

Results of the WAARD Project Wales Against Anthelmintic Resistance Development

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Description of work

- 47 farms were tested for anthelmintic resistance to sheep wormers between October 2015 and July 2015.
- 11 farms were tested twice in 2 different seasons (autumn and summer)
- On each farm the three older anthelmintic groups (1-BZ, 2-LV and 3-ML) were tested as well as a separate test on Moxidectin (a member of the 3-ML group with persistent action), to see how effective they were on the farms sampled.
- Resistance was determined using the DrenchSmart® service, which has globally recognised procedures for undertaking FECRT (Faecal Egg Count Reduction Test)
- Larval cultures were carried out by Bristol University to determine species surviving treatments

Results

Figure 1. The percentage of Welsh farms with resistance (FECR <95%) to Benzimidazole, Levamisole, Ivermectin and Moxidectin drenches.

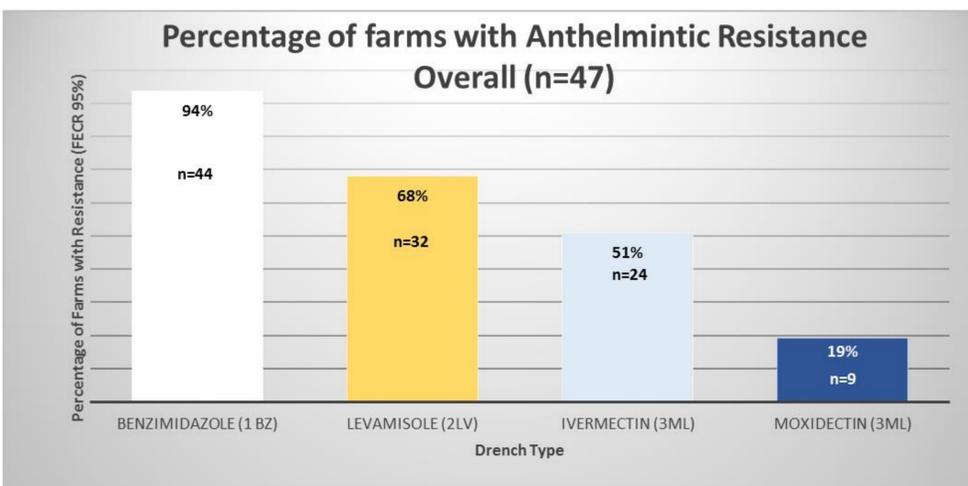
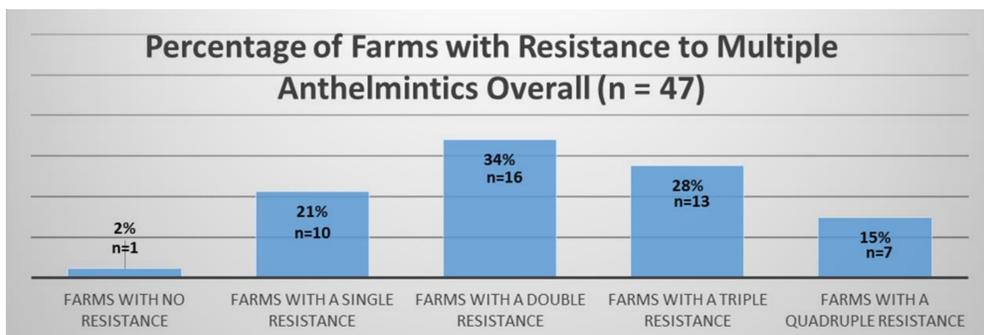


Figure 2. The percentage of Welsh farms with resistance to multiple anthelmintics. Sample sizes are shown for each category.



