

## Results of the WAARD Project Wales Against Anthelmintic Resistance Development

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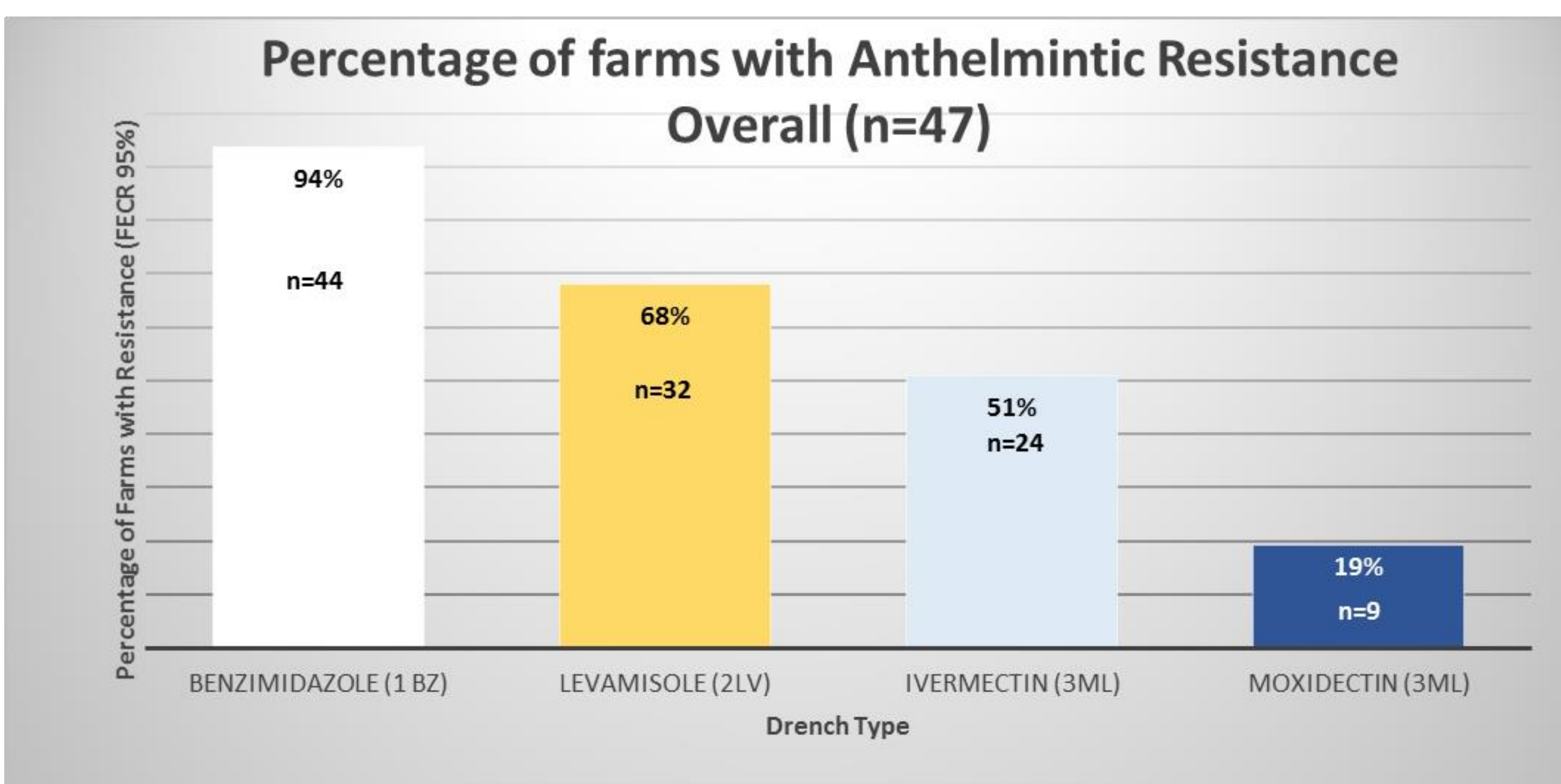


