Parasite Focus - Haemonchus Contortus

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INTRODUCTION

• Haemonchus Contortus (also known as the Barber’s pole worm) is a gastrointestinal parasite infecting small ruminants worldwide and is considered the most pathogenic nematode.

LIFE CYCLE

• H. contortus adult female worms lay eggs, which are shed in the feces and hatch on pasture into first-stage larvae (L1)
• L1 develop and molt on the pasture into L2, both stages feeding on the fecal bacteria
• L2 molt into L3, the infective and non-feeding stage, which retains the L2 cuticle as a protective sheath
• L3 are consumed by host, cuticle is shed, migrating to the abomasum and attaching to the abomasal mucosal walls
• L3 develop and after 2-4 days, transition to L4 and then as immature adult worms
• Female H. contortus are capable of laying 5,000-10,000 eggs per day, beginning after 12-15 days
• Life cycle – egg to mature adults = 21 days
It is important to note the life cycle of H. contortus

DIAGNOSIS AND TREATMENT

• Parasitic infection can be classified as hyperacute, acute, or chronic:
  • Hyperacute: presents with few to no symptoms, can cause death within 1 week
  • Acute: presents with anemia, submandibular subcutaneous edema ("bottle jaw"); chronic infection, and weight loss
  • Chronic: presents with subclinical signs such as edema in the abomasum, which leads to inflammation of infected tissues, increased gastric secretions, and tissue damage
• Diagnostics include fecal flotation, FAMACHA© eye scoring, and PCV (packed cell volume) testing:
  • FAMACHA© eye scoring is important for estimating anemia and is used to make treatment decisions
  • PCV is more invasive as it requires a blood sample
• Adult worms can consume approximately 0.05 mL of blood daily
• < 200 eggs per gram of feces = no treatment necessary
• 200-400 eggs per gram of feces = treatment necessary
• > 400 eggs per gram of feces = heavy infection

ECONOMIC IMPACT

Effects of intestinal parasites on mortality and economic loss in Ohio

<table>
<thead>
<tr>
<th></th>
<th>Sheep</th>
<th>Lamb</th>
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<tbody>
<tr>
<td>Total Deaths (2018)</td>
<td>6,000</td>
<td>12,000</td>
</tr>
<tr>
<td>-Due to intestinal parasites</td>
<td>720</td>
<td>1,440</td>
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<td>Expected economic impact</td>
<td>$161,290</td>
<td>$324,000</td>
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<tr>
<td>Total Deaths (2014)</td>
<td>6,036</td>
<td>10,025</td>
</tr>
<tr>
<td>-Due to intestinal parasites</td>
<td>714</td>
<td>1,158</td>
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</table>
• Estimated economic loss in 2018 is based upon the percent of sheep and lambs lost due to intestinal parasitism in 2014
• Cost of lamb and sheep was estimated at $224 per head
• Overall, estimated loss for Ohio producers in 2018 was $485,000

MANAGEMENT

Strategies to prevent and control:
• Judicious use of anthelmintics:
  • The most common cause of anthelmintic (dewormer) resistance is over or under dosing due to the lack of not weighing livestock

CONCLUSION

• H. contortus is one of the most common parasite found in small ruminant operations
• As parasitic resistance increases, there is a demand to find an effective way to treat and/or manage parasites
• Strict management practices should be kept in order to prevent infection
• There is no silver bullet to manage parasitic infection, therefore, implementing two or more management practices is the key to success

BIBLIOGRAPHY


PICTURES

2. https://www.wormx.info/famacha

ACKNOWLEDGEMENTS

Thank you to Dr. Cindy Campbell for fostering our love of the barber pole worm.