Mastitis in Australian sheep

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Today’s presentation

Brief introduction

Overview of mastitis in Australian sheep systems

Clinical mastitis
  Impact & Treatment

Subclinical mastitis

How you can be involved in the research
Number of sheep in Australia

- About 70 million in mid 2009 (Wilcox, 2009) – 73 million now (MLA)
- About **41.8 million** of these are breeding ewes
  - About 76% of these are Merino ewes
  - 13% are first cross (eg. Mer * BL)
  - 3% Dohne & SAMM
  - 8% other – British Breeds and others
Percentage of breed affected per annum by clinical mastitis

- Terminal sires – about 3-5%
- First cross – about 2%
- Merino – 1 or 2%

- All breeds have outbreaks with up to 20 or 30% of ewes affected (rare in Merino)

**Most common causes**

- *Mannheimia (Pasteurella) spp* – including *haemolytica* and *glucosida*

- *Staphylococcus aureus*

**Symptoms:** Leads to “black” or “blue” mastitis – severe, very rapid, results in death and then loss of tissue
Impact of clinical mastitis

**Black mastitis**
- Almost all ewes culled at end of current lactation
- If retained, half udder non-functional (twins/triplets problem)
- Lambs generally die (or are fostered)
- Lame, lose weight
- Eg. One producer in 2011 – 38 ewes died or culled from 106 ewe flock

**Other clinical mastitis**
- Less severe, may not result in loss of udder
- Milk quality impact
- Lamb death rate
- Reduced production
Standard methodology

- Plating
- Further identification (biochemistry & molecular)
- Antibiotic sensitivity

*In vitro* Antibiotic resistance

- *Mannheimia* – erythromycin, sulphafurazole
- *Staphylococcus* – trimethoprim, penicillin, erythromycin

**Treatment**

- Range of methods (mostly injection into muscle)
- Cull
Sub-clinical mastitis

Sample collection
Diagnosis

• Culture
  - Most common bacteria are different to clinical mastitis

• ISCC
  - Use both halves collected together (cell count = average of two halves combined)

• Results from Merino cross lower (in different environment) than terminal sire (Poll Dorset):

5-10% subclinical mastitis in young ewes
Genetics

- Early evidence suggesting some sires and breeds more likely to have female progeny developing mastitis

- This agrees with work done in dairy sheep in France, Italy and Spain

- Selecting for ewes with low cell count resulted in lower cell count in their progeny ie less subclinical mastitis, and also lower clinical mastitis

- Potential phenotypic method?
Culture & Sensitivity

Collection packs for milk collection from ewes with mastitis – What bacteria? What antibiotic?

We can currently offer this for free and have packs available today.

Biosecurity

- Have a biosecurity plan for what actions you take to reduce import of diseases (particularly with references to bringing in groups of sheep onto property)

Minimise other disease

- Scabby mouth vaccine? Balanced diet (if having to feed grain)
• Age of ewe

• Stage of lactation

• Single/Twin/Triplet

• Previous history of mastitis &/or genetic susceptibility

• Increased stock density & common feeding source/water source – imbalance in milk produced versus that required

• Environment (cold/wet/dry/hot)

• Other infected animals in close proximity (as well as their lambs)
MLA & Sheep CRC INF properties – current work on mastitis

MLA & APDA – PIRD grant. Mackinnon Project, University of Melbourne

APDA & producers. Many veterinarians & producers.

AWI & MLA – SGP

Asia Pacific Centre for Animal Health, University of Melbourne

Mr Garry Nolan – engineering design and manufacture