

Battling the Wolf Within – Dealing with Internal Parasites in Sheep

It seems like every year or so I write an article about parasite management. Why? Because in my opinion it is one of the most critical flock management skills needed by a shepherd.

When you talk to shepherds about what are the main hazards to raising sheep, the two hazards most frequently mentioned are predators and parasites. There is a huge emphasis on predator control with shepherds using strategies like bringing the flock in at night to protect them from predators. We used to do this as well but by doing so we were subjecting our sheep to highly contaminated enclosures with the result being heavy parasite loads.

The question became which is worse -the wolf in the field or parasites? For this article I call parasites the wolf within. We started doing the dollars and cents and it is our position that the wolf within is more costly than the wolf out on pasture.

So far, I have not been able to find a North American study on the economic impact of internal parasites in sheep so I will quote a 2006 Australian study. Internal parasites cost the sheep industry in Australia an estimated \$336 million (AU) with the vast majority of that being economic losses rather than increased expenses. Internal parasites were by far the single greatest measurable cost due to sheep disease in that country, far outstripping the costs of other diseases. ¹

The economic burden of increased mortality caused by lethal parasite loads is obvious to most producers. However, many may not consider the increased feed costs to reach market weight due to sub-lethal parasite burdens that reduce the average daily gain. The following table is used to illustrate those costs (Fig. 1)

Fig. 1 Feed costs per lamb to reach market weight based on average daily gain. ²

ADG ³ (lbs/day)	Days to Market	Feed costs @ \$0.50/day
0.1	1000	\$500
0.2	500	\$250
0.3	333	\$167
0.4	250	\$125
0.5	200	\$100
0.6	167	\$83

¹ Sackett, D and P. Holmes 2006 Assessing the economic cost of endemic disease on the profitability of Australian beef cattle and sheep producers, Meat and Livestock Australia Limited, ISBN 1741910021

² The same table can be used to analyse the benefit of using a production tested ram that will increase the average daily gain in your flock. It becomes very clear that the cost of a good quality ram is small compared to the potential cost savings in feed.

³ Average Daily Gain

0.7	143	\$71
0.8	125	\$63
0.9	111	\$56
1.0	100	\$50

ADG – Average Daily Gain

The assumptions used in this table were an average birth weight of 10 lbs and an average market weight of 110 lbs. The final assumption was a \$0.50 per day feed cost.

In Ontario, Canada a shepherd is reimbursed for the value of the sheep killed by any predator. The same is not true for deaths due to internal parasites and most definitely not true for financial losses due to reduced growth rates and increased feed costs due to sub-lethal parasite loads. In the case of parasites, all economic losses fall squarely on the shoulder of the producer.

The first lesson we learned was to stop being afraid of predators and started to give the parasite problem the respect it deserved. As a result, we stopped bringing our sheep into a “safe” area at night. Now our sheep stay out on pasture all day and night. We do use guardian dogs to protect them as a concession to the predator problem.

The next lesson we learned was reliance on drugs is a flimsy crutch. Like on so many operations, drug resistance became an increasing problem on our farm. The latest study in Ontario has shown that over 90% of the sheep operations tested have parasites that are resistant to at least one of the drugs available⁴. Overreliance on drugs actually increases the problem rather than reduces it. We now use drugs sparingly and strategically.

We also learned that the way we were managing our pastures was not sustainable. Our pastures were overgrazed, contaminated with parasites and not providing the nutrition we required for our flock. We had two options. The first was to go completely to a confinement system, an approach used by many producers, especially in large operations in Quebec. The second was to dramatically change the way we manage our pastures. We chose the later approach.

Like with weed and insect control, we felt the way to go was integrated pest management, in other words a wholistic approach to parasite control. We used a lot of concepts gleaned from grass farmers including reducing paddock size, increasing livestock density and moving the animals frequently. We also expanded our grazing into our hay fields, allowing our lambs to harvest the second cut hay. Portable electric net fencing and solar fencers have allowed us to graze areas where permanent fencing does not exist or is not wanted.

Over the last two years we have further reduced the paddock size and time per paddock in our hay fields to the point our lambs are on ½ acre paddocks and are moved every two

⁴ Falzon, L.C et al, 2013 Anthelmintic resistance in sheep flocks in Ontario, Canada Vet. Parasitol. 193(1-3): 150-162

days. They trample as much forage as they eat but the net result is we are harvesting more hay in the first cut than we have in previous years without livestock grazing the hay fields.

Finally we constantly monitor the parasite load on our flock by doing fecal egg counts. We use that information to decide on management strategies, to select (and cull) breeding stock and decide if and when to use drugs.

While we do not expect to totally eradicate parasites in our flock (and I question whether that is even desirable), we have increasingly been able to co-exist with them so that they do not cause us serious problems. We have had sheep for seven years and while our flock is quite small, we have only lost one animal to parasites early on in our operation.

Our May to June born lambs that were raised predominately on pasture were shipped on the second week of October. Their average live weight was 120 lbs and they all had fleeces that shone in the sun. We feel that we are heading in the right direction and that our dollars spent are making sense instead of cents.

Summary of Parasite Management Tools

- Fecal egg counts for all ewes at lambing, deworm as necessary with appropriate product
- Hold ewes and lambs in confinement during lambing until mid June
- After lambing, ewes and lambs on pasture when forage is about 1 foot high and moved when about 4 inches high, never longer than 5-7 days in one area
- When possible follow sheep with grazing horses
- Randomly collect samples and do fecal egg counts
- If lamb scours etc do fecal egg count before treatment
- When lambs and ewes are in for 50 day weights, monitor eye membranes, body condition score and check for dags on all animals, spot treat if required
- Wean lambs at 60-90 days, lambs on clean pasture and moved more every 2-4 days.
- Weigh lambs at 100 days- body condition score, FAMACHA test, random Fecal egg counts and if required deworm with appropriate product, retest to check efficacy of the product.
- Put lambs on second cut regrowth of hay field at 100 days (a cut of hay was taken off since the last time sheep were on those fields), move every 2-3 days
- Lambs only pass through fields in one cycle, after they are brought in the barn to finish for market. Most reach market weight on pasture.
- Random fecal egg counts on ewes, treat only as necessary. Some ewes are only treated once a year
- Ewes with repeated high fecal egg counts are culled
- Plant willow, birds foot trefoil etc on pasture for higher condensed tannins in forage
- Ensure adequate levels of by pass proteins in diets
- Analyse hay and balance micronutrients with supplements.

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