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Abstract Title: Use of placental tissue for diagnosis of bovine viral diarrhea virus persistently infected alpaca crias

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Introduction: Bovine viral diarrhea virus (BVDV) has recently become a disease of concern for alpaca producers. Like calves, alpaca crias are capable of becoming persistently infected (PI) and will efficiently shed virus for the rest of their life. BVDV is a costly disease in both cattle and camelid livestock industries. Testing for BVDV PI status is critical in the alpaca industry to identify persistently infected animals and remove them from the herd. Currently, testing is available using blood samples which in many cases require a veterinarian to obtain. We propose that placenta tissue obtained near the time of birth of the cria can be used to determine the BVDV infection status of the cria. The placenta sample can be collected by the owner and submitted quickly for reverse transcriptase PCR as an alternative to blood sampling.

Objective: The objective of this study was to determine if placenta tissue could be used to identify BVDV infection in newborn alpaca crias.

Procedures: Placenta tissue and whole blood samples were collected from 20 newborn crias within 24 hours of birth. BVDV RT-PCR was performed on both the placenta and blood samples and results were compared.

Results: Of the 20 crias sampled, 2 were positive on both placenta and blood sample and 17 were negative for both samples. One animal tested positive on placenta but negative on blood. BVDV PCR of placental tissue samples showed a sensitivity of 100% and a specificity of 94.4% when compared to whole blood PCR.

Conclusions and Clinical Relevance: We conclude that BVDV PCR of placenta tissue is a good screening test that allows for quick determination of BVDV negative crias. Whole blood PCR should be performed on animals with a positive placenta PCR test in order to confirm BVDV persistent infection. The ease of collecting placenta tissue makes this a useful tool for alpaca producers to screen their crias, reduce isolation time for the dam and cria, and minimize contamination of their premises.