



Reduce Dependence - Strategies for Lambs

Lambs are often treated frequently to eliminate the negative effects of gastrointestinal parasitism and ensure high growth rates. A number of strategies can be used to reduce this dependence on anthelmintics in worm control strategies.

Faecal Egg Count (FEC) monitoring

FECs can be used to help predict the need for treatment against *T. circumcincta* and *Trichostrongylus* spp. It is particularly important to avoid frequent treatment of lambs on the same fields as those where ewes were suppressively treated during lactation using a persistent anthelmintic. This is because the number of unselected larvae on pasture will be low, so any selection pressure exerted is relatively high, speeding up the development of anthelmintic resistance (AR) - [see Chapter 1. What is anthelmintic resistance \(AR\)? section 1.3 Selection Mechanisms.](#)

Nematodirus

Research carefully the need for preventive anthelmintic treatment for nematodirosis. The SCOPS Nematodirus forecast, with daily updates runs on the website from early spring through to summer to aid treatment decisions. Where risk assessment suggests treatment is required consider using a 1-BZ anthelmintic to spare the other groups, followed by a drench test 9-10 days post-treatment to check it has been fully effective. Resistance to the 1-BZ group is still uncommon in Nematodirus, but low frequencies of alleles for resistance have been found ([Melville et al., 2020](#)) to be widespread, so it is important for individual flocks to check.

Management and Grazing Strategies

Identifying management strategies which avoid high risk pastures in spring and/or the build-up of infectivity from mid-season are key to reducing dependence on anthelmintics for lambs. The typical pattern of infection on pastures grazed by sheep can be found in the Parasites section.

Pasture risk assessment ([Melville et al., 2020](#)) - The table below summarises the risk levels for pastures with various grazing histories:

	HIGH	MEDIUM	LOW
SPRING	<p>Grazed by lambs in the previous year</p> <p>Grazed by goats in the previous year</p> <p>Grazed by store or ewe lambs in the previous autumn</p> <p>High Nematodirus risk if grazed by lambs or calves in the previous spring</p>	<p>Grazed by only rams or dry ewes in previous year</p> <p>Grazed by ewes and lambs in previous spring but ungrazed since then (<i>NB Nematodirus still high risk</i>)</p>	<p>New ley / seeds</p> <p>Forage crops</p> <p>Grazed by cattle in the previous year</p> <p>Cut for hay or silage in the previous year</p> <p>(ungrazed by sheep in the previous year)</p>
SUMMER	<p>Grazed by ewes and lambs in the spring</p>	<p>Grazed by only rams or dry ewes this spring</p> <p>Grazed by cattle or cut for hay or silage this spring</p>	<p>Grazed by cattle only this year</p> <p>Only cut for hay or silage or forage or arable crops grown this year</p>



<p>LATE SEASON and AUTUMN</p>	<p>Grazed by ewes and lambs all season</p>	<p>Grazed by cattle only since mid-summer</p> <p>Grazed by healthy and mature dry ewes since mid-summer</p>	<p>As for summer above</p>
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Other management options to control worms

Weaning

Weaning normally takes place at around 12-14 weeks of age, but often it is much later leaving lambs vulnerable to the rise in infection levels on pastures that have been grazed since turnout. Weaning is often overlooked as a very useful tool in worm control, with the timing varied to make optimum use of less contaminated areas when they become available. Where very low risk grazing is available, weaning can be brought forward to 10 weeks of age.

Ewes can be left on the heavily contaminated grazing* (although regular FEC monitoring is recommended – see below), while lambs require a much smaller area, for example an aftermath or pasture grazed by cattle since turnout. Bioactive crops, or catch crops providing a high plane of nutrition, can also provide low risk (low contamination) grazing after weaning, with the added benefit of nutritional support and potential anthelmintic properties.

Anthelmintic treatment is often given routinely at weaning, but it is only necessary if indicated by FECs, required for *Nematodirus* control, or indicated by poor growth.

