Ewes bred for resistance to gastrointestinal nematodes have lower parasite egg output during the peri-parturient period.

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Introduction

Ewe's experience a peri-parturient rise (PPR) in faecal egg count (FEC) around the lambing period which contaminates pasture with nematode eggs and subsequently increases the infection pressure of new born lambs. Breeding ewes with a lower PPR has the potential to alleviate the need for anthelmintic use; saving money and slowing resistance build up. The aim of this project was to quantify the value of EBV's on reducing FEC output during PPR in adult ewes and assess if there are any effects on ewe performance.

Materials and Methods

- The study lasted for 8 weeks (Farm 1) and 11 weeks (Farm 2), both farms replicated the same trial with a similar number of ewes (n=47) and (n=53) respectively.
- Exlana sheep were selected to get a similar number of high (positive) and low (negative) FEC EBV'S.
- All ewes gave birth within 10 days and were managed as a cohort during the trial period.
- Faecal samples were taken at four intervals and analysed within five days using the McMaster technique. Trichostrongyloid nematode eggs and coccidial oocysts were counted separately.
- Ewes were weighed in late pregnancy and at the end of the study to monitor condition change. Lambs were weighed at 8 weeks of age to determine the effect on ewe milk yield.

Results

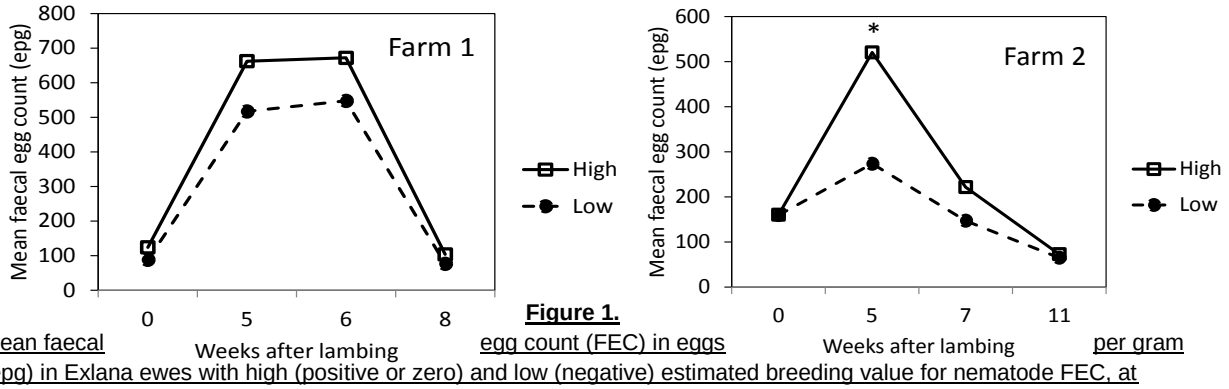

Figure 1. Mean faecal egg count (FEC) in eggs per gram (epg) in Exlana ewes with high (positive or zero) and low (negative) estimated breeding value for nematode FEC, at lambing and three occasions into lactation. (*) Significant difference.

- Both farms FEC peaked at 5-6 weeks after lambing and declined thereafter.
- On farm one the correlation between EBV and average FEC was positive but not significant.
- On farm two the low EBV ewes had a significantly (P=0.041) lower FEC count in week 5 and on average 47% lower than the high EBV ewes.
- Overall, farm two had a 30% reduction in average FEC over the PPR.
- On farm two low EBV's were not correlated with ewe weight loss (p = 0.65).

Conclusion

This study shows that low EBV ewes had a 30-50% lower egg output compared to high EBV ewes during the peri-parturient period (PPR), with no significant effect on ewe performance. Further study is needed to determine the physiological difference in low and high FEC EBV maternal breeding lines which reduces the prevalence of worm burdens. Finally this paper provides evidence that selecting low EBV maternal breeding lines for flock improvement could reduce on farm anthelmintic use and slow resistance build up in the national sheep flock.