

Internal Parasites & U.S. Horses: Ascarids

Equine internal parasites can cause colic, anemia, diarrhea, weight loss, poor performance, and other problems when ingested by horses. One type of internal parasite, ascarids (also called roundworms), are primarily a problem for young horses.

The USDA's National Animal Health Monitoring System (NAHMS) collected data on equine health and management practices from a stratified random sample of equine operations in 28 states¹ as part of the Equine '98 study. These operations represented about three-fourths of the equine population and three-fourths of operations with equids in the U.S. Overall 2,904 operations with one or more equids participated in the first interview from March 16 through April 10, 1998.

The biological sampling phase of the Equine '98 study was limited to 1,178 operations with three or more horses on January 1, 1998. Of these operations, 985 operations participated in the parasite portion of the study. Fecal samples were collected from a total of 8,516 horses. The number of horses sampled per operation varied by size of operation. The National Veterinary Services Laboratories (NVSL) in Ames, Iowa, performed a fecal flotation exam² on the samples and counted the number of eggs in one gram of feces. All estimates are based on analyses of weighted data allowing for inference to the overall horse population in the 28 participating states. More detailed information on the study and the sampling methodology is available on request.

Although fecal flotation is the preferred method for detecting ascarid infections in horses, it is not the most sensitive method for the detection of pinworm or coccidial infections and may not detect many tapeworm infections. However, if the presence of these latter

parasites were detected the results were recorded.

Overall, 51.0 percent of *horses* shed parasite eggs in their feces, and 79.1 percent of *operations* had at least one horse shedding parasite eggs. Most of the eggs detected were from strongyles (Table 1). Additional results on strongyles are reported in a companion Info Sheet.

Based on Equine '98 study results, at least one horse shed a detectable level of ascarid eggs on 10.1 percent of *operations* and an estimated 3.5 percent of *horses* shed a detectable level of ascarid eggs (Table 1).

Table 1. Percent of Operations (and Percent of Horses) Positive for Shedding by Type of Parasite

Parasite Shed	Percent Operations	Percent Horses
Strongyle eggs	75.9	49.0
Ascarid eggs	10.1	3.5
Tapeworm eggs*	10.6	3.5
Pinworm eggs*	0.1	0.1
Coccidia *	0.5	0.1

* Fecal flotation is not the most sensitive method of detecting pinworm and coccidial infections and may not detect many tapeworm infections.

The percentage of *horses* shedding ascarid eggs was higher for horses less than 18 months of age (17.3 percent) than for those 18 months or older (2.0 percent).

The percentage of *operations* with at least one horse shedding ascarid eggs was significantly higher in the Central region (18.5 percent) than in the Northeast region (4.3 percent, Figure 1 on the next page), although the percentage of *horses* shedding detectable levels was not significantly different across regions of the U.S. It appeared that more horses under 18 months of age shed ascarid eggs than horses 18 months or older in all regions. However, due to the relatively low number of younger horses included in the fecal testing, true age differences among regions were difficult to detect.

¹ Alabama, California, Colorado, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Montana, New Jersey, New Mexico, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Tennessee, Texas, Virginia, Washington, Wisconsin, and Wyoming.

² Modified Stoll's technique using Sheather's solution. Results reported in 10 eggs per gram increments.

Shedding of ascarid eggs was similar across primary uses of horses (such as for farm or ranch work, pleasure, competition, and breeding). Among horses under 18 months of age, it appeared that fewer of the horses primarily used for breeding shed ascarid eggs than those used primarily for show or competition. However, again due to the low number of younger horses included in the fecal testing, true differences relative to age and primary use were difficult to detect.

Shedding of ascarid eggs was similar across primary functions of operations, such as farm or ranch, residence, breeding farm, and boarding/training facility.

