

A Guide to Parasite Control at Housing



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Contributing to a profitable and sustainable farming and agri-food sector through improved animal health

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Introduction

The following common parasite groups will be considered:

- Stomach and intestinal worms; collectively called gut worms.
- Lungworms.
- Liver flukes.
- External parasites (lice and mange).

The issue of rumen fluke is dealt with separately in the AHI leaflet 'Rumen Fluke: The Facts [click here](#)'.

The economic losses associated with stomach worms and liver fluke in cattle are universally accepted. The image of cattle clinically affected with liver fluke and worms is embedded in the mindset of beef and dairy farmers and their veterinary practitioners. However, the scouring or coughing animal with severe weight loss and maybe 'bottle jaw' is only the 'tip of the iceberg'. The sub-clinical component of parasitic infection, with its potential impact on growth rate, milk yield and fertility lies 'beneath the surface.'

Poor productivity in sub-clinical worm and liver fluke infections is mainly due to reduced appetite and feed intake. Once these effects are appreciated, it is easy to see why cattle cannot perform to their full potential when they are infested with parasites. In addition, there are other reasons for productivity losses caused by worms, including poor digestion and absorption of nutrients and these can further complicate the effects of reduced feed intake.

Losses due to parasites are often assumed rather than measured. Nevertheless, anecdotal evidence from farmers, advisors, veterinary practitioners, regional veterinary laboratories and veterinary researchers points to apparently increasing problems with parasites.

Appropriate use of anthelmintics is a key consideration in sustainable control of parasites. Therefore, these drugs must be used carefully in order to benefit both animals and farmers. Because of differences in susceptibility resulting from acquired immunity to worms, it is best to consider cattle in three different age categories: adults, second grazing season (SGS) and first grazing season (FGS).

Why should I control parasites at housing?

Housing marks an abrupt transition from pasture-based husbandry to the management of cattle indoors and this has implications for parasites and their control. Cattle pick up infections with worms and liver fluke almost exclusively while grazing at pasture, because the infective stages are located on the pastures and survive poorly on conserved forage. Thus when cattle are housed, they no longer pick up new worm and liver fluke infections until they are turned out onto grass the following spring. This means that effective anthelmintic (wormer) treatments at or during housing should keep the animals virtually free of worms and liver fluke until they return to pasture the next year.

Parasites should be given priority on a minimum of three occasions per year, two of which coincide with well-defined management operations.

Sustainable control of parasites at housing

Housing of cattle is a well-defined management operation on the majority of livestock farms in Ireland and it provides a good monitoring opportunity to assess the parasite status of your farm. Doing this gives you and your veterinary practitioner the opportunity to consider and implement the most appropriate parasite control measures.

Stock performance

How well is my herd performing?

Before considering the parasites themselves, it is valuable to consider the performance of the stock over the previous grazing season and how it compared with expectations and/or targets, focusing on indicators that could have been affected by parasites (Table 1).

ANIMAL TYPE	PERFORMANCE INDICATORS
Calves – first grazing season	Growth rate
Breeding heifers – second grazing season	Age/weight at first insemination/mating Pregnancy rate
Fattening beef cattle- second grazing season	Growth rate
Adult dairy cows	Milk yield Milk composition Body condition score Fertility
Adult beef cows	Body condition score

Table 1. Measurable on-farm performance indicators that can be affected by parasites.

If there has been no clinical parasitic disease during the year and if the stock are all performing to expectations/targets; then it may well be that your parasite control has been successful. However, even if this is the case; it is time well spent to review any parasite control programme. This review of the grazing season is the first part in planning the parasite control programme for next year's grazing season.



Treatment

The target parasites for cattle of all ages at housing are stomach worms (*Ostertagia ostertagi*), lungworms (*Dictyocaulus viviparus*), liver fluke (*Fasciola hepatica*), chewing lice (*Bovicola bovis*), sucking lice (*Linognathus vituli*) and mange mites (*Sarcoptes scabiei*, *Psoroptes ovis*, *Chorioptes bovis*). The number of parasites carried by cattle at housing can vary according to several factors, including their age, health status, previous grazing management and level of previous anthelmintic treatment.

PARASITE	ANIMAL AGE	SIGNIFICANCE	TREATMENTS (Check label for efficacy against various stages of parasites)
Stomach and other gut worms	All ages (immunity increases with each grazing season)	Suboptimal performance	Benzimidazoles* Endectocides* (Levamisole* only effective against adult worms)
Inhibited larvae of stomach worms	All ages	Ostertagiosis Type II disease	Some Benzimidazoles* (check label) Endectocides* N.B. Levamisole not effective
Lungworm	All ages (commonly first grazing season)	- Hoarse - Increased risk of viral and bacterial pneumonia	Benzimidazoles* Endectocides* Levamisole*
Liver fluke	All ages	- Poor growth - Low milk yield - Poor fertility	Albendazole Clorsulon* Closantel* Nitroxylin Oxyclozanide* Rafoxanide Triclabendazole*
Chewing Lice	All ages	- Scratching - Poor coats	Endectocides* (externally applied) Pyrethroids Amitraz
Sucking lice	Mainly young first grazing season	- Scratching - Dermatitis - Poor growth - Low milk yield - Anaemia	Endectocides* Pyrethroids
Mange mites	All ages	- Scratching - Dermatitis - Poor growth - Low milk yield	Endectocides* Pyrethroids Amitraz

*Available in combination products

**Endectocides also known as Macrocylic lactones contain products such as ivermectin, doramectin, abamectin, moxidectin, eprinomectin

Table 2. The main target parasites, their possible impact and treatment options.