**NB if lambs are to be treated at weaning based on a high FEC count, then they should be left on the original contaminated pasture for 4-5 days after weaning to reduce the selection pressure for AR.*

Grouping lambs by age and/or performance criteria

Keeping lambs in tight age groups at turnout and drafting them off into groups based on size later in the grazing season has multiple benefits. For example, to target the need for treatment based on FECs and other management decisions (for example weaning and withdrawal times post treatment when drawing for market). It can also be especially useful for *Nematodirus* control as lambs are most susceptible to nematodiosis between 6-12 weeks of age (younger if the ewe is not milking well). If *Nematodirus*-safe grazing is limited, the most vulnerable age groups of lambs can make use of this grazing as a priority. If avoiding infection by moving lambs to *Nematodirus*-safe grazing during the risk period is not possible, multiple anthelmintic treatments may be required to prevent disease. Grouping lambs into tight age groups can help target treatments at the vulnerable age groups only, reducing the number of treatments required.

Grazing by mature ewes

Mature ewes, in good body condition, can be used post weaning to reduce the level of contamination on high risk pastures that have carried ewes and lambs since the spring. Their use to 'hoover-up' infective larvae off pasture relies on the acquired immunity they have developed to nematode infection. This reduces the number of larvae that they ingest developing successfully to adult nematodes in the gut. As they are grazing, they ingest any infective larvae present on the herbage and are effectively killing them off, thus reducing the overall level of contamination on that pasture for late in the season and/or next spring. Ewes usually have very low worm burdens and FECs, so contribute little to additional pasture contamination, but FECs should be monitored.



It is important to note:

- Grazing by ewes does not affect the *Nematodirus* risk the following spring, as the majority of *Nematodirus* infective larvae remain, fully developed, in their eggs in the soil until spring temperatures rise sufficiently to allow them to hatch.
- A large proportion of the infective larvae population on pasture at any time are found in the soil and not on the herbage. Grazing by ewes will only remove the proportion that are found on herbage, and although grazing by ewes lowers pasture contamination levels and the risk posed to lambs following-on from the ewes, the pasture cannot be completely cleaned using this method.
- Although ewes are relatively resistant to infection, a small proportion of larvae ingested while grazing will still survive to adult worms and worm burdens can accumulate over time. Therefore, ewes should be included in FEC monitoring schedules, especially when they have been grazed on pasture known to be heavily contaminated.

Mixed grazing and reduced stocking densities

The parasite species infecting sheep are largely different from those infecting cattle, and mixed grazing carries little risk of cross-infection on most farms. Levels of pasture contamination can also be reduced by mixed grazing of cattle (not goats) and sheep together. This effectively reduces the stocking density of the sheep, so that nematode eggs excreted are deposited over a wider area. The resulting infective larvae present on herbage are at a much lower density and therefore fewer are likely to be ingested by lambs. In addition, similar to grazing by mature ewes, cattle 'hoover-up' a proportion of the sheep nematode larvae (and vice versa) as they graze, further reducing pasture contamination.

However, mixed grazing can make pasture utilisation more difficult because sheep and cattle require different optimum sward heights which may introduce a nutritional stress. A system of rotation between the cattle and sheep during the season would address this, though this also has practical issues and much of the benefit of reduced effective stocking density of the sheep would be lost.

Rotational / Paddock grazing systems

In recent years, many more progressive sheep farmers have set up systems of rotational /paddock grazing. This improves the utilisation of grazing and offers the potential for higher growth rates when managed correctly. [Click here](#) for more information on grazing strategies. In terms of worm control, there may be some benefits due to the higher levels of nutrition which will improve resilience. However, it is very important that FECs are used to monitor the levels of contamination going on to the grazing areas/paddocks so that, in conjunction with weather conditions, the pattern can be used to predict when they will become highly infective. Steps can then be taken to minimising the risk that lambs may be rotated into a paddock that is at peak infection. For example, an area is taken out for conservation or grazed by older dry sheep or cattle.