

Incidence of Infectious Bovine Keratoconjunctivitis

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Introduction

During 2003 an unusual number of calves showed signs of Infectious Bovine Keratoconjunctivitis (IBK), with 39.6% of the herd infected at the Rhodes Farm. Infectious Bovine Keratoconjunctivitis (IBK), commonly known as pink eye, is a contagious disease caused mostly by the bacteria *Moraxella bovis*, although other agents have been identified as a cause of IBK. Previous studies have shown that factors such as increased sunlight exposure, dust, tall grasses, and high populations of face flies (*Musca autumnalis*) facilitate *M. bovis* infection. Some of the symptoms associated with pink eye are reddening of the eyeball, swelling of the eyelid lining, followed by watery discharges. The study of this bacterial infection is important due to its effects on cattle performance, specifically weight gain. This preliminary analysis of data collected in the summer and fall of 2003 reveals the severity, persistence, and incidence of the disease. The analysis of the data also suggests a heritability ($h^2 = .180$), which is similar to the narrow sense heritability obtained at the USDA Meat Animal Research Center, Clay Center, NE, taking into consideration the small size of our data.

Materials and Methods

A total of 337 calves were examined in August and October. A scoring sheet, which has a scoring system from 1 to 4 indicating the severity degree of the infection, was used. The individuals were examined twice for two reasons: to monitor the infections during the high incidence season for pink eye in August and to check the healed lesions in October. A REML analysis was conducted in order to identify the genetic parameters influencing IBK.

A heritability estimate ($h^2 = .180$) was obtained from this analysis. The statistical analysis showed no difference among sexes, regarding the incidence of infection.

Results and Discussion

Figures 1 and 2 illustrate the percentage of infected and noninfected individuals, during August and October. For the two observation dates there was an average of 39.6% of infected animals. A total of 38 new cases were reported in October. This tells us that even though there was a reduction in the number of infections, the number of infections was higher than expected for October.

The number of bilateral infections (both eyes) was high in August and in October, with 13.94% and 10.46% of infected calves respectively (Figures 3 and 4). In August, 16% of infections were detected on the left eye and 14.5% of infections were detected on the right eye. During October, 11% of infections were observed in the left eye and 13% were detected on the right eye (Figures 3 and 4).

Table 1 shows the average score per eye for each of the observation dates. These averages were analyzed with REML and no difference between the incidence of infections between the eyes was detected. The number of infections detected, decreased from the first observation date.

A total of 46 calves were assigned a score of 4, the highest score of our scoring system. It represents a lesion with perforation of the cornea. This kind of chronic infection could potentially lead to rupture of the eye, which results in complete blindness.