Worm egg counts in lambs decreased after administration of anthelmintics to ewes
Michelle Dever, Lewis Kahn, Emma Doyle & Steve Walkden-Brown

BACKGROUND

• One strategy for providing good worm control and to reduce pasture larval contamination is to administer long-acting anthelmintics to lactating ewes

• We have previously observed a decrease in the period of protection against *Haemonchus contortus* in lactating ewes for long-acting anthelmintics on farms with known ML and BZ resistance

• Excretion of long-acting anthelmintics in milk has been reported, which may account for our observations of a reduced period of protection in lactating ewes

• Hypothesis – The elimination of a proportion of the active constituents of anthelmintics in milk will cause a reduction in worm egg counts (WEC) for untreated lambs, suckling ewes treated with anthelmintics

METHODS

• Two groups of lactating Border Leicester X Merino ewes were assigned to one of two treatment groups; treatment with long-acting anthelmintics plus a short-acting primer (SUP, n=30) or nil treatment (NSUP, n=30)

• Suckling lambs (3 months of age) were not treated

• On Day 0, ewes in SUP group were administered:
  - 1 mg/kg moxidectin long-acting injection
  - 4.62 g albendazole (sustained release over 100 days)
  - 2.5 mg/kg monepantel

• All ewes and lambs grazed as one flock and lambs had previously been identified to belonging to one of the two ewe treatment groups

• Faecal samples collected from lambs on Days 0 and 7 and worm egg counts (WEC) and coprocultures conducted

• Calculation of reduction in WEC for lambs from SUP ewe treatment groups:

\[
\text{WEC reduction(%) } = \left[ 1 - \frac{\text{SUPL WEC Day 7}}{\text{SUPL WEC Day 0}} \right] \times \Delta \times 100
\]

where SUPL = lambs from SUP ewes, NSUPL = lambs from NSUP ewes, \( \Delta \) = proportional change in WEC for NSUPL between Days 0-7

• Blood samples collected from lambs on Day 7 to determine packed cell volume (%)

RESULTS

**Table 1:** Mean packed cell volume (%; Day 7) of lambs reared by ewes from NSUP and SUP treatment groups (+ 68% s.e.)

<table>
<thead>
<tr>
<th>Ewe Treatment</th>
<th>PCV (%)</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSUP</td>
<td>24.9(^{b})</td>
<td>1.2</td>
</tr>
<tr>
<td>SUP</td>
<td>28.5(^{a})</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Means within columns followed by different letters are different at P<0.001 as assessed by protected Student’s T test.

DISCUSSION

• Despite not directly receiving any anthelmintic treatment lambs reared by SUP ewes had reduced WEC and higher PCV

• The benefits observed in untreated suckling lambs reared by SUP ewes suggests they received anthelmintic via milk at a sufficient level to incompletely reduce worm numbers

• The consequence of treating lactating ewes with anthelmintics excreted in milk could be that worms in lambs may be exposed to sub-lethal doses of the active/s which could hasten development of anthelmintic resistance