Caused by a protozoan, *Trichomonas foetus*. Trich lives in the cow’s reproductive tract & on the surface of the bull’s penis & prepuce.
Trichomoniasis - the disease

- Results in a reduced calf crop - 5-10% reduction to 30 to 50% reduction
  - infertility, abortions, pyometras (uterine infections)
- Similar disease to Vibrio – both are venereal diseases = spread during breeding
Signs:
• No visible signs.
• Too many open cows.
• Late abortions.
• Extended calving season.
• Pyometra.

Parsonson et al 1976
Transmission

- 95% of the cows bred to an infected bull become infected.
Trich in the cow

- The cow aborts after 60 days.
- She may then cycle 3 to 5 times and infects any bull that breed her.
- Cow develops immunity in 3 to 5 months, re-breeds - carries a calf to term.
- Calving season extended.
- A few cows may remain infected and still carry trich from one year to the next.
- Immunity short lived, < 15 months; cow subject to re-infection.

Clark et al. 1983
Transmission
95% of bulls that breed an infected cow pick up the organism. Not all become chronically infected.
Trich in the bull

Infection

Bull pathogenesis

- *Trich* is restricted to surface of penis & prepuce.
- No exposure to immune system

(Parsonson et al 1977)
The bull is the vector of the disease.

- Most chronically infected bulls are four years of age or older.
- Some bulls 1 to 3 years of age can be chronically infected.

Clark et al 1974
Diagnosis

Tests cows- (not good)

- Ten to thirty days post breeding.
- Collect vaginal mucus.
- Test 5 times because test sensitivity is ~80%.

BonDurant 1985
Diagnosis

Test bulls:

- one week post breeding.
- Gather bulls from pasture.
- Collect scraping from prepuce
- Samples are sent to lab for PCR testing
- Results available in 10-14 days.
• Sample collection and handling is of the utmost importance
• All testing must be done by veterinarians certified by the NMLB to do Trich testing
• Contact the NMLB for a current list of certified veterinarians at:  www.nmlbonline.com
Methods of detection

- Culture- was the gold standard- is only about 80% accurate
- Molecular methods- Genetic based tests
  - Standard Polymerase chain reaction (PCR)
  - Real-time PCR (QPCR)
- After testing all bulls, if one bull is positive, then others must be tested 2 more times before they can be turned out.
- One infected animal equals an infected herd.
Trichomoniasis

Control:

• Test & remove infected bulls.
• Keep bulls off cows for 5 months
• Shorten breeding season – 60 days
• Cull open cows ?.
• Use bulls 4 yrs. of age or younger.
• Don’t lease or borrow bulls.
• Repair fences.
• Vaccinate.
Economic Losses with Trich

- Direct loss of positive bulls
- Costs of testing and feeding bulls
- Cost of replacing positive bulls
- More open cows
- Prolonged calving season - lower weaning weights
Table 2 Gross returns, feed and variable costs for each scenario

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Gross Revenue</th>
<th>Feed Costs</th>
<th>Variable Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>402.49</td>
<td>54.41</td>
<td>60.71</td>
</tr>
<tr>
<td>Two</td>
<td>312.09</td>
<td>55.29</td>
<td>77.01</td>
</tr>
<tr>
<td>Three</td>
<td>293.71</td>
<td>55.01</td>
<td>197.56</td>
</tr>
<tr>
<td>Scenario</td>
<td>Net Return/ cow exposed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herd with no Trich</td>
<td>$ 72.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herd with early Trich</td>
<td>$ -35.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herd with chronic Trich</td>
<td>$ -185.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cooperative Extension Service
Western states with Trich rules
Trichomoniasis

