Flystrike management

The Cutting Edge (An account of mulesing in Tasmania)

Alan Jones
C/- PO Box 137, Kings Meadows, TAS, 7249.
Email: ajones@vision.net.au

Summary

Tasmania started seriously promote mulesing as a flystrike management tool in 1965. The small-scale hands-on learning field days resulted in the rapid development of a pool of skilled mulesing operators, many of whom were flock owners or managers. Within fifteen years half of the sheep in the state were being mulesed, and mulesing is now accepted as a management tool by most wool producers in Tasmania.

Keywords

Mulesing, Tasmania, flystrike, extension

Introduction

Lucilia cuprina, the sheep blowfly, was not identified in Tasmania until as late as 1951. This was at Sorell, near Hobart, but it was soon established in most of the main sheep areas (Ryan, 1954). Prior to that, there had been many reports of flystrike problems in the state, but not on the scale seen from the early 1950s.

A fly trapping program commenced in 1981 in Northern Tasmania, and identified *L. cuprina* at all sites (McQuillan *et al*., 1983). Further investigations also looked at the role of carrion in the breeding up of blowflies, seasonal incidence and population changes, strike incidence and the benefits of mulesing, along with the occurrence of covert strikes (McQuillan and Jones, 1985).

Fifteen flocks involving four breeds were monitored for body strike. Differences in wax and suint between struck and not struck sheep, or between sheep selected as susceptible or resistant were either insignificant or significantly small compared with the variation within groups. The subjective classification of sheep was more successful in identifying those most likely to be struck than any measured character (Bottomley and Jones, 1983).

The History of Mulesing

The flystrike problem in Australia was formally attacked with the creation of the Joint Blowfly Committee in 1912. This joint operation between the New South Wales and Queensland Departments of Agriculture operated an annual Fly Research station on different properties for a number of years. Jetting was developed as an alternative to dipping, with arsenic the chemical of choice (Joint Blowfly Committee, 1933).

The CSIR was formed in 1928, and a major initial research focus was the blowfly problem. In 1930 a prize was offered for any good ideas, and ultimately it was awarded to J.H.W. Mules of South Australia for his method of skin removal to produce a smooth, tight and wool-free breech. (He never received the promised prize, but instead was employed as a consultant on mulesing from 1939 until his death in 1942.)

Mulesing was demonstrated across Australia in the mid-1930s, but only received formal approval from the animal welfare committees in 1939 (Joint Blowfly Committee, 1940). War time restrictions on extension and labour meant that adoption was patchy, and most extension seems to have been through neighbours and the personal efforts of contractors to build custom. Uptake was probably pushed by the desperation caused by the lack of man-power for control measures such as individual treatment and crutching.

The post-war peak in wool prices made flystrike loss a severe economic issue, and mulesing became rapidly accepted across mainland Australia even with the rapid increase in alternative chemical treatments. By 1970,

a B.A.E survey indicated that 31% of sheep were being mulesed. (BAE, 1972). These would in most cases have been autumn lambs being mulesed as weaners in the spring time.

Mulesing techniques have evolved over time; so too has tail stripping and tail length. A very radical mules needed a short tail. When this was found to increase the level of cancers on the vulva, a longer tail became necessary and a modified radical style was developed. This leaves a strip of skin down the middle of the tail and the longer tail doesn't distort sideways on healing. There is always the need to ensure that bare skin is not removed during mulesing, whatever style is used.

Background to Mulesing in Tasmania

Some Merino ewes were being mulesed in Tasmania prior to my arrival in the state in 1965, but woolgrowers were not interested in doing other breeds, assuring me that the C.S.I.R.O recommendation at that time was to mules only wrinkly Merino ewes. At this time, the Tasmanian flock was only about 10% Merino, with the predominant breeds Polwarth and Corriedale. The 1970 BAE survey indicated that only 7% of Tasmanian sheep were mulesed (BAE, 1972).

Sheep management tended to be similar on most properties post-World War II; stocking rates conservative, ewes rotationally grazed, rationed onto forage crops in early winter and lambed in July-August on autumn-saved pasture. Shearing was in spring and early summer. The growing seasons were reliable, with spring excellent and autumn usually good. Obviously the good old days!

In other states, with autumn lambing, the mulesing was usually carried out offshears when they were weaners. With the Tasmanian spring-born lambs, this weaner mulesing meant that it was being carried out during the fly season. However, experience with a small experiment in Western Australia showed that lambs could be successfully mulesed at marking rather than waiting until they were weaners and 'large enough' to create a sufficient area of bare skin (Lightfoot, 1964).

It is worth noting that the major misconception about mulesing amongst woolgrowers was that it was the removal of wrinkles that benefited sheep. Thus there was no point in treating the smooth-skinned Polwarths and Corriedales. It took time to demonstrate that skin removed from the crutch stretched the naturally bare area under the tail. This enlarged bare area tended to stay clean and dry, and didn't collect dags and stains, so didn't attract blowflies.