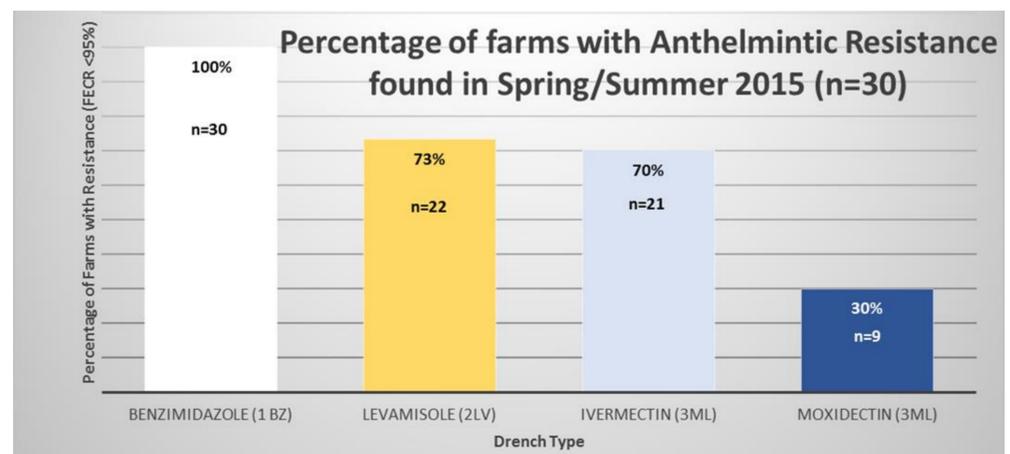
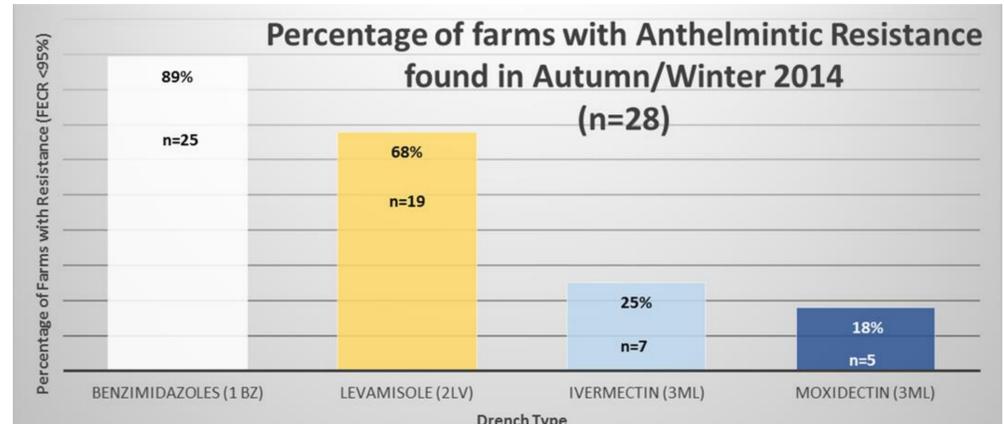
- When looking at each farm's individual FECR there is a large variation in the reduction rates from 0% reduction to 94% reduction and this is true for all four anthelmintics that were tested.
- 57% of all tests that were defined as resistant showed very poor efficacy (<80% FECR), which are likely to result in reduced animal performance.

Acknowledgements

- Welsh Government and European Union who funded this project commissioned by HCC
- All WAARD consortium members
- Farmers who participated in the project and allowed use of their data.

Difference between seasons

The two graphs below demonstrate the seasonal differences in percentages of farms that showed resistance to each of the four anthelmintics



- The results appear to be considerably worse in the spring/summer period than in the autumn/winter period, especially for the 3-ML Group (Ivermectin and Moxidectin).
- Of the 11 farms that were repeat tested, resistance status changed for six farms and all but one had worse results in the summer period than in the autumn.
- The reason for the difference could well be down to the presence of more *Teladorsagia* in the spring/summer period which may have developed more 3-ML resistance than *Trichostrongylus*.
- The spring / summer results showed that resistance was multi species in most cases where it was found with both *Teladorsagia* and *Trichostrongylus* surviving treatments.
- In the spring/summer period 60% of farms had triple resistance and over a third of these also had Moxidectin resistance. The only fully effective wormers for these farmer are the 4th and 5th generation anthelmintics (Zolvix and Startect).

Summary and recommendations

- The level of resistance in Wales has appeared to increase considerably over the last 10 years with the failure of the 3-ML group (both Ivermectin and Moxidectin) being of specific concern as it is still believed that these are effective on most farms.
- Multi-species resistance appears to be the norm which is a concern as previous UK studies tend to find.
- True cost of this resistance needs to be determined in terms of performance loss. It is estimated that it could cost the Welsh red meat industry as much as £53 million.
- There are positive measures farmer can take to combat resistance and those who took part are in a better position now they know which wormers work and which don't.
- Need to engage farmers in better adoption of SCOPS principles and alternative methods of controlling roundworms.

For copy of full WAARD project report please visit the HCC website:
www.hccmpw.org.uk