

Prevalence of *Tritrichomonas foetus* in animal hosts

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Tritrichomonas foetus is a very intriguing trichomonad protozoan with respect to its varied choice of residence in the different host species. It is an obligate parasite colonizes the cattle reproductive tract leading to vaginitis, cervicitis, endometritis, and even early abortions. Tritrichomonosis may cause the serious economical losses among the cattle population where natural breeding conditions exist. Bovine venereal tritrichomonosis caused by the flagellate *Tritrichomonas foetus* is a notifiable disease in Poland and cattle are under the domestic animal infectious diseases control law.

T. foetus is also relatively recently pathogenic for cats all over the world. Invasion of trichomonads gives symptoms from gastrointestinal tract and causing chronic large bowel diarrhea. Most of the affected cats come from rescue shelters and pedigree breeding colonies.

Furthermore, trichomonads are commensal in the nasal passages, stomach, cecum and colon of swine host without apparent clinical significance.

Tritrichomonosis in cattle is a sexually transmitted disease whereas feline tritrichomonosis is a disease with a purported fecal-oral route of spread. Experimental cross-infections of *T. foetus* in different species showed that porcine *T. foetus* isolates are able to cause disease in cattle.

The aim of this studies was to determine the prevalence of trichomonosis in animal hosts and for this purpose we tested samples from cattle, cats and pigs collected since 2016 to 2018.

In the present study, we conducted a morphological and molecular investigation of *T. foetus*. This survey examined 190 vaginal and peputial swabs from cattle, and 200 swabs from swine nasal cavity and 130 fecal samples from cats.

Firstly, we inoculated specimens from pigs and cattle into the Diamond medium and after 4 days we checked the growth of live motile parasites. In case of cats we tested many commercial kits and chose ZR Fecal DNA MicroPrep (Zymo Research, Irvine, USA) as a the best for directly DNA isoaltion from feces. As a molecular test for all samples we used conventional PCR according to Felleisein (Felleisein *et al.*, 1997) recommended by Manual OIE.

The prevalence of *Tritrichomonas foetus* in animal hosts was: 18% in pigs and 24% among cats samples while in cattle *T. foetus* was not detected.

In case of cows and bulls, our results confirm notification records and are the same like in most European countries where artificial insemination is wide-spread used. However, relatively high percent of *T. foetus*-positive pigs possess a negligible risk of a successful *T. foetus* transmission event to cattle.

These findings provide useful information for the epidemiology of tritrichomonosis and the prevalence of pigs and cats was the first time conducted among animal hosts of *T. foetus* in Poland so far.