

2020 FLYSTRIKE PREVENTION RD&E PROGRAM PROJECT SUMMARY REPORT

AWI PROJECT NO: ON-00540

BENCHMARKING AUSTRALIAN SHEEP PARASITE CONTROL PRACTICES

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SUMMARY

Sheep parasites present an enormous cost to the Australian sheep industry with the latest estimate being \$715 million per year for worms, flies, lice and liver fluke (Lane *et al.* 2015). Sheep producers face a number of challenges associated with parasite control including parasite resistance to chemical actives, wool residues, occupational health and safety, animal welfare and environmental contamination. The 2019 Australian Sheep Parasite Survey was commissioned by Australian Wool Innovation Ltd (AWI) in order to provide industry with information to address sheep parasite control needs and was conducted by researchers at the University of New England, Armidale. This project summary report focuses mainly on the survey results addressing blowfly and some worm control practices. For links to additional results on worms and lice see the Further Information section below.

METHODS

This was the third survey commissioned by AWI on benchmarking parasite control with the two previous questionnaires surveying the years 2003 and 2011, allowing measurement of change in parasite incidence and control practices. The current survey, covering practices in 2018 and change over the previous 5 years, was conducted online for the first time and, also for the first time, comparisons were made between parasite control practices of wool sheep, meat sheep and cross-bred sheep (Enterprise). The survey was open for 10 weeks from 5 February 2019 and at the end of the survey period an invitation to complete a short five question survey was emailed to the same email cohort to measure non-response bias. Respondent postcode was used to allocate responses into Meat and Livestock Australia (MLA) Reporting Regions (Region).

RESULTS

Property and operation details

The number of main survey respondents was lower than in previous years (2018, n=354; 2011, n=575; 2003 n=1365). This was possibly due to survey fatigue in general, the length of the questionnaire, presentation of the survey on an online platform (respondents were most likely to access the survey after an email reminder) and severe drought over large parts of the continent. In addition, there were 250 usable responses to the short survey. The average age of respondents was 57 years.

The majority of respondents selected wool based enterprises as their chosen enterprise (67%) followed by meat sheep (21%) and cross-bred sheep (10%). The main source of income on the reporting properties came from wool sheep (41.7%) followed by meat sheep (27.6%), cattle (11.9%) and cropping (13.2%) with significant differences between Regions as expected. Figure 1 shows the location of respondents by Region. The survey year (2018) was drier than average in all Regions except for Tasmania.

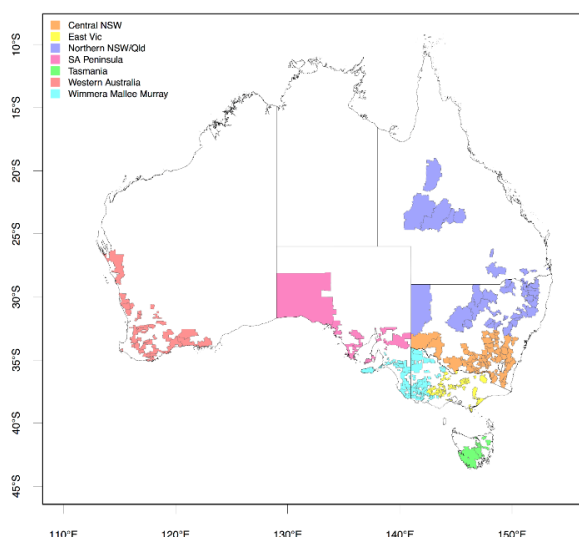


Figure 1. Location of survey respondents within MLA Reporting Regions.

Flystrike control

A lower proportion of respondents reported breech strike and body strike in their flock in 2018 compared with 2011, together with a lower incidence within the flock (Table 1). A likely factor in this reduction is that 2018 was a much drier than average year (mean reported rainfall 407mm), unlike 2011 (mean reported rainfall 650mm).

Table 1. Proportion of respondents reporting breech strike and body strike and incidence within respondent's flock in 2018 and 2011 survey years.

