

# UNL Extension: Acreage Insights

## Acreage eNews-December 2013

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### Fall Marks the Annual Cycle of Parasite Control in Horses

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Parasite resistance to anthelmintics (dewormers) is widespread and traditional frequent deworming is no longer a viable option in parasite control. Deworming schedules should be based on seasonal patterns of parasite transmission and an individual horse's susceptibility to parasites. Small strongyles pose the greatest threat to adult horses and the risk of transmission is highest from September through March in Nebraska and throughout the southeast. To minimize parasite resistance, an individual horse's susceptibility to parasite infection should be identified through performing fecal egg counts (FEC) of the manure.

### Life Cycle: Small Strongyles

Transmission of strongyles is dependent on the climate. Adult worms lay their eggs in the large intestine and eggs are shed through the manure to the environment where they hatch into larvae if conditions are favorable (43 to 85oF). The larvae survive under extreme cold and freezing, but they die when temperatures exceed 90oF. Pastures provide the ideal environment for larvae so transmission most commonly occurs in grazing horses.

### Pasture Management Tips

- Avoid high stocking rates (2 acres per horse is minimum requirement)
- Avoid overgrazing (Larvae are found on lowest part of plants)
- Utilize rotational grazing
- Drag or harrow ONLY in the summer and restrict horses access for several weeks following
- Group horses by age (young horses housed separately from older horses).
- House new horses separately for 2 weeks and until FEC is performed

### Parasite Resistance to Dewormers

Parasite resistance to anthelmintics (dewormers) is widespread. Parasite resistance has been documented for all three major classes of anthelmintics (Craig et al. 2007; Lyons et al, 2007). More than 95 percent of horse herds examined in the southeast U.S. were reported to have small strongyle populations resistant to benzimidazoles, and almost 50 percent of these herds were also resistant to pyrimidines. Localized resistance of ascarids to macrocyclic lactones has also been identified on some farms (Craig et al., 2007; Reinemeyer, 2009). To minimize parasite resistance, an individual horse’s susceptibility parasite infection should be identified through performing fecal egg counts (FEC). The effectiveness of each class of anthelmintic should be identified through fecal egg count reduction testing (FECRT).

### FEC and FECRT: Evidence Based Parasite Control

Fecal egg counts (FEC) are a measurement of the number of parasite eggs per gram (EPG) of manure and are also used to identify the type(s) of parasites affecting the horse. Individual horses differ in their susceptibility to parasites and they are classified based on their FEC as low contaminators (less than 200 EPG), moderate contaminators 9200 to 500 EPG), or high contaminators (more than 500 EPG). The classification of an individual horse usually remains the same from year to year; so fewer FECs are required after the first year. A second FEC is required after deworming to determine if the anthelmintic used was successful. Fecal Egg Count Reduction Testing (FECRT) is the process of performing FEC before and after treatment with a dewormer and the effectiveness of the dewormer is determined by the percent egg reduction. Equine veterinarians routinely perform FEC for \$10 to \$30 per test.

### Developing a Deworming Program

All horses should be dewormed at least two times per year at six-month intervals, usually in the Autumn and Spring when environmental conditions favor parasite transmission. Additional treatments will depend on the horses initial FEC (Table 1). Using products that are effective against small strongyles will maintain eradication of these parasites on a farm, and the addition of praziquantel will limit the transmission of tapeworms. Ivermectin and moxidectin are the only effective dewormers against bot larvae (although bots are not a major concern in horses).

Table 1. Example of a parasite control program for horses in Nebraska.

Fecal Egg Count (FEC) <sup>1</sup>	Months of Transmission			
	September	December	March	May/June
<b>Low, &lt;200 EPG</b>	Ivermectin or Moxidectin <i>PLUS</i> Praziquantel	Ivermectin	Ivermectin or Moxidectin <i>PLUS</i> Praziquantel	
<b>Moderate, 200-500 EPG</b>	Ivermectin or Moxidectin <i>PLUS</i>		Ivermectin or Moxidectin <i>PLUS</i>	Fenbendazole or Pyrantel (If effective)

	Praziquantel		Praziquantel	otherwise Ivermectin) <sup>2</sup>
<b>High, &gt;500 EPG</b>	Ivermectin or Moxidectin PLUS Praziquantel	Ivermectin	Ivermectin or Moxidectin PLUS Praziquantel	Fenbendazole or Pyrantel (If effective otherwise Ivermectin) <sup>2</sup>
<sup>1</sup> Initial Fecal Egg Count (FEC) in September followed by FECRT 10 to 14 days later to classify horses as low, moderate or high contaminators. <sup>2</sup> If high contaminators must be treated with ivermectin in November (because of resistance to pyrimidines or benzimidazoles) their next treatment would be in January.				

### Considerations for Young Horses

Parasite control programs should be customized for individual horses and herds based on FEC, seasonal patterns of parasite transmission, the climate, and pasture management schemes. While the target parasite to control in adult horses are small strongyles, ascarids (roundworms) are common in young horses. Roundworms are not affected by the seasons and foals are typically dewormed at regular intervals \*(bimonthly) from 2 to 16 months of age.

### References

- Craig, T., P. Diamond, N. Ferwerda, et al. 2007. Evidence of ivermectin resistance by *Parascaris equorum* on a Texas horse farm. *J. Equine Vet. Sci.* 27:67-71.
- Lyons, E., S. Tolliver and J. Drudge. 1999. A historic perspective of cyathostomes: Prevalence, treatment and control programs. *Vet Parasitol.* 85:97-112.
- Reinemeyer, C. 2009. Controlling strongyle parasites of horses; a mandate for change. *Proc. AAEP:* 55:352-360