### Description of work

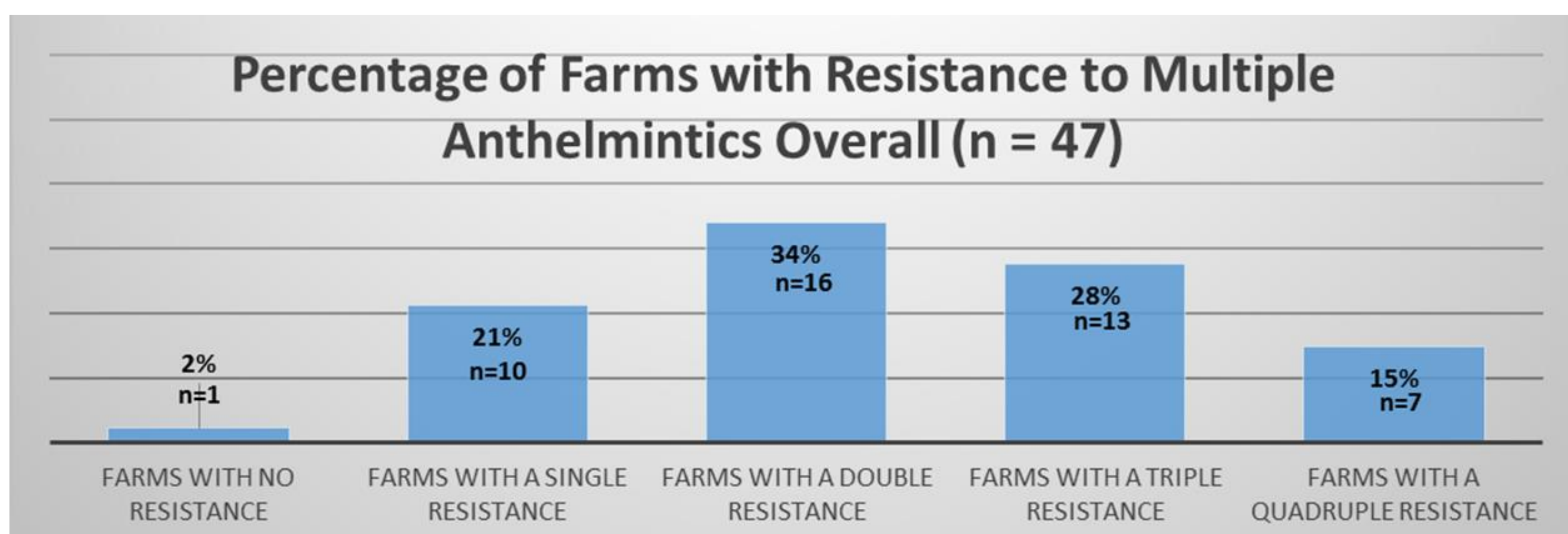
- 47 farms were tested for anthelmintic resistance to sheep wormers between October 2015 and July 2015.
- 11 farms were tested twice in 2 different season (autumn and summer)
- On each farm the three older anthelmintic groups (1-BZ, 2-LV and 3-ML) were tested as well as a separate test on Moxidectin (a member of the 3-ML group with persistent action), to see how effective they were on the farms sampled.
- Resistance were 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.



