



HOW INTESTINAL WORMS IMPACT FREE RANGE FARMS

Free range production has many positive benefits – unfortunately exposure to internal parasites is not one of them. This month we are discussing one of the challenges facing free range layer farming – intestinal worms.

To understand them better we need to know more about them – their lifecycle, their hosts, their impacts, and how best to control them. There are four major types of intestinal worms found in poultry – *roundworms*, *hairworms*, *caecal worms* and *tapeworms*.

Roundworms (*Ascaridia galli*):

These are the most commonly seen intestinal worm. They are white, up to 5 cm long and may be visible in droppings in heavy infestations. A severe infestation can cause a reduction in nutrient absorption, intestinal blockage, and death.



Occasionally, they migrate up a hen's reproductive tract from the cloaca and become encased in a developing egg.

This is a seriously unwanted consequence of heavy infestations. The lifecycle of roundworms is direct – eggs are expelled in the hens' droppings and are directly infective if eaten. The eggs can survive in the environment for long periods so are difficult to eradicate once an infection is established in a free-range system.

Hairworms (*Capillaria*):

These are much smaller (hair-like) and are barely visible with the naked eye but can cause significant damage even in only moderate infestations.

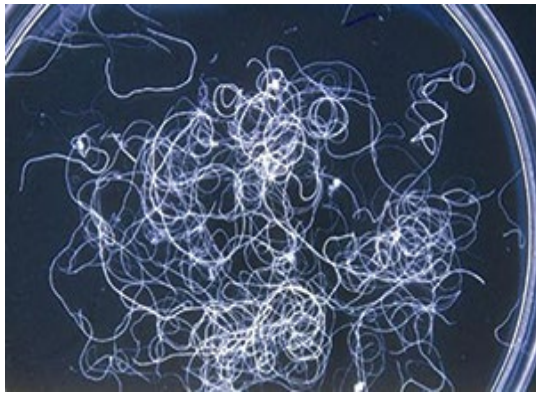


IMAGE: NPN - Hairworms

There are two main species – one lives in the crop and the other in the small intestine.

Caecal worms (*Heterakis gallinarum*):

These worms spend most of their time in the caecae. Caecal worms are generally harmless, but can be the intermediary host of another parasite, *Histomonas meleagridis*, the cause of blackhead disease. So, although chickens are generally not impacted by caecal worms, controlling the worms is still important for blackhead control.

Tapeworms:

There are several species of tapeworms which are found in poultry. Tapeworms require an intermediate host to complete their life cycle. These intermediate hosts include ants, beetles, houseflies, slugs, snails, earthworms, and termites.



IMAGE: NPN - Tapeworms

They spend most of their life in the intestines and generally cause little impact on performance, unless the worm burden physically occludes the intestine. There is now an approved treatment against tapeworms, so controlling the intermediate hosts of tapeworms has become much easier.

The impacts of worm infestations:

Reduced vitality, poor body weight gain leading to unevenness or stunted birds, reduced egg production and egg size, decrease in shell strength, reduced yolk colour. Affected birds may be dull and show pale combs. Increased cannibalism through vent pecking due to straining. Death, in very heavy infestations.

Treatment options:

There are now three anthelmintics (drugs for intestinal worm control) currently registered for use in Australia – piperazine, levamisole and flubendazole. Each of these is suitable for use in laying birds with no withholding period for eggs, while levamisole and flubendazole have a seven day withholding period for meat.

There are some fundamental differences between these three chemicals – Piperazine only has activity against roundworms, not against hairworms, caecal worms or tapeworms. Levamisole on the other hand is effective against round, caecal and hair worms. Flubendazole has efficacy against all four types of worms. It is wise to rotate between the three types of anthelmintics to reduce the risk of resistance development.

There are no products registered for the control of blackhead, so it becomes even more important to control its intermediate host, the caecal worm.

Effective control of intestinal parasites is aimed at breaking the cycle of infection. Strategic use of anthelmintics during rearing will help to reduce the challenge, and giving a prophylactic treatment before moving hens from rearing to production sheds will assist in breaking the infection cycle.

But this needs to be combined with other good management practices such as

limiting stock density on the range, rotation of the range, good drainage, and the removal of heavily contaminated soil around the shed before new pullets arrive.

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** Dr Rod Jenner assisted Egg Farmers of Australia with its submission on the Australian Animal Welfare Standards and Guidelines for Poultry submission.*