

THE ASSOCIATION OF ANTIBODIES TO *NEOSPORA CANINUM* WITH POST-WEANING WEIGHT GAINS, CARCASS MEASUREMENTS, AND ECONOMIC PROFITS IN BEEF CALVES

Barling K¹, McNeill J², Thompson J¹, Paschal J², McCollum FT², Craig T³, Adams LG³

¹ Department of Large Animal Medicine and Surgery, Texas A&M University, College Station, Texas, USA, 77843

² Department of Animal Science, Texas Agricultural Extension Service, Texas A&M University, College Station, Texas, USA, 77843

³ Department of Veterinary Pathobiology, Texas A&M University, College Station, Texas, USA, 77843

The objective of this study was to determine the seroprevalence of *Neospora caninum* in a retained-ownership feedlot population of beef calves and the association of calf serologic status with post-weaning weight gain, carcass measurements, and economic profit.

Materials and Methods

The 1998-99 Texas A&M University Ranch to Rail Program provided the research population. 1,009 weaned beef steers from 92 Texas beef herds were serologically sampled upon arrival to the feedlot. *Neospora* serologic status was determined using a *Neospora* agglutination test. Samples were deemed positive when *N. caninum* antibodies agglutinated at serum dilutions of $\geq 1:80$. Results were compared, using multivariate regression with generalized estimating equations, with calf growth, carcass, and economic data from the retained-ownership feedlot program.

Results

13% of the calves were seropositive. 58.7% of the consignments had at least one seropositive calf and the mean within consignment prevalence of consignments with at least one seropositive calf was 23.4%. Positive serologic status was associated with significant reductions in average daily gain, feed efficiency, live body weight at slaughter, hot carcass weight, and an increase in ribeye area to hot carcass weight ratio. Positive serologic status was also related with significant increases in feed cost of gain, cost of treatment, total cost of gain, cumulative expenses and associated with significant reductions in income and feedlot margins. Morbid, seropositive calves had the highest cost of treatment for feedlot morbidity.

Discussion

Significant reductions in post-weaning, feedlot calf growth, carcass weight, and economic gain were associated with detection of antibodies to *N. caninum* antibodies in beef calves.

