

Control of Footrot in Sheep

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Scrapie, OPP and spider lambs seem to receive much attention from sheep producers and in popular sheep press. However, these diseases affect the average sheep producers' production efficiency much less than the old standby problems of footrot, abortive diseases, coccidia and internal parasites. Footrot is a serious problem in Indiana and surrounding states that has had a strong negative impact on our sheep industry.

Many of the long-time sheep producers in the state will make a statement that "footrot and dogs have driven more people out of the sheep business than any other reason". There is probably much truth to statements like this. Also, how many potential producers have we lost because of these problems? Furthermore, sheep suffering from footrot are less able to compete for feed, forages and are more susceptible to other diseases because of their weakened condition. How many ewes would have twins or triplets versus a single if they were free of footrot? How much more enjoyable and profitable would raising sheep be without footrot?

Causes of Footrot

Contagious footrot is caused by the synergistic action of two anaerobic bacteria. The bacteria Fusobacterium necrophorum is commonly present in soil, manure, etc. and colonizes the soft tissue between toes of the sheep. This is followed by penetration of the skin by a second bacteria (Bacterioides nodosus). Both bacteria have to be present to cause footrot, along with, proper environmental conditions. There are around 20 strains of B. Nodosus, with various infective capacity and severity of infection. When controlling footrot, it is the B. Nodosus organism that most of the attention is focused toward.

Environmental conditions conducive to outbreaks of footrot are warmth, moisture and an anaerobic (no oxygen) state. Conditions that commonly occur in Indiana in spring, fall, and to a lesser extent, winter.

Footrot is caused by the introduction of sheep into a flock carrying the disease, by carrier sheep that have a relapse or by contaminated premises. Since the B. Nodosus organism will live in soil for only 14 days, the major means of contamination is by sheep to sheep contact. Footrot bacteria can live in cracks, crevices, etc. of sheep's feet for an extended period of time, thus, a sheep can serve as a carrier of footrot without showing symptoms. This becomes a very important consideration when trying to prevent footrot.

Other conditions related to footrot are foot abscesses and foot scald or gald. Abscesses can be caused by puncture of sharp objects and are not always related to footrot. Foot scald is often a precursor to footrot.

Preventing Footrot

Based on the causes of footrot, the most logical, least expensive method of controlling footrot is to prevent its' introduction into clean flocks. Overwhelming, the most common cause of introducing footrot to a flock is by the introduction or co-mingling of new sheep to the farm. When buying sheep, they should be isolated from the rest of the flock and be treated as if they have footrot or other infective diseases.

Treating Footrot

There are now more techniques available to treat footrot than we have ever had available. Zinc sulfate, footrot vaccines and portable handling equipment have helped tremendously in the fight against footrot. However, fighting footrot is still a hard, long battle.

Since the footrot organism is anaerobic, the introduction of oxygen to its environment will help in eradicating it. Thus, it is important to keep sheep's hoofs trimmed. Elimination of overgrown hoof tissue will result in less mud and manure packing, which aids in environmental conditions conducive to footrot development.

When treating footrot, the first thing one should do is to separate the affected sheep from the sheep not showing symptoms. Next, one would need to trim feet on all sheep, whether infected or not. Be **careful** to not spread footrot from infected to non-infected sheep through hoof trimmers, pocket knives or other equipment. After foot trimming, the use of regular soaking in a footbath of a zinc sulfate solution (10% w/v) can greatly help in eradicating the disease. For best results, sheep should stand in a footbath for at least five minutes at least two to three times weekly. Also, when trimming feet, be sure to trim fairly severely on infected sheep to allow the zinc sulfate to penetrate the hoof area.

Vaccination of flocks with a history of footrot can help in prevention and in treatment of current cases. However, just because a sheep is vaccinated for footrot does not mean it is immune to infection. The vaccine does not cover all the strains of footrot. Producers with clean flocks can control footrot more economically by prevention rather than vaccination.

Antibiotics can also be used to help treat cases of footrot. Penicillin can be particularly effective on a short-term basis.

Be wary of carrier sheep in your flock. Cull severely infected sheep that do not respond to treatment. If the same few ewes or rams are always the first ones to show footrot symptoms, they are probably carriers and need to be culled.

There can be a genetic susceptibility to footrot. Research by Dr. Charles Parker at the Dubois, Idaho sheep research station has shown that some sheep are more susceptible to footrot than others. Also, there can be breed differences in susceptibility to footrot. Thus, families of sheep that have a resistance to footrot should be propagated, while,

susceptible families should be culled. Taking notes and referring to records can help in identification of these types.

Summary

To control footrot the following considerations can be helpful:

- 1) Prevent footrot by controlling exposure to outside animals.
- 2) If outbreak occurs, separate infected animals.
- 3) Use foot trimming and soaking in zinc sulfate solution.
- 4) Vaccinate if a persistent problem.
- 5) Cull chronic individuals or those that are suspected carriers.
- 6) Keep records on sheep susceptible to footrot.