

AWI Breech Strike R&D Technical Update
Maritime Museum, Sydney
12th July 2016

Geoff Lindon
Australian Wool Innovation

Key Messages

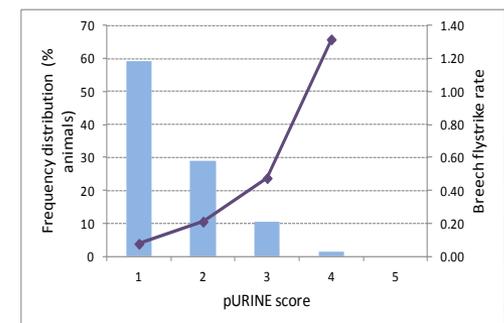
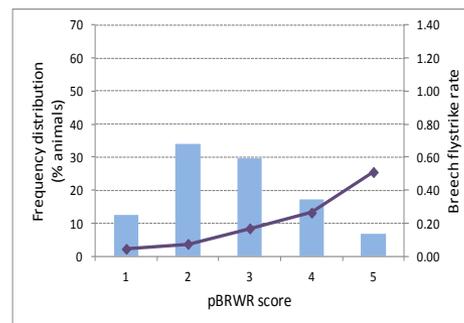
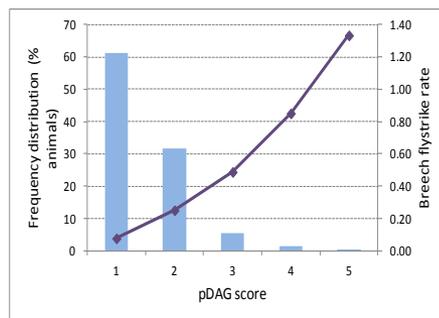
Key Messages

Breech Strike Prevention



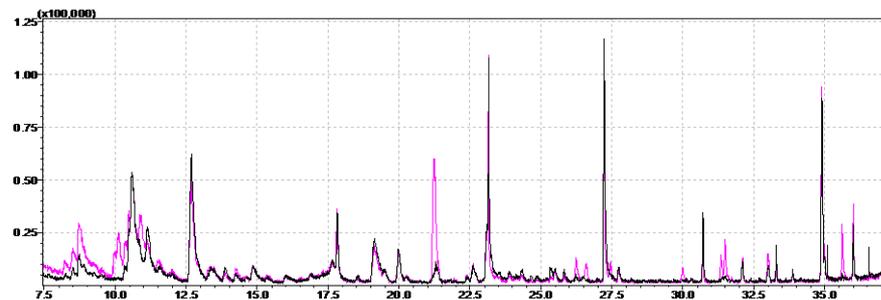
Key Messages: Breeding for Breach Strike Resistance

- Relationship between breach trait scores & breach strike; each 0.1 score reduction, reduces risk
- Key targets for indicator scores are: **2:2:2:3**
 - Wrinkle Score 2 or less; Dag Score 2 or less; Stain Score 2 or less; & Breach Cover Score 3 or less (then the risk of breach strike is similar to 'control mulesed')
 - Can achieve targets by sheep selection, mulesing, or alternatives
 - Chemicals override the need for target scores during protection period
 - Above 2:2:2:3, risk of breach strike increases rapidly,
 - Below 2:2:2:3, risk of breach strike continues to decrease



Key Messages: Breeding for Breech Strike Resistance

- Breech Strike is highly repeatable, cull struck sheep
- Wrinkle and Cover – good progress to non mules genetic option in medium wools but more difficult for Fine and Super Fine Types
- Reducing dags is much more difficult, environmental causes of dags swamps very slow genetic progress
- Odour and bacteria may be important factors but it will be some time before they are validated and usable by Industry



Key Messages: Breeding for Breech Strike Resistance

- Breeding Values assist rate of gain especially when there are;
 - a) large numbers of traits to select for
 - b) reasonable number of priority traits that are negatively correlated
 - Fleece Weight and Micron
 - Fleece Weight and Wrinkle
 - Fat and Productivity (Fleece Weight and Reproduction)
 - Worm Egg Count and Dags
- It takes focus, group of fellow breeders on same path and time.... to breed “curve benders”
- Low breech wrinkle sheep get most strike on the tail



