

and day of death, the clinical illnesses observed in this study were lengthier than those reported 16-18 years ago. Potentially the treatments currently in use impact the length of illness. There were differences in lesions that correlated with differences observed in animal and

treatments. In addition isolation of different BVDV subtypes correlated with differences in lesions and agent identification. This study illustrates the usefulness of BVDV IHC in the identification of PI animals in feedlots and detection and control of lung pathogens.

## Comparison of Three Oral Chlortetracycline Treatment Regimens for Persistent *Anaplasma marginale* Carrier Clearance

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### Introduction

*Anaplasma marginale* causes the most prevalent tick-transmitted disease of cattle. Once infected, a life-long carrier state persists to function as a disease reservoir enabling subsequent vector infection or production equipment contamination. Despite reports of successful carrier clearance, no antimicrobial compound is labeled for disease elimination. In the absence of an efficacious vaccine, a validated antimicrobial regimen for persistent *A. marginale* elimination is urgently needed. Three oral chlortetracycline (CTC) treatments were evaluated for carrier clearance in cattle persistently infected with a Virginia isolate of *A. marginale*.

### Materials and Methods

Eighteen, 10-month-old Holstein steers were blocked by body weight and randomly assigned to a 2.0 mg/lb (4.4 mg/kg), 5 mg/lb (11 mg/kg) and 10 mg/lb (22 mg/kg) oral CTC treatment group (n=6). CTC was prepared in a ground corn carrier, and dosages were divided into twice daily feedings as a top dress on a grower ration. CTC plasma pharmacokinetic parameters were

assessed by high performance liquid chromatography during the treatment period. Carrier clearance was determined by a novel RT-PCR assay, the currently available cELISA, and examination of stained blood smears. Carrier clearance was confirmed by subinoculation of splenectomized calves.

### Results

The 2.0 mg/lb (4.4 mg/kg), 5 mg/lb (11 mg/kg) and 10 mg/lb (22 mg/kg) treatments successfully chemosterilized all persistently infected steers 35 days after treatment initiation. No apparent difference for time of carrier clearance was detected between the 2.0 mg/lb, 5 mg/lb or 10 mg/lb treatment groups. Furthermore, the RT-PCR assay accurately identified carrier clearance three months prior to the cELISA.

### Significance

Future studies are needed to evaluate the susceptibility of other *A. marginale* isolates to these treatments.