In Tasmania we found that longwool crossbreds could collect big round dags on the overhanging wool. These dags swing freely and don't predispose sheep to flystrike. This problem was resolved by crutching higher over the tail in these breeds.

Alternatives Methods of Mulesing

Phenol

An experiment in New Zealand using Romney, Perendale and Halfbred lambs compared mulesing, phenol treatment and untreated. The treated groups produced half the weight of the dags as the controls (Hawker, *pers. comm.*). Both treatments were effective in increasing the size of the bare area, but it was wool hanging down over the tail in the longer wool breeds and collecting dags that discouraged a National recommendation to mules. However, there was no measurement of flystrike propensity.

Freeze branding

A small group of weaners at Cressy were freeze branded in the crutch to see if we could create a bare area by killing the wool follicles. It was partially successful but slow, and we didn't persevere with it. The treated area had a "hairy' appearance; in retrospect perhaps they were primary fibres. To produce a bare area by killing all the wool follicles would have been an interesting alternative to mulesing. However, it wouldn't have got rid of the sweaty folds in wrinkly sheep.

The Tasmanian Mulesing Programme

In 1965, the Tasmanian Department of Agriculture began a programme to promote mulesing to wool producers. I was employed at that time due to my experience in shearing and sheep management, including mulesing.

To gain credibility and to collect information about local conditions, an experiment was carried out at Cressy Research Station involving Corriedale and Border Leicester x Corriedales. The group was divided into three and were left unmulesed, or either radically or modified mulesed at lamb marking and monitored during their first 20 months (Reid and Jones, 1976). In these sheep, mulesing was beneficial in terms of less dags, stains and crutch strikes. Deaths and weight loss were not significantly different. Such comprehensive benefits in plain-bodied sheep kick started an extension programme to the stage where in 15 years it was difficult to find a large wool growing property in Tasmania that did not mules.

With the unpredictability of lamb-marking at a time of the year when settled weather was unreliable, it was decided to teach the farm managers/owners how to carry out their own mulesing rather than to encourage reliance on the development of a contracting service.

By using a cradle, only one catcher was needed and this released two or three holders who could be diverted to other jobs. The use of multiple cradles was probably the basis of the adoption of mulesing on most woolgrowing properties in Tasmania.

Mulesing Extension

Working through District Extension Officers, mulesing demonstrations were held on-farm strategically around the state to ensure that there were farms with mulesed sheep in all districts. With a rotary cradle at lambmarking it was possible to have five people all learning at the same time (Jones, 1975). During the early days, woolgrowers had many reason as to why they didn't mules. With hindsight it would seem that once they were surrounded with neighbours doing the job as normal management, they were convinced that it wasn't so bad after all.

A major stumbling block in the early days was that woolgrowers just couldn't believe that enough skin could be removed at lambmarking. Once we had mulesed sheep in most districts where we could show people that the bare areas grow wider as the animal grows larger, our problem was solved. They could see for themselves that the mulesed sheep were rarely struck, while unmulesed animals in the same mob in some cases had up to 36% strike rate (Jones and McQuillan, 1983).

Wethers after their first year usually graze on native grass runs where scouring is minimal, and it wasn't considered worthwhile to mules them in the early days of this programme. However, when it was seen how comparatively dirty the wethers in a mob of mixed-sex weaners could get, it became standard practice to mules all lambs. They also benefit from fewer stains as adults.

As for crossbreds, with the Cressy results in mind, it was our recommendation that all sheep being kept for more than a year should be mulesed. In general, the breeders of first cross ewes sell them to prime lamb producers. Even though there were husbandry advantages during their first year, it wasn't until there was a saleyard premium that reasonable numbers were mulesed in Tasmania.

In the decade following 1966, the management advantages from mulesing early could be seen. Wool lambs had to be shorn or crutched before blowflies became active in November, but mulesed lambs were protected and could be shorn whenever it suited, Later, when wool began to be sold objectively, being able to choose the most appropriate shearing time became even more important. Instead of a September to December shearing season, sheep are now being shorn somewhere in Tasmania every month of the year. Also, with the economic downturn and the reduction in the farm labour force, the reduction in supervision required by

mulesed sheep became even more important; the sooner they were done the better. Flies don't travel very far and on bigger properties people in effect breed their own flies (Jones, 1979).

Internal surveys, some involving District Agricultural Officers, indicated the numbers of mulesed sheep in Tasmania as 7% in 1970, 20% in 1973, 37% in 1975 and over 50% in 1980.

Current Situation of Mulesing in Tasmania

Many Tasmanian farmers continue to mules their own sheep, although contractors now do exist. In some cases they carry out the entire marking/mulesing operation, and in others simply come in to do the mulesing while the farm provides the rest of the labour. On Flinders Island in the 1980s a system evolved of contract mulesing of lambs at the time of their second inoculation, but most lambs are mulesed at marking in the spring.