Key Messages: Breech Modification - Alternatives

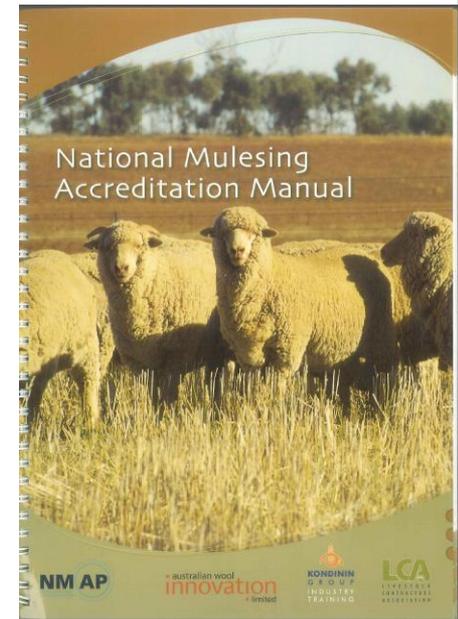
- **Clips:**
 - Number now unclear, was c30,000 lambs per year
 - Most reusing clips each year
- **SkinTraction:**
 - Negotiations continue with Cobbett Technologies
- **Liquid Nitrogen:**
 - Next R&D phase to begin, contract negotiations
- **Laser Technology:**
 - Did not pass proof of concept. Keeping eye on new dual laser (tattoo removal technology)

Encouraging welfare assessments to date for all alternatives although more work needed



Key Messages: Breech Modification – Training

- NMAP Training
 - Update by Animal Health Australia & WoolProducers Australia
 - Newly endorsed under the Australian Qualifications Framework (AQF) system
 - Opens access to Government Industry Training Funds
 - Can be used as part of Certificate 3 and 4 in Agriculture
 - Train The Trainer “training”, delayed to late 2016
 - Aim to recommence NMAP training soon after
 - Kondinin has updated old training records and approvals



Key Messages: Breech Modification – Pain Relief

- Local Anaesthetics:

 - Tri-Solfen and Numnuts

 - Rapid adoption of Tri-Solfen over last 9 years, seeking to expand use patterns, Numnuts still in R&D phase
 - S5 category drugs, so over the counter sales permitted

Market competition

- Non Steroidal Anti Inflammatory Drugs:

 - Metacam & Buccalgessic

 - Metacam just on market for sheep, a world first for a sheep NSAID
 - Buccalgessic soon to be registered
 - Both S4 drugs, so limits on marketing

- Dr P Hynd Review (Uni Adelaide) – advances in electro analgesia

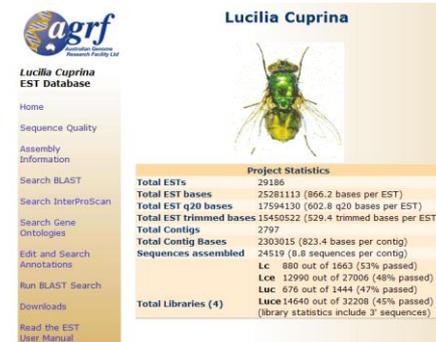


Key Messages: Sheep Management

- Tail docking methods (hot, cold knife and rings) similar for strike risk and welfare (CSIRO)
- Further evidence of importance of correct tail length
Dr Joan Lloyd (MLA report); lamb arthritis higher with short tails
- Castration methods (knife and rings) similar for welfare (CSIRO)
- Dicyclanil and Cyromazine continue to provide good protection for label periods listed on product labels

Key Messages: Chemical Prevention

- Very important tool in the basket, (along with crutching, breech traits, tight lambing, time of shearing)
- Use existing chemicals wisely to delay onset of resistance (See FlyBoss)
- Harder to get new chemicals registered, on going R&D into new options:
 - Uni Melbourne; Understanding how current chemicals work. Targeting active genes specific to larvae and gravid fly parasite
 - CSIRO Brisbane; (5 Histone Deacetylase enzyme inhibitor targets)



