

**TITLE:** DETECTION OF *Campylobacter fetus* subsp. *venerealis* IN BULLS

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**ABSTRACT:**

Bovine genital campylobacteriosis (BGC) is caused by *Campylobacter fetus* subsp. *venerealis*. This gram-negative bacterium can be found in genital tract. Bulls are asymptomatic reservoir infecting the cows by sexual contact. Infected females exhibit irregular estrus, transient infertility, cervicitis, endometritis, embryonic death and, rarely abortion. Treatment of infected animals is impractical and have limited efficacy. Therefore, BGC control is based in diagnostic testing, reporting, and culling of infected animals, with the introduction of vaccination programs. Unfortunately, the prevalence of this disease is still uncertain, and the difficulty in collecting, isolating and diagnosing of the bacteria makes the data even scarcer, mainly in Brazil. Therefore, this study aimed to detect *C. fetus* subsp. *venerealis* in bulls in reproductive age in farms of the Rio Grande do Sul state, Brazil. The methodology included collection of preputial mucus of 48 bulls (2-11 years old) from six different farms. Samples were collected with soft brush and transported in ultrapure water, being analyzed in 24 hours. The DNA of all samples was extract with PureLink® Genomic DNA Kit, according to manufacturer's instruction. Conventional PCR reactions to detect *C. fetus* subsp. *venerealis* were performed. Oligonucleotides were designed, in Geneious® software, based in an insertion element (ISCfe1) that is exclusive and highly conserved in *C. fetus* subsp. *venerealis* strains. The amplicons were subject to agarose gel electrophoresis for visualization of DNA fragments. The results demonstrated 26 bulls (54.2%) infected with *C. fetus* subsp. *venerealis*. The positive animals have variable age, 2 to 11 years old, therefore, for the identified bulls, the bacteria presence in the preputial crypts was regardless of the age. At farms level, we have identified positive bulls in all of them (100%). These results suggest that BGC is spread in cattle farms and probably the detection is still underestimated, because the outbreaks of the disease are not regularly detected and reported. Therefore, more studies are needed to elucidate the real scenario of occurrence of this disease within livestock farms in Brazil. In addition we highlight by the presented results that is mandatory the introduction of BGC managements protocols, especially the vaccination of the susceptible animals.

**Keywords:** Bovine genital campylobacteriosis, PCR reaction, *Campylobacter* spread, reproductive fails.

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