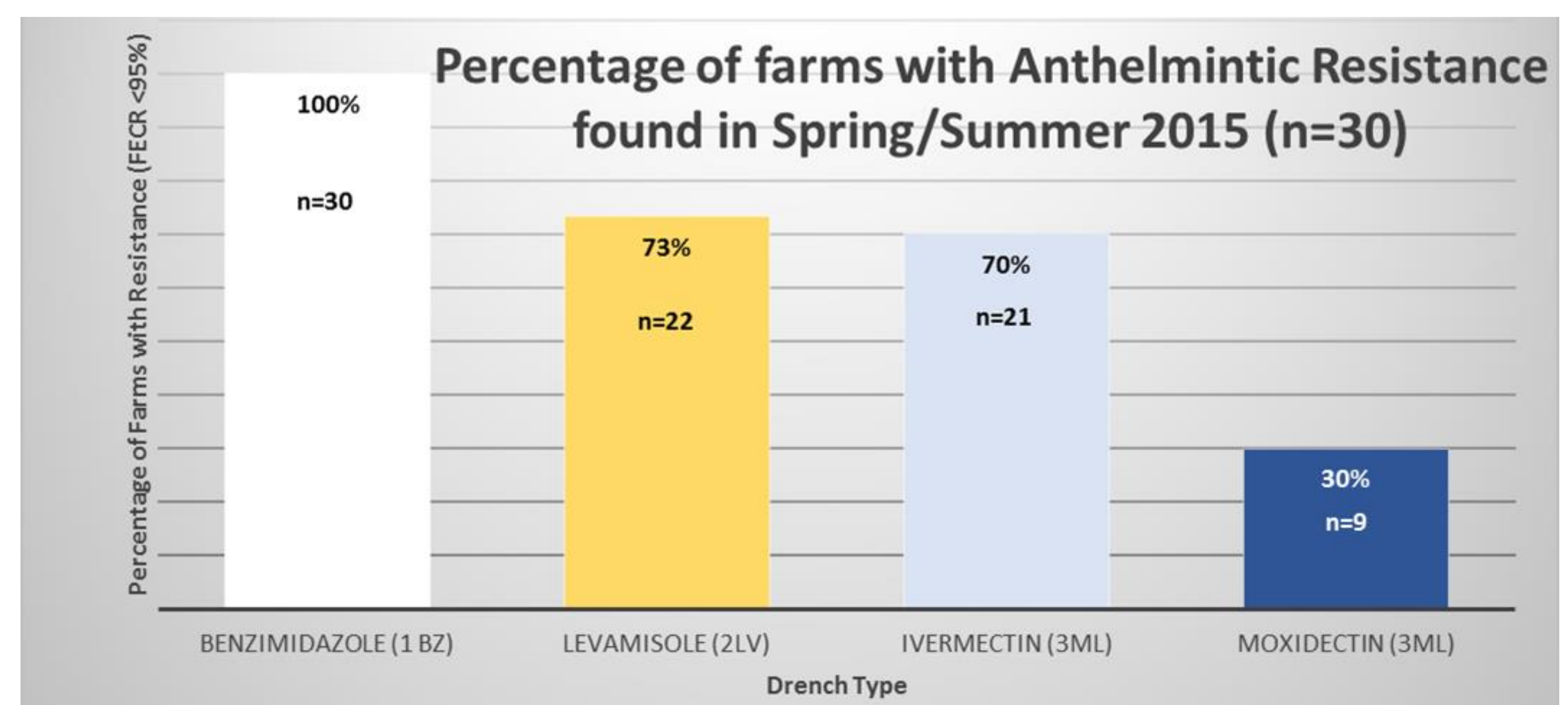
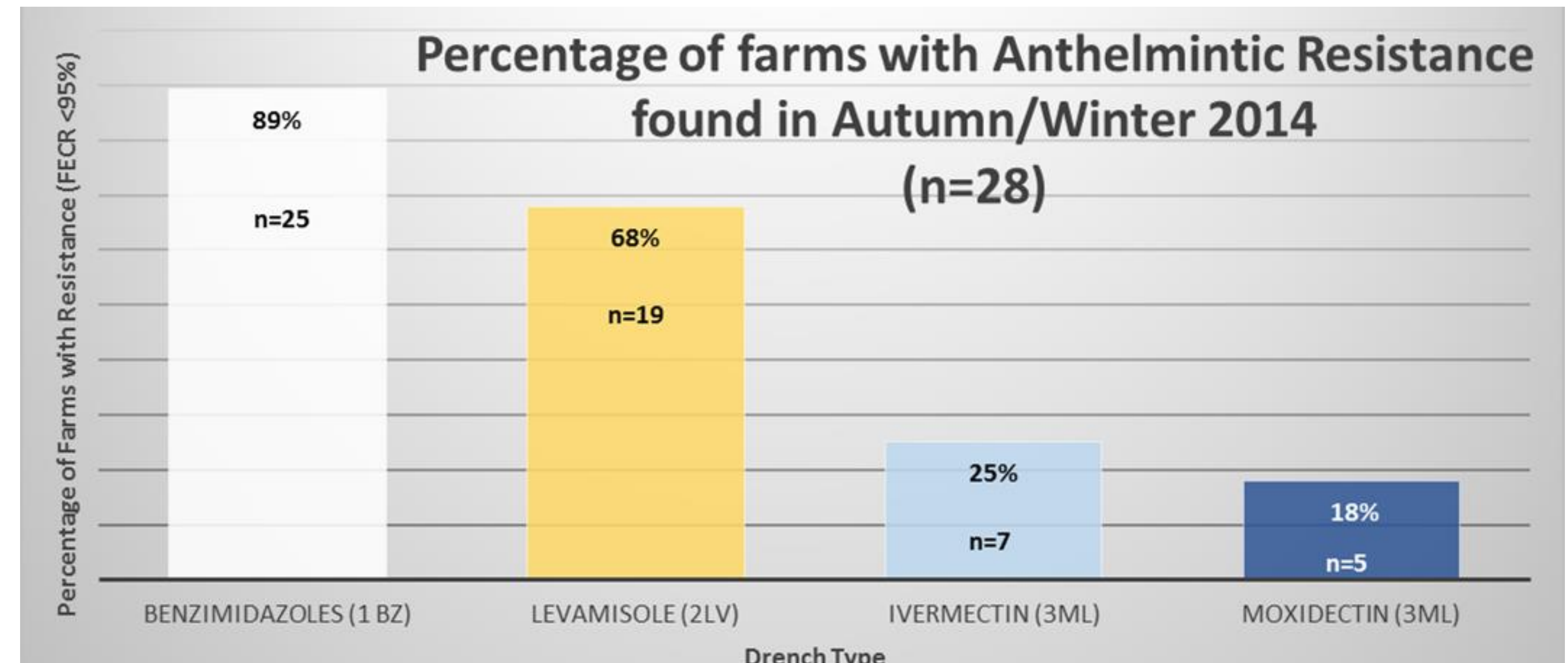
- When looking at each farm's individual FECR there is a large variation in the reduction rates from 0% reduction to 94% reduction and this is true for all four anthelmintics that were tested.
- 57% of all tests that were defined as resistant showed very poor efficacy (<80% FECR), which are likely to 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 4<sup>th</sup> and 5<sup>th</sup> 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](http://www.hccmpw.org.uk)