Key Messages: National Wool Declaration (NWD)

- NWD commenced 2008/2009
 - 55% of wool clip 2015/16 sold with NWD,
 - 35% of wool clip declared NM, CM and PR
- Merino Wool (<24.4um) 6% clip NM, 3% CM and 26% PR
- <1% non compliant at level 2 for NM/CM (miss-representation, refused audit)
- Room to improve paperwork (supply, not signed, blanks cells, data errors)
- Industry cooperation aimed at improving NWD adoption and compliance.
- Premiums at auction low



Key Messages: – Extension & Training

Para Boss 

MERINOSELECT & Lifetime Productivity



AWI State Extension Networks



New National Mulesing Accreditation Program

(Animal Health Australia, WoolProducers Australia)

AWI Website: On Farm - Animal Health



Beyond the Bale, AWI e-newsletter

Making More From Sheep

Workshop *Intro to “Stockmanship” & “Sheep Classing”*



Flystrike Manual



Key Messages: – Supply Chain Communication

Australian Governments

- Animal Welfare Standards and Guidelines
- Welfare is State based legislation

Australian Animal Welfare Groups

- AWI meet with them 1 to 2 times per year

AWI Breech Strike RD&E Audits

- Aust Veterinary Assn and Genetic Reviewers



Assistance to Domestic and International Retailers

Key Messages: – Cease Mulesing Plan

- Plan, plan, plan - don't just stop mulesing
 - Need to rebalance basket of all other control procedures
 - Care with reliance on chemical options, esp. in high dag zones
- Clear focus on balanced profitable merino and how to achieve it for specific environment; set breeding targets
- Need to manage both upsides and downsides if introducing new genetics
- Work in with other like minded breeders
- Proactive marketing of wool and surplus sheep
- Whole business needs to be on board inc. shearers, agents

Future RD&E Focus



Future RD&E priorities

- **Odour and Bacteria**
 - Validating early results, which odours attract or repel flies?
 - Role of moisture, timing of wool sampling
 - Will odour take some pressure off breech traits and reliance on chemicals?
 - Once validated take to Industry, progeny at Sire Evaluation Sites
- **Urine stain**
 - What causes some sheep to get urine stain and others not? ASBV?
- **Dags and Scouring**
 - Correlation between dags and faecal consistency, role in ASBVs
 - Hypersensitivity (dags from low but increasing larvae early winter) how important is it
 - Genomic options?
 - Improving adult worm control



Future RD&E priorities

- Improving rates of gain, wrinkle, dag, cover, productivity
 - “DashBoard” (assess rate of gain) and “Matesel” (joining strategy)
 - Making ASBV technology more accessible, reducing adoption barriers
- Commercialising Breech Modification Alternatives
- Fly Genome
 - Chemicals or vaccines targeting gravid fly and emerging larvae
- Pain Relief
 - Longer acting, improved drug combinations
 - Improved assessments and measurement of pain
- Training and Adoption
- Supply Chain Communication



Australian Wool Innovation acknowledges the support and commitment to the Breech Flystrike Prevention R&D&E program



The University of Sydney



Industry & Investment

SHEEP GENETICS



TROY
ilium



MACKINNON



paraboss



ANIMAL WELFARE
SCIENCE CENTRE



WOOLPRODUCERS
AUSTRALIA



Government of South Australia
Primary Industries and Resources SA





This publication is based on information presented at the Australian Wool Innovation Limited (AWI) National Wool Research and Development Technical Update on Breech Flystrike Prevention held on 12th July 2016. Some information in this publication has been contributed by one or more third parties and licenced to AWI, and AWI has not verified whether this information is correct.

This publication should only be used as a general aid and is not a substitute for specific advice. Any reliance on the information contained in this publication is done at your own risk and to the extent permitted by law, AWI and any third party contributors exclude all liability for loss or damage arising from the use of the information in this publication.

Except to the extent permitted under Copyright Law no part of this publication may be reproduced by any process, electronic or otherwise without the specific written permission of AWI. Neither may information be stored electronically in any form whatsoever without such permission.

AWI gratefully acknowledges the funds provided by the Australian government to support research, development and marketing of Australian wool.