



United States
Department of
Agriculture

Animal and
Plant Health
Inspection
Service

Veterinary
Services

Cryptosporidium is Common in Dairy Calves

National Dairy Heifer Evaluation Project

Cryptosporidium is a very widespread diarrheal agent of preweaned dairy calves. A USDA: APHIS study estimates that the parasite is present on more than 90 percent of dairy farms.

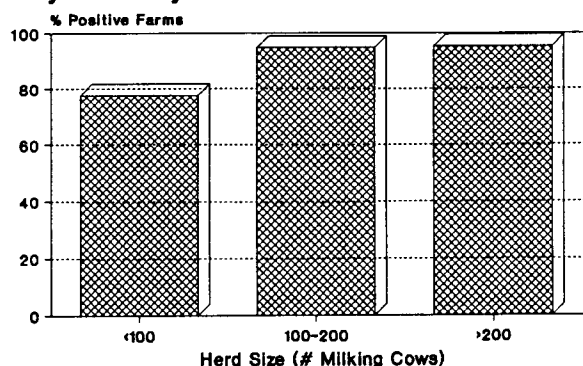
Although Cryptosporidium was first discovered in mice in 1907, it was not identified in cattle until 1971. Since then, evidence of the parasite in dairy animals has been found most commonly in calves less than 3 weeks of age.

Today, cryptosporidiosis is not recognized as a major cause of death in calves, but as a potential economic loss in the dairy industry - the result of scours, weight loss, dehydration, and other symptoms. Since it can be transmitted to humans, it is also a public health concern.

Because of both the animal and public health concerns, the National Animal Health Monitoring System (USDA:APHIS:VS) chose to include cryptosporidia in the list of topics to be addressed in its National Dairy Heifer Evaluation Project (NDHEP). The NDHEP included 1,811 farms in 28 states.¹ During the 1991-92 study of heifer health and management practices, fecal specimens were collected from 7,369 preweaned dairy calves on 1,103 farms to test for the parasite.

The NDHEP estimates show that on any given day, 22 percent of preweaned heifers are shedding Cryptosporidium. The estimated proportion of farms with the parasite present is more than 90 percent. The prevalence increases slightly with increasing herd size

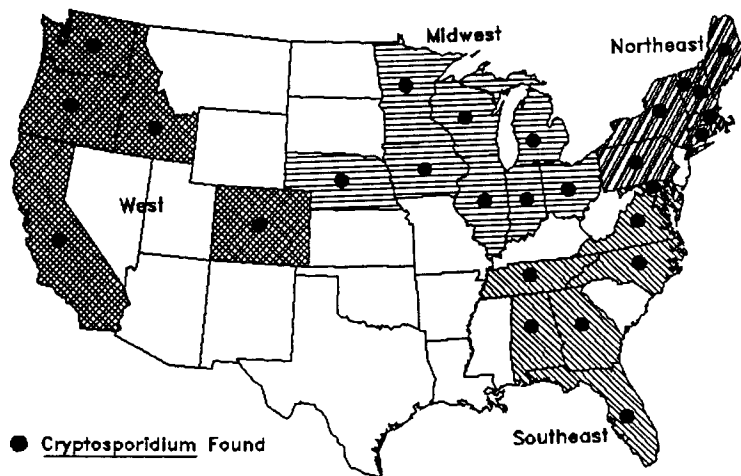
Figure 1. Estimated Cryptosporidium Prevalence on Dairy Farms by Herd Size



(Figure 1). Cryptosporidium occurs in virtually all large and medium-sized herds, but a small percent of herds with less than 100 cows may be free of the agent.

Figure 2 shows that Cryptosporidium was found in every state participating in the NDHEP. The

Figure 2. National Dairy Heifer Evaluation Project States and Location of Dairy Herds with Preweaned Heifers Testing Positive for Cryptosporidium



¹States participating in the National Dairy Heifer Evaluation Project (NDHEP): Alabama, California, Colorado, Connecticut, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Nebraska, New Hampshire, New York, North Carolina, Pennsylvania, Ohio, Oregon, Rhode Island, Tennessee, Vermont, Virginia, Washington, and Wisconsin.

prevalence of the parasite in western states is higher, perhaps because of its association with larger herds. However, it may be present on more than 80 percent of farms in every region.

Cases peak in heifers 1 to 3 weeks of age - nearly one-half of animals in this age range test positive at any single point in time (Figure 3). It is most often found in calves 12 days of age. The percentage drops to 22 for calves 3 to 5 weeks of age, and is less than 15 percent for calves over 5 weeks of age.

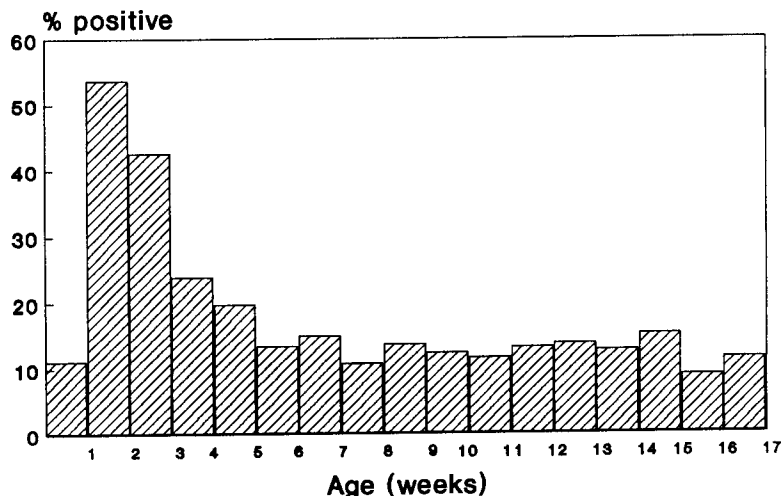
Prevalence is higher in the summer than in other months and is higher for farms using multiple-animal maternity facilities than for those using individual-animal facilities.

How aware are the dairy producers? Only 2 percent of the producers indicated that they had a cryptosporidiosis problem in their herds in the previous 6 months. This indicates that in general, calves and Cryptosporidium co-exist in harmony.

Some previous studies have reported that the parasite is rarely found in normal fecal specimens. While results of the NDHEP did show an association with diarrhea, many positive calves were not reported to have diarrhea. Thus, Cryptosporidium infects calves on many farms that have very low disease and mortality rates.

There is no specific anti-cryptosporidiosis treatment, so producers and veterinarians can only treat the symptoms to relieve diarrhea and dehydration. The NDHEP producers received individual farm reports showing the positive and negative results on the animals tested and were advised to consult with a veterinarian or extension agent who could help identify if any actions should be taken.

Figure 3. Cryptosporidium Infection by Age in Preweaned Heifers (Number of Animals Tested = 7,369)



The organism is remarkably stable in the environment making elimination of the parasite difficult. Although herd size, season, and calf age are strongly associated with Cryptosporidium infection, they are not controllable factors. Avoiding multiple animal maternity facilities, especially during the summer months, may help reduce infection. Good hygienic measures are the producer's best bet to reduce parasite load in the environment as well as other organisms which can complicate the problem. 🐄

Participants in the NDHEP included the National Agricultural Statistics Service (USDA) and State and Federal Veterinary Medical Officers. The National Veterinary Services Laboratories (USDA:APHIS:VS) performed the tests on the fecal specimens collected and are maintaining the specimen bank for future uses. The Cooperative Extension Service provided editorial assistance. For more information on National Dairy Heifer Evaluation Project and other NAHMS programs, please 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
NAHMSweb@aphis.usda.gov