<table>
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<th>Animal Group(s) Affected</th>
<th>Transmission</th>
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<td>Birds; bovids; camels; cervids; equids; giraffe; suidae; rabbits; rodents; primates</td>
<td>Fecal-oral with a direct life cycle</td>
<td>Heavy burdens cause weight loss, lethargy, anorexia, watery diarrhea, weakness, anemia, and death</td>
<td>Low level infections are usually asymptomatic. Young animals more severely affected.</td>
<td>Benzimidazoles or macrocyclic lactones. Alternatives to anthelmintics have been investigated in artiodactylids including cooper oxide, wire particles and nematophagous fungus (environmental control)</td>
<td>Pasture rotation, appropriate antihelmintic usage. Immunity develops as animals age</td>
<td>Some species are zoonotic.</td>
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**Fact Sheet compiled by:** Christopher S. Hanley  
**Sheet completed on:** 29 December 2010; updated on 1 April 2013  
**Fact Sheet Reviewed by:** Thomas Craig; Diedre Fontenot  

**Susceptible animal groups:** Birds, bovids, camelids, cervids, equids, giraffe, suidae, rabbits, rodents, and, as accidental hosts, primates  

**Causative organism:** Any of the 35+ species of nematodes of the genus *Trichostrongylus*  

**Zoonotic potential:** Yes, although not all species are zoonotic. Most human infections are asymptomatic or associated with mild clinical signs as all primates are accidental hosts. Abdominal pain, rashes, nausea, diarrhea, flatulence, dizziness, generalized fatigue, and malaise all possible.  

**Distribution:** Worldwide  

**Incubation period:** Under ideal conditions, the third stage infective larvae develop within 7-9 days. Depending on the species of *Trichostrongylus*, prepatency is generally 15-23 days but can be delayed for prolonged periods. Some species of *Trichostrongylus* (*T. colubriformis, T. tenuis*) can undergo winter arrest in certain geographic areas. Soil moisture, climate warming, and pasture loads can all play a role in the incubation and infectivity.  

**Clinical signs:** Most infections are asymptomatic or only have mild signs. Weakness and death can occur with heavy worm burdens, especially in young animals. Wasting, black or watery diarrhea, depression, anorexia, swollen mucosa, and anemia can all occur, especially in chronic infections. Birds may have the above as well as decreased egg production. Because of the great variability in host, and organ invaded each species of *Trichostrongylus* must be evaluated in the specific circumstance of presentation  

**Post mortem, gross, or histologic findings:** Depending on the species of *Trichostrongylus adult* worms may be seen in the small intestine, abomasum of ruminants, stomach of monogastrics or ceca of birds. They are very fine parasites and if they are removed from the organs and placed against a dark background, they look like small hairs. Mucosal congestion, inflammation, and thickening may be present.
**TRICHOSTRONGYLOSIS**

Gastric infection may produce an edematous stomach or abomasum. Histologically, villus atrophy, enterocyte destruction, mucosal ulceration, capillary erosion, blood loss, mucosal edema, fibrinonecrotic membranes, and secondary bacterial infection may be seen. Gastric infection may produce gastric edema and hyperplasia.

**Diagnosis:** Eggs can be found on fecal parasite evaluation or parasites can be identified on histologic evaluation of the gastrointestinal tract.

**Material required for laboratory analysis:** Feces or adult worms

**Relevant diagnostic laboratories:** Any laboratory that can provide endoparasite identification. Eggs of *Trichostrongylus* spp. cannot be reliably differentiated from those of most other Trichostrongyloidea or Strongyloidea. Egg quantification (fecal egg count) is recommended in hoofstock species to determine whether treatment is warranted.

**Treatment:** Benzimidazoles or macrocyclic lactones. Alternatives to anthelmintics have been investigated in artiodactylids including cooper oxide wire particles and nematophagous fungus (environmental control).

**Prevention and control:** Proper sanitation, pasture rotation, appropriate anthelmintic usage. Immunity with age develops in some species although this has not been proven in hoofstock species.

**Suggested disinfectant for housing facilities:** None

**Notification:** None

**Measures required under the Animal Disease Surveillance Plan:** None

**Measures required for introducing animals to infected animal:** In artiodactylids, fecal egg counts are recommended before releasing new animals on pasture to determine current level of infection prior to introduction. Pasture infection levels can also be considered (pasture larval counts) as well as current infection levels in animals to make risk/benefit assessment for treatment prior to pasture introduction. *In vitro* sensitivities can be performed to determine level of resistance to classes of anthelmintics prior to treatment. If *in vitro* sensitivity testing cannot be performed, then treatment of newly infected animals with a cocktail of anthelmintics with at least two drugs in different families at full dose using accurate animal body weights may eliminate previously acquired anthelmintic resistant worms.

**Conditions for restoring disease-free status after an outbreak:** Directed treatment at clinically affected animals. Low levels of parasitism are common and may aid in the development of immunity.

**Experts who may be consulted:**

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