

Anthelmintics—and wormer resistance

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When we first started keeping geese in the early eighties, I don't think Flubenvet (flubendazole) had been invented and we were advised to use piperazine citrate as a wormer (i.e. as a vermifuge, or anthelmintic). It might have been sufficient for controlling some types of worms, but it did not kill gizzard worm in geese. So, we had to look for a more effective solution, which turned out to be Panacur, containing Fenbendazole. It was not then licensed for birds, but zoos had been using it on geese and it became a good back stop for making sure that goslings were reared without problems. Panacur had to be used twice, we found, because although it killed the adult gizzard worms, it did not kill the worm eggs. Before the life cycle of egg to worm was complete, you had to kill the new batch of worms before they bred again at their cycle of as little as 21 days. It is, however, very safe, and it has been licensed in recent years for use with poultry. Vets have been using it as a convenient way to control worms in chickens, particularly when a single bird is taken for treatment.

Levamisole

Another wormer supplied by our vet in the eighties and nineties was levamisole, found in sheep wormer brands. It could be given as a single drench, diluted with water. Or it could be given to a group of birds in a bowl of water, as long as all the dose was consumed. The disadvantage of this method was that certain individuals did not like the taste and held out longer than others. So, I doubt if a correct dose was always taken.

Both levamisole and Panacur could also be mixed in with the food (as an alternative to a drench) but I also doubted if that was evenly distributed as well. Levamisole used to be very effective, but it was not an ideal wormer for goslings, and it also has a long withdrawal time if the meat is for consumption. It has now also become useless because of resistance of the parasites to the chemical. Farmers in Wales were reporting resistance to this wormer in sheep around 15 years ago.

Flubenvet

The licenced wormer Flubenvet became available for poultry. It was marketed as a powder to be used as a dressing on the feed. The white powder sticks to pellets and wheat best if the grains are first dressed with a small amount of food (cooking) oil. It was optimistically advocated for use several times a year so that the worm eggs were 'hoovered up' from the ground—good for sales no doubt. The chemical could be applied in such a small amount that any poultry eggs could be eaten over the period of dosing which, as many of you will know, is seven days.

Worries about over-dosing have changed the availability of this drug. Presumably, residues in eggs for table consumption were the potential problem. Now, only small, expensive, pet-chicken dosage packs of the powder are available over the counter (60g for 20 chickens). We are not to be trusted.

As a consequence, poultry food manufacturers such as Marriages now supply this anthelmintic compounded into their layer pellets. It's a very convenient ration and has much to recommend it. Even our local animal feed producers are now marketing this product in layer pellets. And I suspect it also works out cheaper to use than the small mix-it-yourself packs. A 10kg pack of medicated pellets is available for example at <https://www.farmandpetplace.co.uk>

This medicated food suits people who keep adult birds as a laying flock, but there are problems for breeders and goose keepers. Geese often don't like pellets, and certainly won't eat

them for a week. They will not get a full dose of the anthelmintic if they are also consuming grass. In addition, a layers' ration is not good if birds are not in lay. This includes geese for most of the year, drakes, and young birds. A diet high in calcium (calcium can be 3–4% of the feed in a layers' ration) is bad for their health and can lead to calcification of the kidneys. Growing birds need the correct balance of phosphorus and calcium for good bone formation, and they therefore need a grower (not layer) ration.

The product Flubendazole is also available as Solubenol and is fine for larger groups of birds where a whole pack can be used. Further info for this POM (Prescription Only Medication) is given on <https://myhealthbox.eu/en/medicine/solubenol/2647151>

Resistance to anthelmintics

I've personally tried to use wormers less and less because of the problem of resistance of worms to the chemicals. Piperazine probably never was much good, but levamisole was OK twenty years ago. Its use over a long period of time has allowed the worms to adapt to its properties. Every time a medicine is used, some of the parasites live through it and pass on their resistance to the next generation; so this could also happen with Flubenvet. Do watch out for any indication of gape worms causing problems. Geese are particularly susceptible because of their grazing habit, and also young ducks because their windpipe is soft and the worms can hang on. If any coughing, limping or a crook neck is not cured by a wormer, then get another type of anthelmintic before further damage is done.

The best strategy of course is to ensure that the birds have a large area to free range so that the ground is relatively clear of parasites. Many duck keepers who have only a few adult birds have no need to worm their pets. Ducks are also probably more resistant to internal parasite than chickens. Problems mainly arise where the ground has been used for many years, and young birds are reared on it. Youngsters are more susceptible to infestation and so need watching carefully.

Gut health

Verm-X for Poultry is a widely used herbal product especially in organic systems. Its name suggests that it gets rid of worms. It comes in liquid or pellet form and should be given for three days out of every month throughout the year. Judging by the tests conducted by Janssen Company (manufacturers of Flubenvet), herbal products do not kill worms. And I am sure they are right that herbal preparations do not kill them stone dead. However, herbal products probably do support the health of the gut and have been used as vermifuges in the past—before the development of modern pharmaceuticals. So, as long as you don't expect it to be of use in a crisis, it's probably good practice to continue with it.

Ground care

If you cannot move your flock to clean ground on a regular basis, then liming the ground helps reduce the bacteria count. Bacteria do not like an alkaline pH around 7, though grass does like pH around 6.5. Liming may also interfere with worms at the larval stage.

Net-Tex ground sanitising powder which contains copper sulphate and Peroxy disinfectant also kills worm larvae by splitting the cuticular layer outer skin which causes dehydration and mortality. It is safe for hens, but I'd be more circumspect with ducks because of their dibbling habits, and vacate the ground for a while before reintroducing the ducks.

<https://www.flytesofancy.co.uk/products/net-tex-ground-sanitising-powder>

Emergency

In an emergency, where birds appear to be acutely affected by parasites, a one-off treatment may be needed. It's no good using Flubenvet on the food for a week if a bird is very ill. In such a case, a drench such as Panacur is very useful. In addition, Ivermectin drops are also used for non-food chain birds. These are not licensed for poultry at this time because of worries regarding residues in eggs and meat. However, Ivermectin is widely used by vets for poultry. It is applied as drops to the skin and kills both internal and external parasites.

Good Practice

- Herbal treatments promote gut health but will not kill infestation.
- Use clean ground, especially for rearing.
- Observe withdrawal times when using any anthelmintic.
- Don't use an anthelmintic in the breeding season—the chemicals will affect the embryo. Make sure the birds are healthy beforehand.
- A worm egg count can be used to determine the level of parasite infection.

For further details on worms see

<http://www.msdevetmanual.com/poultry/helminthiasis/overview-of-helminthiasis-in-poultry>

<https://www.youtube.com/watch?v=puUxZRXL864>