

FOOT ABSCESS IN SHEEP

CAUSE:

- Foot abscess is an infectious condition of the foot caused by bacteria. Numerous bacteria species may be involved. The main causative bacteria is known as Sphaerophorus necrophorum (you can forget the name that you've seen it once!)
- Foot abscess bacteria are likely to invade the foot through small breaks in the skin, especially between the claws. Factors leading to such damage will of course promote infection. Some examples are prolonged moist conditions and grass seeds.
- Foot abscess can also arise from bruising within the foot - this leaves an area of poor circulation with rich nutrient for bacteria (the bruising leading to foot abscess is commonly seen in heavy sheep especially in the inside back toes. Stony ground, droving on hard surfaces or prolonged holding on concrete may also bruise feet.
- It is well known that rams are far more prone to foot abscess than ewes. This is due to a number of reasons including their weight and mating activity causing more damage to their feet. Rams do appear to have a weaker immune response to infection, and this is made worse by stress arising from their continual attempts to maintain dominance in the flock.

ASSESSMENT : TREAT OR CULL?

Foot abscess varies in degree – this depends on the bacteria involved, the immune status of the sheep, the environmental conditions and of course the time since infection. As the condition worsens, more and more scar tissue is laid down in the delicate tissues of the foot. This scar tissue is permanent. The scar tissue has poor circulation, and will actually disrupt normal foot function.

ONCE SCAR TISSUE HAS PROGRESSED TO THE POINT THAT THERE IS DEFORMITY TREATMENT WILL NOT RESTORE SOUNDNESS.

Scar tissue will harbour bacteria away from the circulation in tiny abscesses. This same scar tissue prevents the penetration of antibiotics and footbath chemicals. Progression of abscess will cease while treatment is carried out (most of the time), but the condition will flare again soon after treatment stops.

THEREFORE – ALL SHEEP WITH SIGNIFICANT SCARRING SHOULD BE CULLED.

TREATMENT

There are 2 main courses of treatment – antibiotics and footbathing.

1. Antibiotics. Procaine Penicillin – should be given at least daily, and at high dose rates. 10mls into the muscle daily for 5 to 14 days will be necessary in adult rams.
Long acting penicillins will not be useful as they do not maintain a high enough level for more than 2 days Anyway. Alternate antibiotics should be used after a swab for bacterial culture and antibiotic sensitivity is taken. Remember that it is far more likely that the non response is due to the reasons given above and not resistance!
2. Footbathing – Zinc Sulphate or Formalin
Zinc Sulphate Heptahydrate – 10 kg per 100 litres of water – has superior penetration of hoof and scar tissue
c/f. formalin – is not painful – it is easier to get the sheep to put their feet in it.

Formalin – available in a 40 % solution – mix 1 part solution to 19 parts water. – is irritant and therefore Painful – difficult to get sheep to walk or stand in it – is unpleasant to use – pungent smell and suspected carcinogen (cancer causing agent)

Formalin hardens the hoof and skin – preventative value?

Footbathing for the purpose of treating foot abscess is made more difficult for one main reason – access to the site of infection. Infected tissue is both deep within the foot, and also often well up above the hoof itself. Foot bathing must therefore be both long duration and deep! Zinc sulphate is by far the better choice for treatment. Walkthrough bathing is useless – the feet must stay immersed for at least 5 minutes.

PREVENTION:

Footbathing is perhaps the only preventative remedy available for foot abscess. In this case Formalin would be the chemical of choice, as it causes hardening of the tissues of the foot. Two or three repeat bathings of 5 minutes duration every 5 – 7 days would be needed. This should be performed some weeks before the expected outbreak time – (from experience).

Antibiotics form NO part of a preventative program – they act for a short period after injection and then are cleared from the system.

SALIENT POINTS:

- Foot abscess is infectious, bacteria entering the foot through damaged tissue
- Treatment should be EARLY or not at all – once scarring is moderate to severe treatment will fail
- Treatment should be aggressive – antibiotics at high doses plus footbathing.