All of the parasites listed in Table 2 are common in Ireland and, with the possible exception of liver fluke, the chances are that many are present on your farm. Several of the products are available as combinations, usually a flukicide and a general wormer or an endectocide. Thus, with some externally applied and injectable combination products, it is possible to effectively treat almost all the different types and stages of the target parasites. Whatever is used, it is time well spent for farmers and their vets to discuss the treatment options and whether broad or narrow treatments are required.

These parasites are difficult, if not impossible, to eliminate at the farm level (with the possible exception of mange). All are in some part responsible for both clinical disease and sub-clinical production losses, thus the rationale for their control is strong and housing provides a unique opportunity to simply and simultaneously treat a broad spectrum of potentially pathogenic parasite species.

Housing provides a unique opportunity to simply and simultaneously treat a broad spectrum of parasites.



Herd parasite status

How do I investigate my herd parasite status?

If parasites are suspected of having adverse effects on performance, diagnostic sampling is recommended throughout the grazing season (Table 3). Contact your veterinary practitioner for advice to plan your parasite investigation. It is recommended that approximately eight weeks after fluke treatment at housing dung samples are taken in order to review efficacy.

STOCK CLASS	SAMPLE TYPE	NUMBER OF SAMPLES	TESTS
Calves - first grazing season	Faeces	10-15*	Faecal examination for presence and density of worm and liver fluke eggs, also lungworm larvae
	Blood	10-15	ELISA • Stomach worm
Calves - second grazing season	Faeces	10-15*	Faecal examination for presence and density of worm and liver fluke eggs, also lungworm larvae
	Blood	10-15	ELISA • Stomach worm
Adult dairy cows	Bulk milk	1	ELISA • Stomach worm • Liver fluke • Lungworm
	Faeces	10-15*	Faecal examination for presence and density of worm and liver fluke eggs, also lungworm larvae
Adult beef cows - abattoir results need to be included for liver fluke	Faeces	10-15*	Faecal examination for presence and density of worm and liver fluke eggs, also lungworm larvae
All cattle	Livers in abattoir of all animals should be checked for the presence of adult liver fluke, enlarged gall bladder, fibrosis and calcified bile ducts		

*Faecal samples from individual animals can be pooled, in the laboratory, thereby reducing costs (though losing some valuable information on individual values and variability).

Table 3. Technical information for diagnostic sampling.

The results from this type of monitoring will help you plan parasite control for the next grazing season as well as deciding on optimal treatment for parasites at housing. The inhibited larvae of *O. ostertagi* can be specifically targeted at housing in order to eliminate the risk of potentially serious disease towards the end of the housing period by ensuring that an anthelmintic effective against inhibited larvae is used. Factory reports on liver fluke and liver damage are useful to indicate the presence or absence of liver fluke in the remainder of the herd. Discuss sampling and the subsequent test results with your own veterinary practitioner.

Some helpful reminders

- Combination products should be used appropriately for the target parasite species.
- Pay particular attention to dose-to-weight calculations to ensure animals receive a full dose.
- Read the label and instructions for the chosen products carefully to ensure that you know exactly what they can and cannot do and set your targets and expectations accordingly.
- For worms, it is best to use products that are active against both adult and inhibited larvae of the stomach worm, *O. ostertagi*.
- For lice control, it is generally best to use an externally applied product and if high levels of control are required, treat all the animals in a group and make sure they are not in contact with any untreated animals throughout the winter.
- The same is broadly true for mange control, but injectable products can also be useful for sarcoptic, chorioptic and psoroptic mange.
- If no treatments for ectoparasites (lice, mange) are given at housing, then stock should be checked a couple of months after housing, as it is generally around this time (January/February) that any problems with lice or mange appear.
- Whilst acceptable levels of liver fluke control can be achieved with a housing treatment, if infection levels are high and, particularly if animals have picked up a lot of new infections just before they are housed, then a more stringent approach may be required:
 - If the flukicide used at housing is only effective in treating older immature liver flukes and/or adult liver flukes, then, it is worth checking faecal samples approximately 6-8 weeks after housing to see if any liver fluke eggs are present and to re-treat as appropriate.
 - An alternative is to delay administration of such products to 6-8 weeks after housing, by which time most of the liver fluke present in the animal will be adult and susceptible to treatment, (or animals can be treated at housing and again later without any diagnostics).
 - If products containing triclabendazole are used at housing, these should kill early immature and adult liver flukes and therefore a follow-up treatment should not be necessary. However, resistance to triclabendazole appears to be quite widespread in Ireland.
 - It is recommended to carry out dung samples approximately eight weeks after treating at housing to evaluate the efficacy of treatment for fluke.
 - Finally, if dairy cows are to be treated at drying-off or during the dry period, check the latest product literature as several have changed recently and you should ensure that you comply with any label changes to avoid residues in milk in the next lactation.

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