

# Clip alternative to mulesing

The Australian sheep industry has spent decades and significant research time and money trying to find better ways to prevent and manage the damage caused by flystrike.

Mulesing and tail docking are currently the most practical, effective and humane methods to prevent breech flystrike.

On behalf of its shareholders, Australian Wool Innovation Limited (AWI) is exploring all possible areas to find an alternative to mulesing and better ways to prevent and control flystrike.

AWI has \$10 million invested in this area, with a total of up to \$15 million earmarked, to deliver one or more mulesing alternatives as quickly as possible. AWI is confident that at least one alternative will be on the market by 2007 and expects one or more alternatives will be available by the industry's target date of 2010 to phase out mulesing.

Clipping is one of a number of alternatives to mulesing being developed by AWI.

## How clipping works

Mulesing involves the cutting of crescent-shaped pieces of skin from the breech and tail of lambs. As the skin wounds heal, their edges are pulled towards each other, causing a tightening of the skin, reducing skin wrinkles and expanding the natural bare area of the breech. As a result, the breech area becomes less susceptible to flystrike due to reduced areas of urine and faeces contamination.

The concept of clipping developed from the idea that it may be possible to create the same effect as surgical mulesing without creating an open wound.

Currently there is a clip for the breech region and two clip designs for the tail. The aim is to design one clip that will create stretch in the breech region - the channel - and lift the bare skin under the



Two prototype tail clips.

tail up onto the top of the tail to reduce possible dag attachment to wool.

The clips are attached to flaps of skin that would be removed during mulesing. The clip closing pressure on the flap of skin prevents blood flow to that part of the skin. The lack of blood supply causes the flap of skin to wither and both the clip and the skin flap typically fall off within a couple of weeks to leave a closed linear scar. There is no open wound at any time during the process.

One of the advantages of the clip method is that the amount of skin 'stretch' can be clearly seen during the process of applying the clips, making it easier to achieve the optimal bare breech result.

## How it was developed

The concept of clipping was developed by AWI Directors and South Australian sheep producers Ian McLachlan and Chris Abell who developed early prototype clips. Mr McLachlan and Dr Abell donated all intellectual property associated with this clip method to AWI on 15 June 2005.

AWI has contracted a research engineering firm to design and prototype the clips, a dispenser and applicator. AWI are also performing plastic material trials to establish what material will degrade in paddock conditions after they fall from treated animals.



Dispenser of breech clips.



No open wounds are created during the clipping process.

## Results to date

Work on the clips began in early 2005. To date, the work has concentrated on identifying the optimal designs, production materials and methods of application, as well as evaluating how well the process works and the advantages in terms of animal health and welfare.

## at a glance...

- Clips are one of a number of alternatives to mulesing being developed by AWI.
- The natural bare area in the breech is stretched without the need for cutting.
- Early results are very positive.

A study in July 2005 by the Animal Welfare Science Centre confirmed that clipping was less stressful to lambs than mulesing.

Initial field trials investigated different designs and materials. Five further field sites in NSW were established to measure the effectiveness of clips compared to mulesing over a period of 18 months. The latest series of field trials starting in June 2006 will confirm the practicalities of using the clips across several States and different sheep types.

Results being collected from these trials include: the size and nature of the bare area on the breech; the weight gain in the days and weeks after application, which is an indication of recovery; and the incidence of breech flystrike in clipped or mulesed groups. The trials will continue for two years so that the effects of the clips can be assessed through to the first lambing of the ewes.

Early results are very positive and are shown in the table below. In summary, the clips produced a bare area slightly narrower than that produced by mulesing. However, the bare area produced is still significantly wider than unmulesed sheep which, from previous data, had a natural bare area width of approximately 3.4cm.

### Results from clip trials (six weeks after mulesing or clipping at marking)

	Clipped	Mulesed
Bare area width	5.2cm	6.4cm
Bodyweight	26.9kg	24.7kg

Sheep modelling the clips.



Six weeks after treatment, the clipped lambs were on average two kilograms heavier than their mulesed counterparts, a strong indication that the clip method caused less stress than surgical mulesing.

### Further development

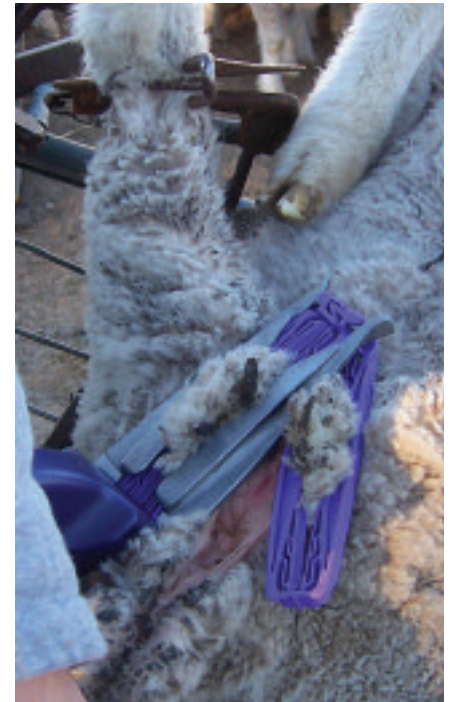
The ongoing development of the clips is focused on three areas:

- identifying the most suitable biodegradable materials for the clips;
- developing a clip that can perform over the different regions of the breech and tail; and
- ongoing work on placement of clips and applicators.

### Commercialisation

AWI lodged a full patent for the clipping method and design in June 2006.

If trial results confirm the effectiveness of the clips over mulesing, then the registration process should be relatively quick because they are non-invasive. Subject to trial results and the outcome of ongoing development, it is possible that clips could be available in 2007.



The clips are attached to flaps of skin to create a wider channel.

### For more information

Call AWI tollfree on 1800 070 099, visit [www.wool.com.au](http://www.wool.com.au), or get in touch with Jules Dorrian.

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