Footrot in Sheep & Goats

Mike Neary
Extension Small Ruminant Specialist
Purdue University
Footrot Facts

• One of the most economically significant diseases in small ruminants
• Costly in terms of time and money
• Takes much effort to control
• Lowers production
• Causes producers to leave the business
• Not humane
• Entirely preventable
Footrot Facts

• What causes footrot?
• Presence of two anaerobic bacteria
  – *Fusobacterium necrophorum*
  – *Dichellobacter nodosus*
• Environmental conditions conducive to propagation
  – Warmth and moisture
  – Excludes oxygen
What Causes Footrot?

- *Fusobacterium necrophorum*
  - Normally present on the farm, mud, manure

- *Dichlelobacter nodosus*
  - When present causes footrot in combination with *F. necrophorum*
  - Many strains of *D. nodosus*
  - At least 20, same strains affect both sheep and goats
  - Sheep worse
  - Some strains very virulent, some strains cause a benign reaction
• Virulent *D. nodosus* secretes protease enzymes that digest the connective tissue at the horn area of the hoof
  • Causes underrunning of the hoof horn
• Benign footrot causes what is commonly referred to as scald
  • Can be caused by just *F. necrophorum* or by less virulent strains of *D. nodosus*
Prevention, Treatment, Eradication

- Prevention
- If *D. nodosus* is not present on a farm then don’t introduce it
- BY FAR, the most common means of footrot introduction is by introducing infected animals
- *D. nodosus* only lives in environment for about 14 days
- *D. nodosus* can live in sheep & goat feet for extended periods- asymptomatic
Prevention

• Only buy or lease breeding stock from footrot free operations
• Try not to comingle
• Quarantine
• Trim feet, soak in footbath
• Don’t share trailers and don’t bring animals into facilities that have had infected animals for last 14 days
Treatment of footrot

• Footrot present, just want to keep it controlled to a manageable level
• Trim hooves as needed to prevent overgrowth
• Regular footbathing
• Zinc sulfate best- 10% wt/vol, copper sulfate next best- individual treatment with Copper sulfate
• Antibiotic treatment as needed
• Vaccination
Eradication of Footrot

• Long, hard job, will take time and persistence
• If small flock/herd may want to consider depopulating, waiting 2 to 3 weeks and restocking with clean stock
• If not feasible then trim feet and check all animals in the herd
• Separate any animal with footrot or scald
• Run the “clean” animals through footbath and segregate to a pasture that has been empty for 14 days
Eradication of Footrot

- Any “clean” animal that starts to show symptoms—move in with infected group
- Infected group—treat with antibiotics, keep feet trimmed, foot **soak**
- Soak in Zn Sulfate 3 to 4 times per week for 20 to 30 minutes per time
- As animals in the infected group become asymptomatic remove them to a 3rd location that has been vacant for 14 days
Eradication of Footrot

• Continue to treat those in the infected group
• Eventually you’ll get down to a few that can’t be cleaned up- cull them
• Every flock with footrot has a 5 to 10% carrier rate that spreads the disease whenever environmental conditions are right
• Surveillance phase- catch any limpers quickly and segregate
Genetic Susceptibility

• Some animals are more susceptible to footrot and some more resistant
• May be hoof shape, toe length, skin thickness, rate of hoof growth
• DNA test available in New Zealand that classifies sheep as to susceptibility status to footrot
• Keep records
Summary

• Footrot is costly disease
• Prevent if at all possible- don’t buy it
• Quarantine new animals- D. nodosus lives in cracks of hooves
• Treat introduced animals like they have footrot
• Keep feet trimmed and area dry
• Foot soaking is better than footbathing
Summary

• Eradication is difficult, but possible
• Be willing to cull chronics
• Infected flocks have carrier animals
• Genetic propensity to footrot
• Don’t sell footrot exposed animals to other breeders