

Parasite Control in Sheep – Now is the Time !



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Throughout the world, when sheep are kept on pasture they typically become infected with gastrointestinal (GI) parasites. Furthermore, depending on management practices and climate conditions, these parasites can cause significant economic losses in a flock. While at least 10 different GI parasites infect sheep in North America, the three most important are *Haemonchus* (barber's pole worm), *Teladorsagia* (brown stomach worm) and *Trichostrongylus* (stomach hairworm). All three parasites live as adults in the abomasum of sheep and produce eggs that pass into the environment in feces. Thereafter, over a period that typically lasts 2-3 weeks, the eggs hatch, the parasites mature to the infective stage, then migrate off feces in to pasture to maximize the chance of ingestion by sheep. The life cycles of all three parasites therefore involve stages that occur in sheep and stages that occur in the environment. In fact, it is estimated that 70-80% of all the GI parasites on a sheep farm are typically located in the environment and not in sheep.

Since the early 1980s, almost no work has been carried out on the importance of GI parasites in Canadian sheep. As a result, from 2006 to 2009, researchers conducted work on 32 sheep farms in Ontario and Quebec, with minimal use of dewormers, to determine the extent to which parasite egg numbers change throughout the year in the feces of lambs and ewes. They also determined the extent to which parasite numbers fluctuate in pasture. Most farms on the study lambd between February and May. Amongst the farms there was great variation in the parasite burdens in lambs, ewes and on pasture. Thus, despite minimal use of dewormers, parasites were not a problem on all farms. However, there were some

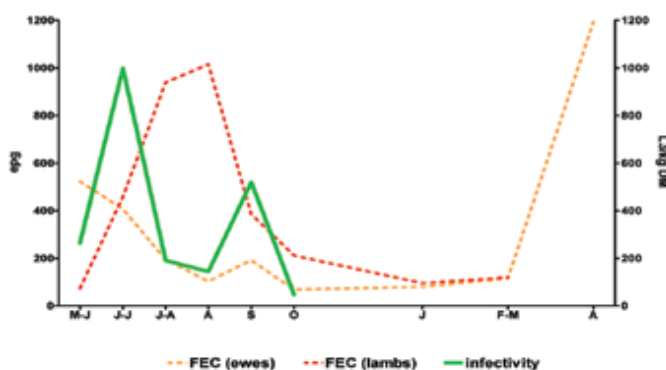
very important observations of parasite loads on some of those farms. While overall in ewes, parasite egg numbers in feces remained low for most of the year, they were often very high in May-June, usually coinciding with the period that ewes were nursing lambs (see figure 1). Thus, ewes were typically a significant cause of pasture contamination with parasites at the beginning of the grazing season. By contrast, parasite egg numbers in the feces of lambs were typically at their highest in July-August (see figure 1), and disease in that age group is most likely to occur at this time of the year. Finally, parasite burdens on pasture were typically at their highest one month after peak egg output in the feces of ewes and lambs. However, when the climate was hot and dry, pasture burdens declined significantly after only a few weeks (see figure 1). Additional work indicated that Ontario sheep are typically infected simultaneously with *Haemonchus*, *Teladorsagia* and *Trichostrongylus*.

In combination with information on sheep parasites from elsewhere in the world, these data have important implications for integrated sustainable approaches for control of GI parasites. Most importantly, parasite numbers should be reduced to levels that have minimal impact on production and which minimize the risk of development of resistance to dewormers. With this in mind, the following are strategies that should be used collectively to minimize parasite burdens on sheep farms:

For control of gastrointestinal parasites in the spring:

