An Eye Test for Barber Pole Worm – *Haemonchus contortus*

UC Davis Sheep Day
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Mendocino & Lake Counties

Famacha Eye Color Test
Objectives

• What is FAMACHA?
• Who developed it?
• Where to use it?
• Why use it?
• How to use it?
• When to use?
What is the FAMACHA Test?

- Plastic card with 5 high-resolution photos
- Eyes of infected goats and sheep
- Shade of redness inside eyelids
- Different stages of Barber Pole worm infection
- Numerically designates each stage of anemia
Who Developed FAMACHA

- Francois “Fafa” Malan
  - South African livestock parasitologist
- Joan Burke (ARS)
- Southern Consortium for Small Ruminant Parasite Control (SCSRPC)
- Resistance to anthelmintics
Where to Use FAMACHA

- Only used for Barber Pole Worm infestation
- Blood-sucking parasite
- Infects both goats & sheep
- Rapid assessment
- Prior to fecal egg counts
Barber Pole Worm

a.k.a. Haemonchus contortus

- Most deadly internal parasite of sheep & goats
- Causes severe anemia
- Symptoms
  - Stamina loss
  - Pale gums
  - Conjunctiva
  - Bottle-jaw
  - >10,000 epg
- Production loss
  - 500-2000 epg
  - Reduced weight gain - 30%
  - Reduced milk production – 30%
  - Reduced growth
  - Reduced wool growth – 10%
Life Cycle

- 21 days to complete
- L3 stage ingested from grass
- Travel to abomasum
  - Two paths
    - Hypobiosis – arrested state
    - Molt to L4 then to adults
  - Adults lay eggs ~ 14 days
    - 5,000 per day
- Eggs expelled via feces
  - Larvae hatch from egg emerge from pellets
  - Move through L1, L2, to L3
  - L3 leave pellet and climb up grass blade
  - Warm, wet conditions optimal
### Blood Loss/Day X Egg Count

<table>
<thead>
<tr>
<th>Worm egg count (epg)</th>
<th>Est. Worm numbers</th>
<th>Est. blood loss/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>20</td>
<td>1ml</td>
</tr>
<tr>
<td>500</td>
<td>100</td>
<td>5ml</td>
</tr>
<tr>
<td>1000</td>
<td>200</td>
<td>10ml</td>
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<tr>
<td>2000</td>
<td>400</td>
<td>20ml</td>
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<tr>
<td>3000</td>
<td>600</td>
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<tr>
<td>5000</td>
<td>1000</td>
<td>50ml</td>
</tr>
</tbody>
</table>
Why Use FAMACHA?

✶ Becoming resistant to dewormers
✶ Selectively deworming decreases development of resistance
✶ Resistance and resilience are moderately heritable
✶ Reduces costs by treating only those animals that need it
✶ Culling animals creates a flock that is more resistant and resilient
✶ Treatment is done before symptoms become severe
✶ Done during other management – e.g. condition scoring
How to Use FAMACHA

- Pull open the eyelid
- Compare with photo chart
- Record score
  - 1 = Optimal - No dose ✓
  - 2 = Acceptable – No dose ✓
  - 3 = Borderline – Maybe ?
  - 4 = Dangerous – Dose !
  - 5 = Fatal – Dose ☠
- Treat accordingly
- Rescore in a week or so
- Use in conjunction with fecal egg counts
  - Other diseases cause anemia
  - Sometimes eye membranes appear redder than expected
  - Critical to use an effective dewormer
- Always use the chart not memory
- Protect card from light when not in use
- Replace the card after 1 year of use
When to Use FAMACHA

- Spring or several weeks prior to lambing/kidding
  - Every 2-3 weeks
- During warm wet weather
  - More frequently may be needed, even weekly
- Ewes & does have decreased immunity to worms during periparturient period
- Refer to the FAMACHA guide during inspections
  - Don’t rely on memory from previous exams
  - Don’t just use the card – the guide offers more directions for making treatment decisions
Great, I want one!

• For Inquiries and Orders:

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