Evaluation of bovine calf diarrhea cases for identification of infectious agents submitted to a Texas diagnostic laboratory from 2019 to 2023

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Introduction

Diarrhea is a common cause of morbidity in beef and dairy calves. The objective of our study was to identify common infectious etiologies of calf diarrhea in cases submitted to Texas A&M Veterinary Medical Diagnostic Laboratory between 2019-2023.

Materials and methods

Submissions with gastrointestinal samples from cattle ≤ 6 months of age or ≤ 800 lbs. that were tested for bacterial culture, parasite identification, or the calf diarrhea multiplex (rotavirus, coronavirus, cryptosporidium) were eligible for inclusion. The number of gastrointestinal samples submitted on the odds of testing positive for an infectious etiology (viral, bacterial or parasitic) was assessed using logistic regression.

Results

There were 5,078 calves included in the analysis. The most ordered tests were bacterial culture (n = 2,143; 42%), calf diarrhea multiplex (n = 1,687; 33%), and McMasters test (n = 1,676; 33%). Most (94%; 2,006/2,143) bacterial cultures were positive for *E. coli*. Bovine rotavirus A was detected in 78.4% (1,322/1,687) of samples with viral testing. *Eimeria* was the most detected parasite using the McMasters test (785/1,676; 47%). An infectious etiology was not detected in 29% (1,464/5,078) of calves. Calves with 2 or more gastrointestinal samples had 5.32 (95% CI: 2.6, 12.7) greater odds of detection of an infectious etiology than a single sample. Submission of feces with fecal swab or gastrointestinal tissue increased the odds of detection (9.8 [95% CI: 2.0, 176]; 8.8 [95% CI: 2.7, 54.3], respectively) than feces alone.

Significance

Submitting multiple samples when investigating the cause of calf diarrhea increased the odds of detecting an infectious etiology. Sample selection may be dictated by ante or postmortem examination.

