

29th June 2021

Ms Bridget Peachey
Program Manager Sheep Health and Welfare,
Australian Wool Innovation Limited
Level 6, 68 Harrington St.
The Rocks
Sydney NSW 2001

Cc: Mr Stuart McCullough
CEO
Australian Wool Innovation
Level 6, 68 Harrington St
The Rocks
SYDNEY NSW 2001

Dear Bridget,

RE: AVA REPORT ON PROGRESS OF AWI RD&E FLYSTRIKE PREVENTION PROGRAM

On 28th April 2021 AVA appointed auditor's Dr Graham Lean and Professor Bruce Allworth, joined Geoff Lindon as representatives of Australian Wool Innovation Limited (AWI) to conduct a review of progress of AWI's Flystrike Prevention program against Research, Development and Extension milestones. In addition, Dr Forbes Brien and Dr Peter James were present to assess progress on Genetic projects.

The report detailing the AVA appointed auditors' findings is attached.

If you require further details or clarification of any points raised, please do not hesitate to contact me.

Yours sincerely,



Dr Warwick Vale
AVA President

The Australian Veterinary Association Ltd

Unit 40, 6 Herbert Street, St Leonards NSW 2065

Phone: 1300 137 309 / +61 2 9431 5000

Fax: +61 2 9437 9068

www.ava.com.au

ABN 63 008 522 852

REPORT BY AVA APPOINTED AUDITORS AFTER REVIEWING THE PROGRESS OF AUSTRALIAN WOOL INNOVATION'S FLYSTRIKE PREVENTION RESEARCH, DEVELOPMENT, EDUCATION, EXTENSION and COMMUNICATION (RDEEC) PROGRAM AGAINST THEIR OBJECTIVES.

April 2021

Scope of Review:

This review is intended to provide an independent assessment and review of the progress that Australian Wool Innovation (AWI) has made in its Flystrike RDEEC program against the published milestones and objectives since the last report in April 2020. The report is primarily aimed at informing wool growers and overseas retailers utilising Australian wool of progress and developments in the area of Flystrike prevention, and is a consequence of an undertaking in 2005 to overseas manufacturers and retailers of clothing incorporating Australian wool by the Australian wool industry.

Approach:

A review of the AWI research program was held between independent auditors appointed by the Australian Veterinary Association (Dr Graham Lean and Professor Bruce Allworth) and AWI (Ms Bridget Peachey and Mr Geoff Lindon) by virtual meeting on 28th April 2021. Written reports from AWI together with relevant verbal reports were provided across a range of areas.

Findings:

AWI continues to invest in research aimed at decreasing breech strike and specifically to decrease the reliance of wool producers on mulesing. The planned AWI Sheep Health and Welfare program budget for 2020-21 was \$A1m of which 85% is directed at activities to better manage flystrike. It should also be noted that while the original thrust of the AWI flystrike research program was aimed at managing breech strike only, a number of current research programs are now aimed at managing fly strike in general. Over the past year, AWI managed a total of 19 projects, including 6 projects that came to completion during the reporting period. This work, while still focused on finding alternatives to mulesing, continues to support much broader sheep welfare outcomes. In this reporting period there is continuing emphasis specifically on reducing sheep exposure and susceptibility to the sheep blowfly. A number of these projects have resulted in the production of papers for publication in scientific journals and extension articles for sheep producers.

Non-Invasive Management Practices (9 projects - 5 completed, 4 ongoing) is the main area of current research activity. Projects include chemicals (resistance in current chemicals, new chemical discovery, nanotechnology), and vaccine development.

Breeding and selection One project were completed in the reporting period, involving an epidemiological analysis of data sets to better understand variation between resistant and susceptible sheep, and concluded that the previously identified factors of wrinkle, dag and in some instances cover, were the main drivers of breech strike.

Breech Modification Procedures projects are not currently being funded by AWI.

Analgesia and Anaesthesia (Projects relating to this portfolio were previously reported as part of Management Practices). The Gap Evaluation of Pain Alleviation Research project was completed (Final Report June 2020). The outcome was a comprehensive review of the current state of play to better inform work in the future.

Education, Extension and Promotion (8 projects – 6 completed, 2 ongoing) continues to focus on the support of the successful ParaBoss website and extension activities with advisors and producer groups. The April 2020 biennial Flystrike RD&E technical update was cancelled due to the COVID-19 pandemic. Instead, a compendium of summary reports of current and recently completed AWI projects provided by the researchers was circulated to the invitees ([2020 Flystrike Prevention RDE Program Project Summary Report](#)).

Related Projects / Activities

AWI has jointly funded the Sheep Sustainability Framework, launched in April 2021. The Framework will provide a robust and transparent reporting mechanism on identified sustainability issues for the sheep industry, including the levels of mulesing and pain relief.

www.sheepsustainabilityframework.com.au

The auditors noted a number of scientific and /or producer orientated publications aimed at the adoption of breeding strategies to reduce susceptibility to breech strike and /or reliance on mulesing. This is evidence that AWI has responded to previous Auditors' Reports and is maintaining a high level of transparency with producers. However, as previously suggested, there still remains a need to develop the methodology to monitor and report on the adoption of genetic advances within industry.

A description of current projects and some commentary is provided below.

