

Treatment of Intestinal Worms In Broiler Breeders



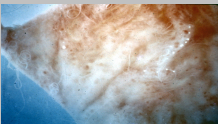

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In recent years, all FDA approved intestinal worm treatments administered in poultry feed have been withdrawn from the US market. This left the industry dependent on piperazine, the only water administered deworming drug approved for poultry. Piperazine is commonly used in both preventative and treatment programs. Due to widespread usage of piperazine, the industry suspects worms are building some resistance against this drug, possibly resulting in more intestinal worm outbreaks.

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*), (see Aviagen Technical Update Vol: 2 for more information) which has been diagnosed more frequently in recent months.

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 summaries treatment options.

Table 1: Common Intestinal Worms of Chickens

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	> 4wk	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	> 5wk	Segmented, white Length and width varies greatly with species.	1. Darkling beetle 2. Earthworm 3. Grasshoppers 4. House fly 5. Beetle 6. Ant 7. Stable fly	1. Albendazole
Capillaria 	<i>Capillaria obsignata</i> (most common)	Small Intestine (Occasionally ceca)	> 3wk	Hair-like worm hard to visualize 7-18 mm long 49-80 µm wide	None	1. Levamisole hydrochloride 2. Albendazole 4. Oxfendazole 5. Fenbendazole 6. Ivermectin
Cecal Worm 	<i>Heterakis gallinarum</i>	Cecal pouches	> 6wk	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 4. Oxfendazole 5. Fenbendazole 6. Ivermectin

Piperazine is the only FDA approved drug for treatment of roundworms in poultry. Currently, there are no approved drugs for treatment of Capillaria, tape or cecal worms in poultry. As a result, the drugs below (other than Piperazine) are used extra-label in drinking water when prescribed and monitored by a licensed veterinarian.

FDA prohibits extra-label drug use in feed; therefore all treatments must be administered via drinking water. Follow all manufacturer recommended doses.

Consult your veterinarian for prescriptions and withdrawal times.

Table 2: Extra-Label Drugs Used 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	Cattle Safe –Guard	Roundworms, Capillaria, cecal	Can settle in water lines
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)
2. Dose mg X (lb in flock) = Total mg for flock
3. Be sure active ingredient and dose are in the same unit. 1g = 1000 mg
4. Total grams needed for flock / grams active ingredient per package = # of packages for flock

CALCULATION EXAMPLE:

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