

# Internal Parasites of Lambs

## Technical Note

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In spring and early summer, the main internal parasites of concern are nematodes (roundworms) and coccidia.

The information presented in Table 1 outlines the main internal parasites with identifying symptoms and prevention/control measures recommended.

Table 1. Internal Parasites of Mid Season Lamb

Parasite	<i>Nematodirus</i>	Coccidia	<i>Teladorsagia (Ostertagia) / Trichostrongylus</i> species
Time of Problem	<ul style="list-style-type: none"> <li>Lambs 5- 10 weeks</li> <li>April/May</li> <li>Triggered by cold weather followed by warm spell</li> </ul>	<ul style="list-style-type: none"> <li>Lambs 3- 8 weeks</li> <li>Older lambs if stressed</li> <li>Young lambs grazed after older lambs</li> <li>Lambs coming together e.g. for creep feeding</li> </ul>	<ul style="list-style-type: none"> <li>Lambs &gt; 10 weeks old</li> <li>June onwards (<i>Teladorsagia</i>)</li> <li>Late summer / autumn (<i>Trichostrongylus</i>)</li> </ul>
Symptom	<ul style="list-style-type: none"> <li>Diarrhoea</li> <li>Wasting</li> <li>Dehydration</li> <li>Mortality</li> <li>Lambs congregating around drinkers while ewes continue to graze</li> </ul>	<ul style="list-style-type: none"> <li>Acute Diarrhoea</li> <li>Blood in scour (maybe)</li> <li>Poor thrift</li> <li>Loss of appetite</li> <li>Scouring still apparent after dosing for <i>Nematodirus</i></li> </ul>	<ul style="list-style-type: none"> <li>Diarrhoea</li> <li>Weight loss</li> <li>Dehydration</li> </ul>
Prevention /Control	<ul style="list-style-type: none"> <li>Clean Pasture not grazed by sheep/calves the previous year</li> <li>Dose with white wormer or Levamisole at 5 weeks(+) i.e. late April/May</li> </ul>	<ul style="list-style-type: none"> <li>Hygiene</li> <li>Avoid overcrowding</li> <li>Adequate colostrum of newborn lamb</li> <li>Move feeders or drinkers regularly</li> <li>Keep feeders drinkers at a raised level to avoid faecal contamination</li> <li>Feed additive e.g. Deccox, drench e.g. Vecoxan, Baycox or sulphonamide powders / injections</li> <li>If possible move treated lambs to 'clean' area</li> </ul>	<ul style="list-style-type: none"> <li>Clean pasture (hay / silage aftergrass)</li> <li>Combination of pasture management and planned dosing programme</li> <li>Dosing based on faecal egg counts</li> <li>Test for anthelmintic resistance</li> </ul>

## **1. Nematodirus:**

*Nematodirus Battus* can cause a problem for lambs from four to twelve weeks old. The main risk factors of concern are as follows:

- Lambs grazing pasture that was grazed by lambs or young calves the previous spring.
- Lambs old enough to be eating a significant amount of grass therefore increasing the chance of ingesting large numbers of worm larvae (therefore twin lambs will be under threat slightly younger).
- A cold period (typical of March or April) followed by warm weather. This triggers the synchronic hatching of eggs which are on the pasture since the previous spring.

For these reasons, lambs over five weeks old during April and May are most at risk.

### **Symptoms:**

Lambs may be seen with the head down, drooped ears possibly with the belly tucked up due to pain. Lambs will typically develop a scour and if allowed to develop, the infection can lead to profuse diarrhoea and wasting. However, as the lambs may stop eating the scour may only consist of slimy mucus. Due to the dehydration, lambs will be thirsty and may congregate around a watering trough. Mortality can be high in untreated lambs.

### **Prevention and Control:**

The infection is best prevented by keeping the current year's lambs off grassland that was grazed by lambs the previous year. This could be possibly on ground that was closed from early spring to after first cut silage or grazed with cattle only not including calves in the previous year. In the absence of clean pasture, a dose is desirable. There is no evidence of anthelmintic resistance in the case of *Nematodirus* to any of the drug classes on the market. Therefore, a white drench or levamisole is the dose of choice.

## **2. Coccidiosis:**

Coccidiosis is caused by a small parasite called *Eimeria* which is not visible to the naked eye. While there are many different species of coccidia, only two are considered pathogenic, namely *Eimeria Ovinoidalis* and *Eimeria Crandalis*. It is not actually a roundworm. All sheep carry a small number of coccidia. Lambs become infected orally from faecal contamination of bedding, water troughs or feed troughs. The principal source of infection for young lambs is lambs born earlier in the season that contaminate the environment (bedding/ drinkers/ feeders, areas where they congregate) with a large number of oocysts (coccidial eggs). Very young lambs, younger than two weeks old, are not affected due to the immune protection received via the colostrum. The greatest risk period for lambs is between 3 and 8 weeks of age, with clinical symptoms most apparent from 6 -8 weeks of age. Once exposed lambs develop quite a solid resistance to coccidia and lambs over ten weeks tend to be resistant.