Sheep class	Proportion respondents reporting flystrike				Incidence of flystrike in flock			
	Breech strike		Body strike		Breech strike		Body strike	
	2018	2011	2018	2011	2018	2011	2018	2011
Adult ewes	37%	78%	14%	68%	2.7%	4.1%	2.1%	5.5%
Wethers	7%	45%	3%	49%	1.8%	5.5%	2.1%	5.7%

Respondents favoured an integrated approach to flystrike control with the most popular methods being timing of crutching (76%), timing of shearing (63%) and preventative chemical treatment (76%). Nationally, 47% used mulesing and 46% used genetic selection for flystrike control. The proportion using mulesing was lower than reported in the AWI Merino Husbandry Practices survey (63% mulesed wether lambs and 70% mulesed ewe lambs, Sloane 2018), however, that survey targeted woolgrowers whereas this survey included a significant proportion of meat producers (20%) who rely less on mulesing due to the lower susceptibility to blowfly strike of meat breeds. Merino x Merino producers were significantly more likely to use mulesing (69%) and genetic selection (58%) indicating an ongoing reliance on mulesing whilst the slower gains from genetically-based strategies build up. Meat x Meat producers were significantly less likely to mules (9%) or use genetic selection for flystrike control (26%). When asked specific questions on genetic selection for sheep that are less susceptible to flystrike, 56% indicated they used visual traits for selection and 13.3% of Merino producers 17% used Australian sheep breeding values (ASBVs) for ram selection, most of those who used ASBVs were Merino producers (77%).

A very high proportion of producers used pain relief with mulesing in ewe lambs (87%) and wether lambs (91%). This is a significant increase on use of pain relief in the 2011 survey (59% used in ewes lambs, 64% in wethers). Most used Tri-Solfen® (82%), 3.4% used both Tri-Solfen® and Buccalgesic® and only 0.8% used Buccalgesic® only.

When chemical treatments were given, they were predominantly given as a preventative treatment at approximately the same time every year (66%). Dicyclanil was the predominant chemical used with this method (55%) and backliner/spray the most popular method of application (66%). There was a low proportion of respondents suspecting resistance to flystrike control chemicals (5%).

The use of the FlyBoss website has increased substantially with 59% visiting the site and 18% using the site to make changes compared with 11% visiting in 2011 and 2% using the site to make changes.

Internal parasites – worms

Nearly two thirds of respondents used planned preventative treatments with ‘prepare clean pastures using spelling’ the second most popular method for worm control (Figure 2). There is low penetration of methods based on maintaining refugia for reducing drench resistance such as leaving some sheep un-drenched. The exception was in Western Australia where nearly 40% used that technique.

Forty percent of respondents used worm egg count (WEC) monitoring in 2018 with no effect of Region or Chosen enterprise. The mean number of WEC monitors per year was 3.1/year for ewes, lambs and weaners. The frequency of drenches was similar across sheep classes (ewes 2.1/year, lambs and weaners 2.1/year). The top three anthelmintic groups used in 2018 were macrocyclic lactones (39%), benzimidazoles (20%) and levamisole (17%), with very low uptake of the newer anthelmintic actives such as monepantel (3.2%), derquantel (3.2%) and praziquantel (0.7%). The top three drench actives used were abamectin (23.6%), levamisole (17.4%) and moxidectin (14%), these were the same top three actives reported in the 2011 survey. Most drenches were given as single actives (55%) with triple combinations the next common (21.5%).

Only 37% of respondents carried out a drench test of any kind over the 5-year period from 2014 to 2018 leaving nearly two thirds who do not know their drench resistance status.

