Contagious footrot is a bacterial infection common in sheep and goats that is caused by bacteria that live in the soil. The most commonly associated bacteria with ovine/caprine footrot are *Fusobacterium necrophorum* and *Dichelobacter nodosus*.

With the support of The Canadian Goat Society, we conducted a national survey to assess the importance of footrot disease in the sheep and goat livestock industries. We also assessed producer, producer organizations, and veterinarian willingness to support research for a Canadian-based footrot bacterin vaccine that would incorporate recent Canadian *F. necrophorum* and *D. nodosus* isolates.

**SURVEY: 12 SMALL RUMINANT VETERINARIANS RESPONDED (10 SHEEP; 2 GOAT)**

What province(s) does your veterinary practice provide services to sheep/goat producers?

<table>
<thead>
<tr>
<th>Province</th>
<th>% Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alberta</td>
<td>70%</td>
</tr>
<tr>
<td>British Columbia</td>
<td>30%</td>
</tr>
<tr>
<td>Manitoba</td>
<td>10%</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>5%</td>
</tr>
<tr>
<td>Ontario</td>
<td>50%</td>
</tr>
<tr>
<td>Quebec</td>
<td>30%</td>
</tr>
<tr>
<td>Atlantic provinces</td>
<td>20%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Province</th>
<th>% Farm Services Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheep</td>
<td>200</td>
</tr>
<tr>
<td>Goat</td>
<td>50</td>
</tr>
</tbody>
</table>

Sheep & Goat Lameness
Survey of Small Ruminant Veterinarians
ESTIMATED 1ST PULL TREATMENT RATES FOR FOOTROT IN SHEEP

- Ewes: 5.0%
- Rams: 2.7%
- Pre-weaned lambs: 1.3%
- Post-weaned lambs: 3.7%
- 44% of sheep vets and 100% of goat vets didn’t know

TREATMENT FOR FOOTROT

- Sheep: 70% uncommon; 30% common (between 5-20%)
- Goats: 100% uncommon

ESTIMATED CULLING RATE FROM FOOTROT IN SHEEP: 78% OF VETS DID NOT KNOW
MOST IMPORTANT METHODS ACCORDING TO VETS TO PREVENT/TREAT/CONTROL FOOTROT:

How effective do you think antimicrobials are to treat footrot in sheep?

How effective do you think antimicrobials are to treat footrot in goats?
What classes of antimicrobials do you prescribe to treat footrot in sheep?

- Penicillin: 90%
- Tetracycline: 30%
- Sulfonamides: 70%
- Macrolides: 50%
- Fluoroquinolones: 10%
- Other: 5%

What classes of antimicrobials do you prescribe to treat footrot in goats?

- Penicillin: 80%
- Tetracycline: 20%
- Sulfonamides: 60%
- Macrolides: 40%
- Fluoroquinolones: 20%
- Other: 10%

How common are outbreaks of footrot in your clients' sheep flocks?

- Never: 10%
- Occasional (1-2 per year): 50%
- Frequent (>2 per year): 30%
- Highly variable amongst clients' sheep flocks: 10%
- Do not know: 5%

How common are outbreaks of footrot in your clients' goat herds?

- Never: 50%
- Occasional (1-2 per year): 30%
- Frequent (>2 per year): 20%
- Highly variable amongst clients' goat herds: 5%
- Do not know: 5%
Do you observe footrot more commonly in older ewes/rams (>3 years) than in younger ewes/rams?

Do you observe footrot more commonly in older does/bucks (>3 years) than younger does/bucks?

Do you observe more infectious footrot in dairy sheep than meat sheep?

Do you observe more infectious footrot in dairy goats than meat goats?
When, in days post-weaning, is footrot most observed in feeder lambs?

When, in days post-weaning, is footrot most observed in feeder goats?

What season do you most commonly observe footrot issues in your clients’ sheep flocks?