### **Symptoms:**

A severe scour which may contain blood or is black in colour is common. Affected lambs will strain and if untreated mortality can be high. Lambs that are badly affected but subsequently survive will have irreversible damage done to their digestive tract and will be 'poor doers'. Stress, poor nutrition and simultaneous infection with *Nematodirus* can increase the severity of infection.

### **Prevention:**

Coccidiosis is best prevented by keeping the level of challenge low. The parasite needs water to hatch in to the infected stages. Therefore avoiding overcrowding (indoors) and maintaining clean and dry bedding is useful in reducing exposure. Avoid faecal contamination of feed area and drinking troughs and keep these at a raised level. These should be moved frequently to a clean area during the risk period of 3-10 weeks. Young lambs should be kept in groups within a two week age range. They should not be mixed with older lambs until they are at least 8 weeks old and not graze pasture where older lambs have been.

**Control:**

Treatment should be undertaken after consultation with your veterinary surgeon. In the case of a history of coccidiosis on your farm, give a preventative treatment. Incorporating a feed additive for lambs being creep fed concentrates is an option. The additive (Deccox -Forum Products Ltd) is available as a prescription only medicine and can only be incorporated by feed millers that have a special licence to incorporate medicines into concentrate feeds (usually millers that manufacturer pig and poultry feed have this licence).

There are also a number of 'natural' feed additives that claim to aid in reducing coccidia levels in sheep being offered these supplements. As these are not licensed Medicines there is no requirement for extensive testing to prove efficacy.

Alternatively, oral drenches are available that have residual activity varying from two to eight weeks.

Vecoxan - Janssen Animal Health – 2 week residual activity – Withdrawal Period zero days

Baycox Sheep – Bayer – 2 week residual activity – Withdrawal Period 42 days

Lambs badly affected with Coccidiosis should receive additional supportive antimicrobial therapy, (sulphonamide powders or injections).

If lambs start to scour or continue to scour within a few weeks after dosing for *Nematodirus*, you are likely to have a coccidiosis problem.

### **3. Roundworms:**

The second group of nematodes to affect lambs are *Teladorsagia* (formerly *Ostertagia*) and *Trichostrongylus* species. They become an issue when lambs are ten weeks or over (end May/early June for mid season lamb). The challenge arises from two sources principally: over-wintered larvae on the pasture and the larvae that develop from the huge numbers of eggs that ewes have passed in their faeces around lambing in the spring. These eggs hatch and develop to infective larvae. Once the infected larvae are ingested by the susceptible grazing lambs, the larvae develop into adult worms. These lay eggs which are passed out onto the pasture and the cycle begins again.

#### **Symptoms:**

Scouring of lambs from June onwards is common. Lambs will lose weight largely due to a reduction in food intake. Furthermore, lambs will be dirty around the tail area. This will attract flies and lead to blow fly larvae (maggots), costing time and money to treat as well as damaging the carcass of the growing lamb.

#### **Prevention and Control:**

The biggest problem facing roundworm control has been the development of anthelmintic resistance. In a study looking at over 60 lowland Irish flocks over 95% of farms show evidence of anthelmintic resistance to Benzimidazole (white drench) and 48% show resistance to Levamisole (yellow drench) (Teagasc, Athenry). Resistance to the third family of anthelmintics, Macrocyclic Lactones (Avermectins) has also been identified and the extent to which this is an issue on Irish sheep farms is currently being investigated. This means that there are now in all probability Irish sheep farms that have triple drench resistance and this is a major cause for concern.

#### **New generation anthelmintics:**

From the early 1980's until 2010 there were no new anthelmintics developed to control nematodes in sheep. Since then, two new 'families' of anthelmintics have been developed and these are available as prescription only medicines at a substantially increased cost (~300-400%).

Resistance means that the worms are resistant to the dose and are not killed by it. The only sure way of knowing if you have a problem is to have faecal egg counts done pre and post dosing. By this you can check the efficacy of the treatment used. This test could be arranged through your veterinary surgeon.

Therefore prevention and control of these worms involves a strict management approach. The traditional approach of dosing at 5, 10 and 14 weeks can no longer be recommended as a blanket approach. Dosing should only take place when justified. Research carried out at Teagasc, Athenry (Good et al 2001) show that while dosing at 10 weeks reduced worm egg count in lambs, it did not affect growth rate.

The primary aim should be to have clean or safe pastures as much as possible (i.e. pastures with low parasite challenge).

In the past, a dose at 14 weeks was often recommended combined with a move to 'clean' pasture' e.g. silage aftermath, grass not grazed by sheep in the previous autumn and has carried cattle in the previous spring. However, it is now considered that dosing followed by a direct move to 'clean' pasture may be highly selective for resistance in that any worms that survive treatment (hence resistant) will contribute significantly to the population that subsequently arises on the 'clean' pasture. Various alternatives to this direct 'dose and move' approach which will reduce the selection for resistance have been suggested. These alternatives include;

1. Delay the move until 4-7 days after dosing.
2. Move to clean pasture for a few days before dosing.
3. Some of the lambs (10%) may not be dosed at all.