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Lumpy wool – a skin disease of sheep

Animal Biosecurity Unit

Lumpy wool is a disease caused by the bacterium *Dermatophilus congolensis*. The bacteria infect the skin, and cause scab formation. Hard scab masses lift from the skin with the fleece as it grows, causing the characteristic 'lumpy wool'. The disease is also called mycotic dermatitis, or 'dermo'.

Lumpy wool causes loss of condition and deaths in affected mobs, reduced skin values, reduced wool value and additional handling and treatment costs.

Lumpy wool infection also attracts flies, making body strike more likely.

Lumpy wool reduces the efficiency of pour-on insecticides used for lice control. For these insecticides to be effective, they must be applied close to the skin, and lumpy wool can prevent close shearing.

Conditions favouring infection

Lumpy wool occurs mainly in wet environments. In New South Wales it is most troublesome in the winter rainfall areas of the Southern Tablelands and Southern Slopes.

Lumpy wool occurs in other districts if conditions are favourable for the spread and development of infection such as after heavy rain or flooding.

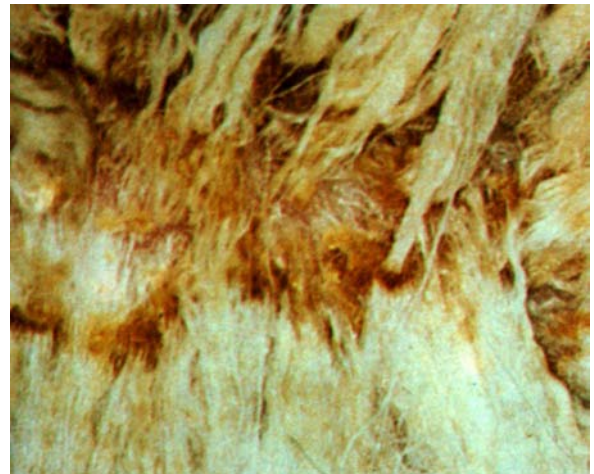
Method of spread

The bacteria which cause the disease lie dormant in small scabs on the ears, faces and udders of sheep. When these scabs get wet, the organism germinates, multiplies rapidly and spreads into wool follicles. It is transferred to other sheep by contact.

Wet weather coinciding with lambing allows the infection to spread rapidly from the ewe to newborn lambs. Spread of infection commonly occurs when a ewe cleans a newborn lamb, since fluids covering the lamb provide an excellent medium for the rapid growth of the organism.

Susceptibility

The wax layer on the skin normally protects sheep against this infection. In adults the wax layer is quite thick but in young sheep is thin and poorly developed. Young lambs are particularly susceptible because of this. If the wax layer is broken or poorly developed,



Lumpy wool infection causes intense skin inflammation and serum exudate at the skin surface, as seen above.

A later stage – this photograph shows clumping of the wool and wool discoloration due to associated infections.



lumpy wool infection of the skin can quickly occur. The bacteria invade the outer layers of skin and the walls of wool follicles. Intense skin inflammation follows, and serum, pus and dead skin repeatedly lift into the fleece in sheets to form the 'sandwiched' layers of hard, horny masses characteristic of this disease. Infection occurs in older sheep if the skin wax layer is depleted in some way. This occurs after shearing or dipping, or if sheep are dipped in long wool or jetted or dipped using excessive pump pressures. Skin injury from grass seed also exposes sheep to lumpy wool infection.

Young sheep (mainly hoggets) are particularly vulnerable to lumpy wool and resultant flystrike.

Medium and strong wool Merinos are more susceptible to lumpy wool than crossbreds, fine wool Merinos or British breeds of sheep.



Small scabs such as these on the ears may be the only sign of infection on the animal.

Effects of the disease

Older sheep

In affected flocks, many sheep only have small scabs on the face and ears. When wool-bearing skin becomes affected, hard horny masses often extend the length of the staple. These normally occur about the withers and along the back in places where moisture can pool. They are rare in belly wool. The infection is not always obvious from the external appearance of the animal. In the warmer months when sheep blowflies are active, the first indication of lumpy wool infection could be fly strike.

Lambs

In young lambs the infection may affect the whole body. A gummy substance covers the body and dries out into a horny crust which will crack as it ages. This can result in lambs dying from

septicaemia, or from starvation or misadventure because the lamb's movement is restricted.

When older lambs are affected they develop the typical lumpy wool as seen in adult sheep. Most will survive, but infection may persist for several months before healing.

Effects on fleece

When the skin heals, the normal fleece grows below the affected portion of the staple, and the wool may be able to be shorn normally. Some lumpy wool infections produce fleece staining. This is caused by invasion of other organisms, particularly those causing fleece-rot.

Treatment

Young sheep

Young animals are less resistant and more likely to benefit from treatment with antibiotics. See your veterinarian for advice on what to use.

Older sheep

Most affected older sheep recover spontaneously. Others only recover following shearing, when their fleeces dry out. In most flocks it is not worthwhile treating affected animals individually.

However, in valuable animals antibiotics such as oxytetracycline can be used to cure stubborn cases. This treatment stops serum exudation and allows the scab to grow away from the skin so that the sheep can be shorn normally. Sheep should be treated several weeks before shearing. The flock may have to be mustered and yarded to identify affected sheep. Mustering and yarding should be avoided in wet weather, however, as this assists in further spread of the disease.

Control

Lumpy wool infection is more likely when fleeces are wetted or when fleeces are slow to dry out. Thus some control will be achieved by changing husbandry procedures so that sheep are not in long wool during the rainy seasons.

Other recommendations for infected flocks are:

- Shear and dip young sheep first, before the area becomes contaminated from older sheep which may be carriers of the disease.
- Treat infected sheep with antibiotics four weeks prior to shearing.
- Shear affected sheep last.
- Cull stock that do not respond to treatment or which were affected as young animals.

- If treatment of long wool sheep is required for lice control, incorporate 0.5 per cent zinc sulphate solution, using a product registered for the purpose.
- In severe cases, spray or dip sheep within a few hours of shearing with 0.5 per cent zinc sulphate solution, using a product registered for the purpose.

Control relies on prevention through management. Some bloodlines are more susceptible than others and selection of resistant lines will reduce the susceptibility of the flock to infection. Successful control of lumpy wool infection may also help to reduce body strike.

Acknowledgments

This publication is based on an earlier factsheet by C Dent, former Veterinary Inspector with the Carcoar Pastures Protection Board.

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