ total lbs in flock
2. If the dose is 16 mg/lb:
 $49,950\text{lbs} \times 16\text{mg} = 799,200\text{mg}$ total for house
3. To convert to grams: $799,200/1000 = 799.2$ g
4. If there are 544.5g of active ingredient per packet:
 799.2 g needed / 544.5 g active ingredient = ~ 1.5 packages for that flock

CALCULATION EXAMPLE (Metric):

1. A house with 9000, 2.2 kg females and 900, 2.5 kg males:
 $9000 (2.2) + 900 (2.5) = \sim 22,050$ total kgs in flock
2. If the dose is 35 mg/kg:
 $22,050$ kg x 35 mg = $771,750$ mg total for house
3. To convert to grams: $771,750/1000 = 771.7$ g
4. If there are 544.5 g of active ingredient per packet:
 771.7 g needed / 544.5 g active ingredient = ~ 1.4 packages for that flock

REFERENCES

1. Dawe, J. and C.L. Hofacre, April 2002. With Hygromycin Gone, What are Today's Worming Options? The Poultry Informed Professional: Issue 60; 1-8.
2. McDougald, L.R. 2003. Internal Parasites. In: Diseases of Poultry. Y.M. Saif (ed.) 11th ed. Iowa State University Press, Ames, IA:931-972.

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