States reporting cases of Trichomoniasis

- Larger herd size.
- More common grazing.
# Trichomoniasis in Arizona

<table>
<thead>
<tr>
<th>Year</th>
<th>Total tested</th>
<th># positive</th>
<th>% positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>403</td>
<td>15</td>
<td>3.7%</td>
</tr>
<tr>
<td>2003</td>
<td>846</td>
<td>5</td>
<td>0.5%</td>
</tr>
<tr>
<td>2004</td>
<td>2560</td>
<td>120</td>
<td>4.6%</td>
</tr>
<tr>
<td>2005</td>
<td>940</td>
<td>37</td>
<td>3.9%</td>
</tr>
<tr>
<td>2006</td>
<td>3138</td>
<td>109</td>
<td>3.4%</td>
</tr>
<tr>
<td>2007</td>
<td>2764</td>
<td>40</td>
<td>1.4%</td>
</tr>
<tr>
<td>2008</td>
<td>738</td>
<td>53</td>
<td>7.2%</td>
</tr>
<tr>
<td>2009</td>
<td>2711</td>
<td>54</td>
<td>2.0%</td>
</tr>
</tbody>
</table>
Trichomoniasis in Texas

• In 2009, samples were submitted from 150 counties
• 69 counties had at least one positive bull
• Incidence ranged from 0.0% to 23.3%
• The county with 23.3% had 98 positive bulls on 420 samples
<table>
<thead>
<tr>
<th>Year</th>
<th>Total tested</th>
<th>pos</th>
<th>neg</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>781</td>
<td>51</td>
<td>730</td>
<td>6.5</td>
</tr>
<tr>
<td>2006</td>
<td>4545</td>
<td>287</td>
<td>4258</td>
<td>6.3</td>
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<tr>
<td>2007</td>
<td>6685</td>
<td>137</td>
<td>6548</td>
<td>2.0</td>
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<tr>
<td>2008</td>
<td>7946</td>
<td>232</td>
<td>7714</td>
<td>2.9</td>
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<tr>
<td>2009</td>
<td>8558</td>
<td>223</td>
<td>8335</td>
<td>2.6</td>
</tr>
</tbody>
</table>
What to do in the spring

- Test bulls prior to turnout
- Have new bulls tested before turning out
- Only virgin bulls from tested herds should be test exempt
- Vaccinate susceptible cows if positive or neighbor to a positive premise
What to do in the fall

- All bulls should be tested at end of breeding season
- Pull bulls off of cows and leave off for 5 mos
- We must identify where the disease exists
- Try to get bulls tested prior to shipping cull cows
- Be very careful of additions to herd
Clean Herds:

- Herds are presumed clean unless an animal tests positive for Trich
- Females can move unrestricted
- Virgin bulls less than 12 mos. can move unrestricted
- Bulls 12 months or older must have an official negative test prior to being sold
- Mature bulls must have a current negative test or sold for slaughter only
Grazing Associations

- Multiple use permits
- ALL bulls going onto an allotment must be trich tested negative prior to turnout
- All bulls on community allotments must be tested annually
Positive Herds:

- All positive bulls must be “/ N ” branded by livestock inspector prior to movement
- All bulls must have **three** negative tests prior to turnout
- All open cows and cows bred less than 120 days must be “/ N” branded and sold as slaughter only
- Bred cows must be certified more than 120 days pregnant by a Veterinarian or by approved sale barn Technician to be sold
- Brand Inspector must be involved in all movement of breeding age cattle
- **HERD IS QUARANTINED**
Changes in Trich Regulations

- All bulls >12 mo must have an official negative test to be sold for breeding purposes
- All bulls > 12 mo must have an official negative test within 30 days of import
- All positive premises must have a Disease Management Plan approved by NMLB
- A Disease Management plan must be enacted within 30 days after notification of positive status
• A positive premise must have three successive negative bull battery tests to be released from quarantine. The third test must be a post-breeding test after at least seven days sexual rest
• Bulls must have two negative tests prior to turnout
• All ranches with exposure to a positive premise may be required to do a single bull battery test
QUESTIONS ??

- THANKS FOR LISTENING !!!!
The End