

Sandhill Veterinary Services

Game Bird, Poultry and Pigeon care

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WELCOME to our newsletter for grouse clients with the lead article exploring the lifecycle and control of *Trichostrongylus tenuis* worms.



Office Opening Times:

Monday-Friday
8.30am - 5.00pm

Saturday
9.00am - 12.00noon

All other times by
appointment only

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Grouse Newsletter

Trichostrongylus tenuis—the parasite and its lifecycle.

Adult *Trichostrongylus tenuis* worms live in the caecae of grouse and usually they live there for long periods as the birds' immune system is often not able to expel them. The adult female worms lay eggs throughout their lives. These are voided in the caecal pats and the eggs develop into infective larvae in and around these pats. The time taken for the eggs to hatch and the larvae to become infective varies depending upon humidity and environmental temperature. In typical winter conditions between November and mid-February the larvae are all likely to die before reaching the infective stage. A peak of infective larvae usually become available late May and are able to infect chicks as well as adults. In hot dry summer conditions both the eggs and any developing larvae are likely to be killed by desiccation but in a mild, moist autumn worm burdens can rise rapidly. High levels of worms can result in worm-induced crashes in grouse numbers as seen in 2005. Less dramatic but of real concern are the detrimental effects on the breeding production of grouse caused by non-lethal levels of worms.

The worms cause damage to the lining of the caecal wall allowing protein to leach into the caecae and be voided in the faeces. The natural diet of grouse is not particularly protein rich so birds can rapidly go into negative protein balance if there are significant levels of *Trichostrongylus tenuis*. This leads to loss of condition, a reduced ability of the birds to rear young and the possible death of birds in severe cases.

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The control of *Trichostrongylus tenuis* – the use of medicated grit

There are two available medicated grit treatments both using the drug Flubendazole as the active ingredient.

Low strength or standard products consist of grit of a variety of sizes suitable for both young and adult birds with a fat coating binding the Flubendazole to the grit at levels giving a final concentration of 1mg / gram to 2mg / gram of finished product. Using the 5% flubendazole licensed for use in the UK this is as high a level of drug as can be practicably added to the grit.

High strength product consists of graded Cornish quartz grit with particles primarily between 2.0 -2.5mm in diameter. These are coated with food-grade wax and using a suspension of 50% flubendazole (imported under a Special Import Certificate) give a final concentration of 10mg / gram of finished product.

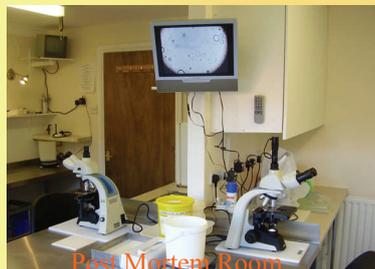
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Trichostrongylus tenuis

Laboratory facilities at Sandhill Veterinary Services

The practice has both a post mortem room and laboratory facilities on site which allows us to provide a full diagnostic service to game bird clients.



Post Mortem Room



Laboratory

The use of medicated grit

The objective in using any product should not be to try to eliminate all the worms. We are never going to achieve 100% elimination in field conditions and if levels are kept too low this may well result in drug resistant strains of worms becoming dominant relatively quickly after which worm control using medicated grit would no longer be effective.

The objective is to maintain a parasite population at a level below which the grouse will not suffer but high enough for there to be high levels of non-resistant worms in the population. On this basis, if autumn worm burdens are very low (possibly less than 200 worms in old and 20 worms in young birds at the end of September) the decision may be taken not to treat. This will reduce the likelihood of the development of resistant worms on the moor.

It is suggested that **low strength or standard** grit acts by blocking new infections occurring. The amount of drug available to the birds from low strength grit is unlikely to be sufficient to kill adult worms or to stop them from laying eggs. It is therefore most likely that it has its greatest effect from mid-February onwards preventing new infections occurring in adult birds and preventing infection in the young birds. Once the product is withdrawn then new infections will be possible. With use in subsequent seasons low levels of worms should be achieved.

The **high strength** grit works by killing adult worms. Hence this is the product to use if there are high worm counts in autumn that are clinically significant. High strength grit should be withdrawn by mid-March to allow modest numbers of parasites that have never experienced the drug to survive from over wintered larvae and so reduce the likelihood of resistance developing.

It is important that drugs are used in conformation to recommended treatment regimes.

Failure to withdraw **all low strength** grit by mid-July is both ill-advised as it will hasten the onset of a population of resistant worms on the moor but it would also be illegal if treated birds were to be presented to guns within 28 days of the grit being removed. This is to avoid the drug entering the human food chain. The Food Standard's Agency randomly tests game birds each year for residues and the presence of illegal residues would have economic implications far beyond any moor in which such birds were to be found and would destroy the image of grouse being a healthy meat to eat. **The removal of all medicated grit at least 28 days before the shooting season is therefore essential.**

Failure to withdraw **all high strength** grit by mid-March may seem beneficial as it will keep worm levels very low. This is a fallacy and will encourage early onset of drug resistance. As with the low strength grit there is a legal requirement for the removal of all medicated grit at least 28 days before the shooting season **but if used correctly high strength grit will have been removed well in advance of shooting.**

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Grouse monitoring at Sandhill Veterinary Services

To determine the health status of birds on a moor, we are able to provide a range of services that build up a picture of diseases present and their significance.

Trichostrongylus worm counts. Counts may suggest whether or not treatment is required and may also suggest the most effective type of grit. Repeated counts allows trends in worm numbers to be seen.

Trichostrongylus worm egg counts. Egg counts on faeces collected from the moor have the advantage that dead birds are not required for testing. The egg counts are cheaper to do than total worm counts and sequential counts done over the years will give useful information as to the worm status of the birds.

Coccidial oocyst counts. If coccidiosis is suspected of adversely affecting the development of young birds, coccidial oocyst counts on faeces may be useful in determining the level of disease in birds on the moor.

Post-mortem examinations. General post mortem examinations, especially of birds in poor bodily condition or of young birds which are failing to thrive can give valuable information about the disease status of a moor. Knowledge of epidemiology may suggest possible ways of reducing or controlling a condition.

Louping-ill testing. We are able to collect blood from fresh cadavers and submit it to the Moredun Institute to determine Louping-ill titres.

Either singularly or if there is a problem on the moor used together, the information gained from such monitoring helps to build up a picture of the disease status of the birds and can suggest ways in which problems may be addressed.

PRICE LIST 2012

Services:

Post-mortem	28.00
Bacterial culture	6.50
Coccidial oocyst / worm egg count	6.50
Trichostrongylus worm count (Grouse)	12.00
Medicated foodstuff prescription	8.50

All prices quoted are exclusive of VAT

All prices quoted are subject to alteration without notice.