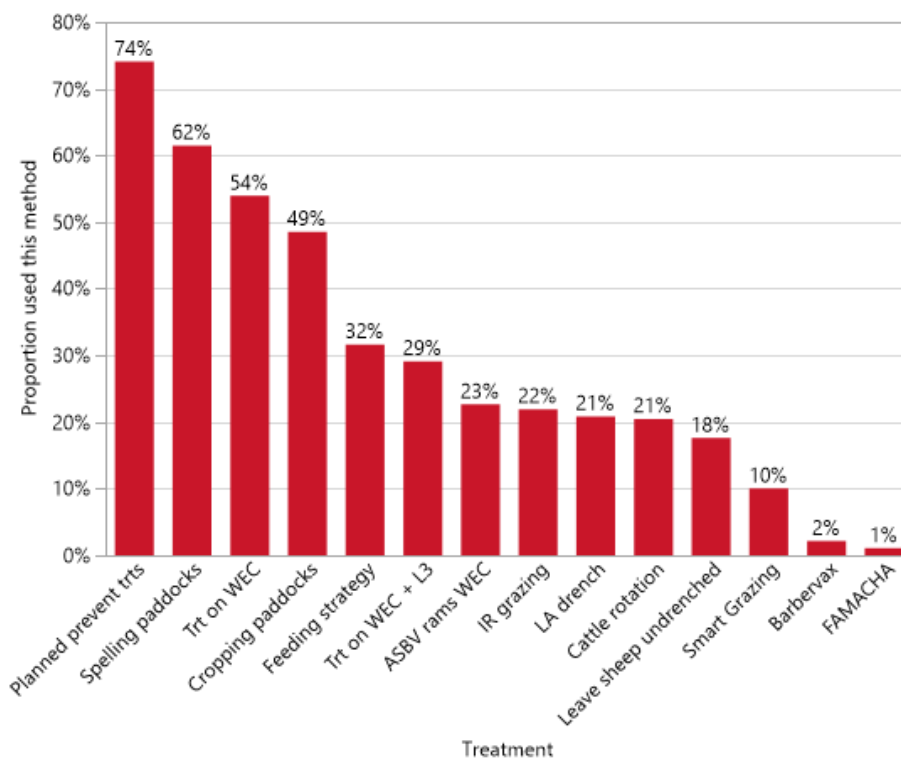


Figure 2. National proportion of respondents using a method or technique for worm control in 2018.

The use of the WormBoss website has increased significantly (63% visited site, 28% used site to make changes) since 2011 (16% visiting, 5% using the site to make changes). Over half of respondents indicated that face to face workshops were their preferred method of delivery of information (53%).

PROJECT FINDINGS – KEY MESSAGES TO WOOLGROWERS

- Merino woolgrowers have responded to consumer concerns regarding animal welfare and have overwhelmingly adopted the use of pain relief during mulesing and are moving towards non-mulesed sheep by adopting genetic selection to breed sheep that are less susceptible to flystrike through visual traits and ASBVs.
- Woolgrowers continue to demonstrate their adaptability through increased use of worm control methods and techniques such as grazing management, WEC monitoring and genetic selection. This has helped maintain chemical treatment frequency at relatively low and stable levels. However, when it comes to protecting drench resistance status there is more that can be done such as conducting regular drench resistance tests, basing drench decision making on the “Drench Decision Guide” in WormBoss and using combination drenches.
- The results of the Australian Sheep Parasite Survey suggest a continued need for information delivery and grower education across all major parasites. The ParaBoss suite of websites offers woolgrowers an invaluable resource for parasite control and allows instant access to up to date information. There was an encouragingly very large increase in the use of these websites including using the information to make changes to parasite control practices. However, the average age of respondents to the survey and their preference for face to face workshops indicates that that form of learning is still vitally important for dissemination of information.

FURTHER INFORMATION

- A summary of all the survey results was reported in the recent *Beyond the Bale* Issue 82, March 2020, Page 40 [“Parasite control: How do you compare?”](#).
- Further Benchmarking Australian Sheep Parasite Survey results on worms was published in the following ParaBoss newsletter feature article:
<http://www.wormboss.com.au/sheep-goats/news/articles/general/australian-sheep-parasite-management-survey-2019-worm-and-liver-fluke-results.php>
- An article on the survey results for lice is expected to be published in the ParaBoss newsletter and on www.liceboss.com.au in mid-June.

REFERENCES

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