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Use of pooled protozoal cultures of preputial scraping samples obtained from bulls for the detection of Tritrichomonas foetus by means of a real-time polymerase chain reaction assay.

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Abstract

OBJECTIVE: To determine the sensitivity of a real-time PCR assay for the detection of Tritrichomonas foetus in protozoal cultures of preputial scraping samples pooled from up to 25 bulls and to determine the specificity of that assay for detection of T foetus in cultures for individual animals.

DESIGN: Cross-sectional study.

ANIMALS: 188 bulls and 150 steers.

PROCEDURES: Preputial scraping samples were collected, placed in a culture kit, and incubated at 37°C for 7 days. Cultures for individual animals were tested for T foetus by means of a real-time PCR assay. Pools of protozoal cultures were made by including fixed aliquots of samples with known positive and negative results in ratios of 1:2, 1:3, 1:5, 1:10, 1:15, 1:20, and 1:25. Specificities of the real-time PCR assay and culture for detection of T foetus in samples obtained from individual animals and sensitivity of real-time PCR assay for each evaluated pool ratio were determined.

RESULTS: Specificity estimates for culture and the real-time PCR assay for detection of T foetus in preputial scraping samples for individual animals were not significantly different (98.8% and 100%, respectively). Sensitivities of the real-time PCR assay for the various pooled samples with known positive and negative T foetus results were not significantly different; overall sensitivity of the assay was 94%.

CONCLUSIONS AND CLINICAL RELEVANCE: Results indicated the evaluated real-time PCR assay had high specificity and good sensitivity for the detection of T foetus in pooled protozoal cultures of preputial scraping samples obtained from up to 25 animals.