- Ensure that ewe nutrition is optimal throughout the periparturient period, particularly adequate levels of protein (by-pass or rumen undegradable protein).
- Do not graze late gestation or early lactation ewes on pasture when egg output tends to be the highest.
- Ideally, weaned lambs should be grazed on low-risk pastures, e.g. newly seeded pasture or hay fields or fields that have been previously grazed by cattle or horses (not goats or alpacas). Lambs should not be grazed on pasture on which parasite problems occurred the previous grazing season.
- Lambs should be weaned early (i.e. by 60 days of age) and thereafter, if possible, not grazed with ewes so that exposure can be better controlled.
- Weaned lambs should be rotated ahead of ewes – after weaning, lambs should have first access to safe pasture.
- Targeted treatments should be used – treat only those animals that need it, when they need it. Thus, all sheep should regularly be monitored for evidence of clinical disease. In addition, fecal egg counts should be monitored, and animals treated only if necessary, as follows:

Figure 1: Average fecal egg counts (FEC) in ewes and lambs, and pasture parasite burdens (infectivity), in 32 sheep flocks in Ontario and Quebec (May 2006-April 2007)



epg = parasite eggs per gram of feces; I3/kgDM = number of infective parasites per kilogram of pasture dry matter; M-J = May-June; J-J = June-July; J-A = July-August; A = August; S = September; O = October; J = January; F-M = February-March; A = April

- ❖ Ewes in late pregnancy or around lambing – to detect the periparturient egg rise.
- ❖ Lambs in early July – if treatment is not required, they should be resampled at least every 4 weeks for the rest of the summer. If lambs appear parasitized after treatment, they should be resampled at 14 days following treatment to determine if treatment (drench) failure occurred.
- ❖ When carrying out fecal monitoring, recognize that when animals have fecal egg counts less than 500 eggs per gram of feces, treatment is not required.
- ❖ If your farm has had parasite problems in previous years, the frequency of monitoring lambs may need to be shortened – particularly after mid-July.
- ❖ If the summer is particularly wet and warm, the frequency of monitoring lambs may need to be increased as parasite eggs will develop more quickly to the infective stage under those conditions.



- Rotate the effective dewormer drug class slowly, i.e. not more frequently than annually.
- After deworming, do not move sheep to clean pasture for at least 3-5 days.
- Never graze sheep and goats together.
- Do not spread manure directly on to pasture.
- If pastures are heavily contaminated with parasites at the end of the previous grazing season they should ideally be selected for ploughing, reseeded, hay production or grazing by cattle.
- For purchased animals, treat with an effective dewormer while in quarantine, and after 3-4 days turn out to pasture that is contaminated with parasites.
- Do not treat pre-breeding.

For control of gastrointestinal parasites throughout the grazing season:

- Recognize that parasites can remain on pasture during the grazing season for up to 3 months and use parasite evasive grazing strategies, e.g. rotate pastures, rotate pastures with cattle or horses.
- Only use dewormers that are known to be effective on any given farm.
- When deworming, ensure that all animals are dosed correctly – no animal should be under dosed. Make sure you estimate the weight of the sheep correctly. Ensure that the drenching gun is dispensing the stated volume and administer it over the back of the tongue. Do not use an injectable dewormer. Do not use pour-on products either as a pour-on or orally.

While it is unlikely that any farm would be able to incorporate all these recommendations in their parasite control program, the greater the number that can be incorporated the greater the sustainability of the control program. Additional information about each of these parasite control strategies, and others, and their suitability for sheep production in Canada, can be found in the “Handbook for the control of internal parasites of sheep” that can be downloaded from: http://www.uoguelph.ca/~pmenzies/PDF/Handbook_Control_Internal_Parasites_Sheep_PMenzies.pdf **OSN**

Reference:

Mederos, A., Fernández, S., VanLeeuwen, J., Peregrine, A.S., Kelton, D., Menzies, P., LeBoeuf, A. and Martin, R. (2010) Prevalence and distribution of gastrointestinal nematodes on 32 organic and conventional commercial sheep farms in Ontario and Quebec, Canada (2006 – 2008). *Veterinary Parasitology* 170, 244-252.

Thank You OSMA

Thank you for supporting the market lamb class at the Royal Winter Fair. We were fortunate to have Reserve Grand Champion and received the banner you donated.

This is a letter of thanks received from the family of Kevin and Jacquie Bishop. **OSN**



Kevin & Jacquie Bishop and Family. Judge Mark Campbell, Jason Emke (far right)