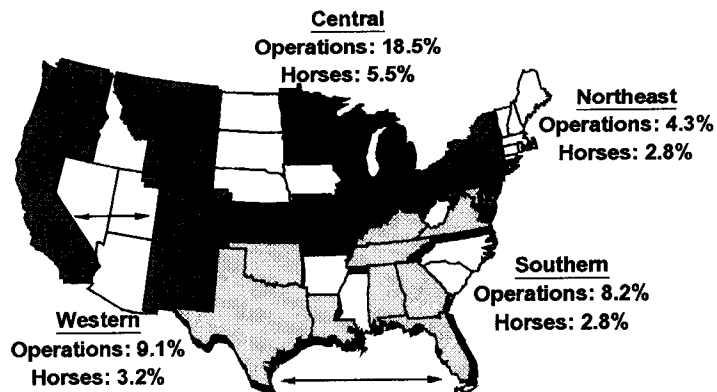
Young foals typically ingest ascarid eggs in the summer. It may take up to 3 months for the parasites to mature before laying eggs in a foal's intestinal tract. Because of this, the foal may not shed ascarid eggs in its feces until fall or winter. Equine '98 estimated that over twice as many *horses* shed ascarid eggs in the winter (5.6 percent) than in the summer (2.0 percent). This seasonal difference was due to the fact that over six times as many of the horses under 18 months of age shed ascarid eggs in the winter than in the summer (Figure 2). Percentages for *operations* with at least one horse shedding ascarid eggs showed a similar seasonal pattern (not shown in graph), although the seasonal difference was not statistically significant.

The percentage of horses shedding a detectable level of ascarid eggs was similar regardless of the number of horses on each operation.

The study found that 96.8 percent of operations dewormed the majority of resident horses at least once in the previous 12 months. The percentage of operations with at least one horse shedding a detectable level of ascarid eggs was lower for operations that had dewormed the majority of resident horses (8.6 percent) than for operations that had *not* dewormed the majority of resident horses (47.4 percent). However, confidence in the latter estimate is low due to the relatively low number of operations that did not deworm the majority of resident horses.

Over two-thirds (67.8 percent) of the operations had rotated dewormers in the previous 12 months. No difference was detected in the percentage of operations with at least one horse shedding ascarid eggs on operations that rotated dewormers compared to those that had *not* rotated dewormers. The study was not designed to measure resistance to various types of dewormers or to determine the types of products used for deworming or the date of administration.

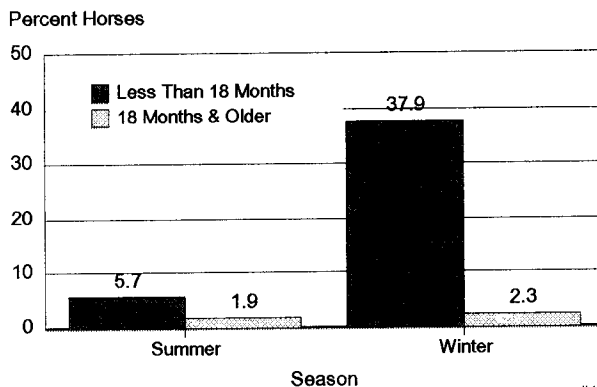
Figure 1
Percent of Operations (and Percent of Horses) Positive for Ascarid Egg Shedding by Region



Shaded states participated in the NAHMS Equine '98 Study.

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Figure 2
Percent of Horses Shedding Ascarid Eggs by Season and by Age



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A goal of any deworming program should be to keep internal parasite infection at a low level, because higher levels have more of an impact on health. Regular administration of dewormers can decrease the number of eggs being shed into the environment. This, along with removal of manure on a regular basis and avoiding overcrowding, will help to reduce the environmental load of parasite eggs. Internal parasites can develop resistance to dewormers and rotating among different classes of compounds may delay resistance. A veterinarian should be consulted to establish an effective deworming program, and periodic surveillance with fecal flotation exams can be used to evaluate the success of the program.

For more information, contact:

Centers for Epidemiology and Animal Health
 USDA:APHIS:VS, attn. NAHMS
 2150 Centre Ave., Bldg. B, MS 2E7
 Fort Collins, CO 80526-8117
 (970) 494-7000
 E-mail: NAHMSweb@aphis.usda.gov
<http://www.aphis.usda.gov/vs/ceah/cahm>

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