Body strike

While it is acknowledged that crutch strike in unmulesed sheep makes up the majority of initial strikes, in some situations body strike can be devastating. Tasmania doesn't have the fly waves seen occasionally on the mainland. Fleece rot, bacterial stain, cotted, and mycotic dermatitis affected areas are usually the sites initially struck.

The most severe body strike I have seen was one autumn when dozens of damp hoggets developed an apricot coloured tip on their sides and back. Every affected sheep was struck and apparently it was caused by the (natural) yeast in the fleece reacting to the humidity.

With regard to body strike, most properties have paddocks where experience shows that sheep tend to not get struck. Often these are the windiest least sheltered paddocks. Where better to run the most susceptible mob, the weaners!

Tasmania has changed its flock structure from Polwarth and Corriedale towards fine and medium Merino. Also the growing seasons and especially the autumns have been dry and poor. With increasing constraints on the use of jetting chemicals, a wet summer and autumn could present a major management challenge.

Breech Strike

Perhaps it is an over-simplification, but if mulesed sheep are crutched mid-season and can be kept from scouring through the year, then crutch strike is unlikely to be a problem (Some culling at lambmarking may be needed).

Other Fly Control Management

Breeding plain-bodied Merinos is occasionally touted as a way of reducing flystrike, but with the crutch and body strikes found in Corriedales and Polwarths it is unlikely to have any major effect. Alternatively, care must be taken not to accept severe wool faults in the chase for heavier fleece weights.

Life Without Mulesing

Is it possible? Other countries manage!

It is difficult to see how woolgrowers would cope with dags, stains and flystrikes with the reduced labour force they now have available. Even if returns lifted to a level where more staff could be employed, experienced stockmen are just not available. The wool industry has not been profitable enough to maintain any level of consistency in training, employing and keeping staff through fluctuating seasons and markets over the last 30 years.

Quality assurance schemes such as Tasmanian Quality Wool (TQW) would find it very difficult to have sheep prepared for shearing free from dags and stains. Does anyone remember the piles of dags outside shearing sheds back in the pre-mulesing days?

Keep in mind too that in the future we may not have the ready availability of suitable chemicals for jetting whenever a crisis threatens.

Some countries have cheap labour, so regular checking for flystrike is still an option. Other countries produce inferior coarse wool so preparing for shearing is not too onerous. However, under our conditions, without some form of "mulesing" it is difficult to see Australia retaining a viable wool industry.

References

BAE (1972). "Blowflies and Parasites: Costs to the Sheep Industry 1969-70," Rep. No. Number 22. Bureau of Agricultural Economics, Canberra.

Bottomley, G. A., and Jones, A. L. (1983). Recent Observations in Tasmania in Fleece Characters and their Association with Susceptibility to Fleece Rot and Fly Strike. *In* "Second National Symposium, Sheep Blowfly and Flystrike in Sheep", pp. 401-405.

Joint Blowfly Committee (1933). The sheep blowfly problem in Australia. Vol. CSIR Pamphlet No 37. CSIRO, Melbourne.

Joint Blowfly Committee (1940). The Prevention and Treatment of Blowfly Strike in Sheep. Vol. Pamphlet No. 98, pp. 45. CSIR, Melbourne.

Jones, A. L. (1975). Adoption of Mulesing in the Campbell Town District. Post graduate Diploma, Hawkesbury Agricultural College, Hawkesbury.

Jones, A. L. (1979). Breech strike and body strike in the field and the extension problem. *In* "National Symposium on the Sheep Blowfly and Flystrike in Sheep", pp. 179-181. Department of Agriculture NSW, Sydney.

Jones, A. L., and McQuillan, P. B. (1983). Strike Incidence and Mulesing in Tasmania. *In* "Second National Symposium on the Sheep Blowfly and Fystrike in Sheep", pp. 24-26.

Lightfoot, R. J. (1964). Mules and Tailstrip Lambs at Marking Time. *Journal of Agriculture Western Australia* **5**.

McQuillan, P. B., and Jones, A. L. (1985). "Final Report Wool Research Trust Fund Project," Rep. No. K/5/1009. Tasmanian Department of Agriculture, Launceston.

McQuillan, P. B., Jones, A. L., and Williams, H. (1983). Recent studies on sheep blowflies (Diptera:Calliphoridae) in Tasmania. *In* "Second National Symposium on sheep blowfly and flystrike in sheep". N.S.W. Dept. Agriculture.

Reid, R. N. D., and Jones, A. L. (1976). The effectiveness of mulesing in flystrike control in Corriedale and crossbred sheep in Tasmania. *Australian Society of Animal Production* **11**: 185-188.

Ryan, A. F. (1954). The sheep blowfly problem in Tasmania. *Australian Veterinary Journal* **30**: 109-113.