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MYCOTIC DERMATITIS ("LUMPY WOOL") AND FLEECE ROT OF SHEEP

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DURING seasons of heavy rainfall, specimens of wool showing evidence of matting and sometimes discolouration are frequently received for examination. Two similar but quite distinct conditions have been recognised, namely mycotic dermatitis ("lumpy wool") and fleece rot, which not only damage the fleece and reduce its value, but also render affected sheep susceptible to blowfly strike.

Both of these diseases are dependent for their development upon the presence of moisture in the wool and are most likely to occur during seasons of excessive rainfall when the fleece is frequently soaked with water.

Both have been known to occur in Western Australia for many years but there can be little doubt that their incidence has increased with the development and stocking of properties in the wetter districts.

MYCOTIC DERMATITIS ("LUMPY WOOL")

This condition is caused by the fungus Actinomyces dermatonomus the spores of which are often present in the soil and may enter the wool with dust. During seasons of high rainfall, when conditions of moisture are favourable to the propagation of this organism, it grows in the wool and invades the underlying skin setting up a condition of inflammation or dermatitis accompanied by exudation and the formation of crusts or scabs which bind the wool fibres firmly together. As the condition develops, areas of hard matted wool make their appearance in the fleece. These are roughly circular in outline measuring from \( \frac{1}{4} \) in. to 1in. or more in diameter and extending from 1in. to about 3in. along the wool fibres giving rise to hard horn-like processes projecting upwards like fingers into the fleece.

To outward appearances the full-woolled sheep is usually normal and the condition may not be discovered until shearing has commenced. The lesions are usually confined to the back and sides of the animal but occasional cases have been observed where other portions of the body, including the head and limbs have become affected. In advanced cases, separate areas of the affected wool may become confluent and in consequence large areas of the skin become covered with hard masses of matted wool which is firmly adherent to the underlying skin leaving a raw bleeding surface if forcibly detached. With the
passage of time, the crusts tend to separate from the skin and are pushed outwards by a new growth of wool from beneath and may subsequently be shed.

Mycotic dermatitis is largely a disease of young sheep; older animals are much more resistant and the disease does not usually recur, so that an animal affected during one season is generally found to be free of the condition at the following shearing.

The disease has been observed chiefly amongst Merinos, but crossbreds are also susceptible and occasionally cases have been reported in the British breeds.

The general health and condition of affected sheep are not seriously impaired but considerable losses may be sustained from the reduction in the value of the damaged fleece. Furthermore the presence of the hard horn-like lumps in the wool renders shearing difficult and frequently impossible.

**Prevention.**

The fungus is destroyed by copper sulphate or zinc sulphate in a strength of 1 in 500. Dipping in these solutions, which may be prepared by the addition of 1 lb. of copper sulphate (bluestone) or of zinc sulphate to every 50 gallons of water may therefore be found effective as a preventive measure.

Dipping must be carried out in late autumn in order to obtain a satisfactory result but treatment of this kind at a time when ewes are forward in lamb and the flock is carrying six to nine months wool is unlikely to find favour with sheepmen.

Dipping off-shears in the spring cannot be recommended as a control measure since the spores of the fungus may continue to enter the fleece throughout the summer and autumn months and the disease may still occur. It should, however, be remembered that it is unlikely to assume serious proportions except in excessively wet years.

**FLEECE ROT**

Like mycotic dermatitis, fleece rot occurs under conditions of excessive rainfall. Prolonged wetting of the skin causes the outer layers to swell and soften and results in the development of a mild dermatitis (inflammation of the skin) accompanied by exudation and the formation of crusts at the base of the wool fibres which mats them together.
The examination of an affected sheep will reveal the presence of a greyish yellow band of matted wool ¼ in to ½ in. in width at a level in the fleece corresponding to the period when the inflammatory process occurred and should the condition recur with the onset of further rains, a second band may be observed but at a lower level closer to the skin. The wool covering the withers, back and sides is most commonly affected.

Young sheep six to 12 months old are more severely affected probably on account of the openness of the fleece which allows the penetration of moisture. Sheep of all breeds are susceptible but the condition has been frequently observed in Merinos.

The exudate on the skin, when associated with warmth and moisture provides an excellent medium for the growth of bacteria, some of which produce pigments which discolor the wool. Colours ranging from yellow, green, blue and red to brown, black and violet have been observed. The green discoloration commonly observed in this State is caused by the organism *Pseudomonas aeruginosa*. The colour is usually confined to the matted bands of wool but may be diffused throughout the greater portion of the staple extending almost to the tip.

**Cause.**

Recent research has shown that the occurrence of fleece rot is influenced by certain fleece characteristics the most important of which is the proportion of wax to wool. Wax has a waterproofing effect and helps to protect the fleece from wetting by rain: thus the high wax content of low-yielding fleeces increases resistance to penetration by rain so helping the sheep to resist fleece rot. High-yielding fleeces with a lower wax content on the other hand are more readily penetrated by water, and sheep with such fleeces may therefore be expected to be more susceptible to fleece rot.

The ability of the skin to withstand continuous wetting regardless of any protection that may be afforded by the wax content of the fleece is also a factor of considerable importance. The skin of some sheep is tolerant to continuous wetting and such sheep are resistant—they neither develop dermatitis nor suffer from fleece rot. The skin of susceptible sheep by contrast is intolerant to prolonged wetting—they develop dermatitis with characteristic lesions in the fleece.

Differences in susceptibility have been observed in certain families of Merino sheep and there is reason to believe that this variation in skin reaction is inherited. Recent observations have shown that faulty conformation such as "pinch" or "grip" behind the withers does not increase the susceptibility of sheep to fleece rot and that it is not a predisposing factor.

**Prevention.**

Shearing immediately prior to the onset of the rainy season when the disease is most likely to occur has been advocated as a means of preventing fleece rot but this procedure will rarely be found practicable in the fleece rot liable areas of Western Australia. A short fleece, while readily penetrated by rain, dries out very rapidly and seldom becomes affected by fleece rot.

**BLOWFLY STRIKE**

Sheep affected by both fleece rot and mycotic dermatitis are rendered susceptible to attack by blowflies. An odour attractive to the fly is produced and the moisture present is favourable to the development of the maggots. Extensive strikes involving the withers, back and sides may result and unless promptly treated these may cause the death of the animal. Treatment involves the removal of a considerable quantity of the most valuable part of the fleece. Sheep may of course be protected against body strike by spraying or jetting with D.D.T., B.H.C. or dieldrin in the recommended strengths.
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