What season do you most commonly observe footrot issues in your clients’ goat herds?
MOST IMPORTANT RISK FACTORS FOR FOOTROT AS OBSERVED BY VETS:

Sheep  Goats

Treatment costs
Labor costs
Mortality losses
Culling losses
Performance losses
Discarded milk due to drug withdrawal periods

Sheep  Goats
What frequency do you submit samples to a diagnostic lab from cases of lameness in your sheep flocks to determine the cause of the lameness?

![Graph showing percentage of responses for different submission frequencies.]

What frequency do you submit samples to a diagnostic lab from cases of lameness in your goat herds to determine the cause of the lameness?

![Graph showing percentage of responses for different submission frequencies.]

If you submitted samples to a laboratory for culture in the last year, what infectious organisms were cultured and determined to be pathogenic in cases of footrot in the sheep from your clients’ flocks?

![Graph showing percentage of responses for different infectious organisms.]

If you submitted samples to a laboratory last year, what infectious organisms were cultured and determined to be pathogenic in cases of footrot in the goats from your clients’ herds?

![Graph showing percentage of responses for different infectious organisms.]

- *Fusobacterium necrophorum*
- *Bacteroides nodosus*
- *Treponema spp.*
- *Trueperella pyogenes*
- Have not submitted cultures
Have you ever recommended an autogenous vaccine to prevent/control footrot in your clients’ sheep flocks?

If yes, do you believe the autogenous vaccine reduced disease rates for footrot in your clients’ sheep flocks?

No goat vets recommended an autogenous vaccine or bovine footrot vaccine to control footrot in goat herds.

Have you ever recommended a bovine footrot vaccine e.g., Fusogard®, to prevent/control footrot in your clients’ sheep flocks?

If yes, do you believe the bovine Fusogard® vaccine reduced disease rates for footrot in your clients’ sheep flocks?
WHAT IS THE MOST IMPORTANT ATTRIBUTE OF AN OVINE/CAPRINE FOOTROT VACCINE:

- Efficacious
- Safe
- Single dose
- Low volume
- Subcutaneous route of injection
- Long duration of immunity
- Short meat withdrawal
- Short milk withdrawal
- Cost effective

What is the maximum annual price per head that would be affordable for a sheep producer to pay for a footrot vaccine?

- < $1 annual vaccine regime (single or double dose)
- $1 to $2
- $2 to $3
- $3 to $4
- would depend on the vaccine's efficacy, but would need to be at least a cost break-even

What is the maximum annual price per head that would be affordable for a goat producer to pay for a footrot vaccine?

- < $1 annual vaccine regime (single or double dose)
- $1 to $2
- $2 to $3
- $3 to $4
- would depend on the vaccine's efficacy, but would need to be at least a cost break-even
What size of dosage vials of footrot vaccine would work best for sheep producers based on the size of their flocks?

- Single dose: 0%
- 10 doses: 45%
- 50 doses: 15%
- Mixture of 10 dose and 50 dose vials: 40%

What size of dosage vials of footrot vaccine would work best for goat producers based on the size of their herds?

- Single dose: 5%
- 10 doses: 50%
- 50 doses: 40%
- Mixture of 10 dose and 50 dose vials: 5%

TOP FACTOR THAT WOULD LIMIT PRODUCER USE OF FOOTROT VACCINE:

- Don't believe vaccines are effective: 70%
- Vaccine price too high: 60%
- Frequency of revaccinating too often: 45%
- Lack of labor to vaccinate: 50%
- Lack of facilities to vaccinate: 40%
- Vaccine safety concerns: 50%
- Producer perceives low risk of footrot in flock/ herd: 60%
If a Canadian-made footrot vaccine for sheep and goats were available and proven efficacious, would you recommend it?

- yes: 100%
- no: 0%
- not sure: 0%
- not sure (describe): 0%

If a Canadian-made footrot vaccine for sheep and goats were available and proven efficacious, would you recommend it?

- yes: 50%
- no: 30%
- not sure: 20%

PROJECT TEAM:
- Dr. Jose Perez-Casal
- Dr. Joyce Van Donkersgoed
- Dr. Karen Schwartzkopf-Genswein

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