Table 1. Progress for AWI's Flystrike Prevention Program, Apr 2021

	Current Projects	Current work / Progress	Comments
Breeding and selection (1 project)	Modelling unexplained variation in Breech Flystrike	Completed	Wrinkle, dag and in some instances, cover are main drivers.
Non-invasive Management Practices (9 projects)	Histone deacetylase project Vaccine development (3) Nanotechnology Novel biocontrol's Ectoparasite resistance (2) Monitoring fly populations	Completed- inhibitors promising Projects underway, one review completed Final report due shortly Completed- no evidence found of a biocontrol agent Completed- resistance widespread, updated producer advice; honours project ongoing Ongoing to inform vaccine work	These projects have implications for both breech strike and body strike. Work focusing on vaccine development to prevent flystrike and new chemicals, as well as assessing longevity of current control strategies.
Analgesia and Anaesthesia (1 project)	Evaluation of pain alleviation research.	Completed.	Identified further work needed, use of combination drugs best.
Breech Modification Alternatives			No current AWI funded work.
Education, Extension and Promotion (8 projects)	Flystrike RD and E Update Forum ParaBoss support Producer/advisor projects (5) Wool Industry Survey	Summaries published Ongoing 4 completed, 1 ongoing Published	On-going commitment for transparency and dialogue. AWI Animal Welfare forum postponed due to Covid 19.

NON-INVASIVE MANAGEMENT PRACTICES

THE AIM: Improved management practices to reduce the risk of flystrike

Stated Outcome	Activity during Reporting Period - 9 projects	Comment - 5 completed, 4 ongoing	Outcome Achieved
Monitor and define blowfly resistance to chemicals.	00491 completed- resistance emerging issue		Yes
Refine blowfly chemical resistance best practice management advice.	Updated from 00491 and 00540 Benchmarking (completed) 00651 -Honours project ongoing		Yes
Invest in early trials of new potential actives and parasitic control treatments and vaccines.	00454 completed- HDAC inhibitors promising 00549- ongoing- nanotechnology- final report due 00619- vaccine – ongoing 00723 – fleece rot vaccine review- completed	Final report now due for 00549	Yes
Complete a population study of blowflies to identify potential genetic differences to inform blowfly management programs.	00624 – Informing on vaccines- ongoing 00721- biocontrol- completed – no evidence	Important work to understand potential for differing fly populations	Yes

ANALGESIA AND ANAESTHESIA

THE AIM: Improved provision of analgesia and anaesthesia for surgical husbandry practices.

Stated Outcome	Activity during Reporting Period - 1 Project	Comment - 1 completed	Outcome Achieved
Investigate longer acting, cost effective anaesthesia and analgesia options.	00550- Gap Evaluation- completed- combination best, more work needed	Excellent initiative	YES
Extend advice on analgesia and anaesthesia to woolgrowers.	Biennial update and Beyond Bale update from 00550		YES

BREEDING AND SELECTION

THE AIM: Long term solutions to advance lifetime welfare.

Stated Outcome	Activity during Reporting Period – 1 Project	Comment – 1 completed	Outcome Achieved
Understand the performance and economic impacts of breeding for reduced flystrike.	Work completed previously. No current activity.		
Investigate the, as yet unknown, factors that cause flystrike.	00715- Ausvet review of previous data- completed	Completed during period.	YES
Improve the accuracy of selection for flystrike resistance traits through phenotyping and genotyping.	No current work.		
Better understand how to reduce the incidence of dags and urine stain through breeding.	No current work.		
Track genetic trends for breech wrinkle, breech cover, dags and higher productivity	Publish trends in biennial RDE Update – 2020 Flystrike Prevention RD&E Program- Project Summary Reports		YES

BREECH MODIFICATION PROCEDURES

THE AIM: Breech modification procedures to improve lifetime resistance to flystrike.

Stated Outcome	Activity during Reporting Period – 0 Projects	Comment	Outcome Achieved
Undertake further R&D of the animal welfare impacts of breech modification procedures.	No activity		
Undertake further R&D to refine the application protocols for breech modification procedures.	No activity		
Support best practice mulesing training.	Publication of guidelines for mulesing		YES



EDUCATION, EXTENSION AND PROMOTION

THE AIM: Adoption of best practice strategies to improve the lifetime welfare of sheep, reduce reliance on mulesing and support transparency in the supply chain.

Stated Outcome	Activity during Reporting Period – 8 Projects	Comment- 6 completed, 2 ongoing	Outcome Achieved
Develop and implement education, training and extension strategies to improve lifetime welfare of sheep.	00382-ParaBoss-ongoing (with MLA) 00651- 2020 Flystrike Prevention RDE Program Project Summary Report –completed		YES
Monitor, evaluate and improve the success of education, training and extension strategies.	CS_00178 Wool Industry Profile- completed	Excellent report available	YES
Engage with woolgrower advisors on the RD&E program.	00765- Flystrike Extension Package – ongoing 00493- Putting Wormboss into Practice-completed 00710 On-farm antheminitic efficiency –completed 00485 /6- FEC methods- completed	It’s Flytime completed SimpliFly about to occur	YES
Ongoing engagement with domestic and international stakeholders to ensure they understand best practice management of flystrike and the welfare implications.	No welfare forum in 2020 due to COVID19		

Aligned Projects

00485 /6- FEC methods- completed