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Giardia duodenalis prevalence in cattle in Latvia

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Giardia duodenalis is a zoonotic protozoa which is most often associated with water-borne outbreaks in human population. Giardia causes severe, often chronic, intermittent diarrhoeas in animals and humans.

Cattle farming is one of the main agricultural fields in Latvia and Giardia induced diarrhoea can cause significant economical loss.

AIM OF THE STUDY

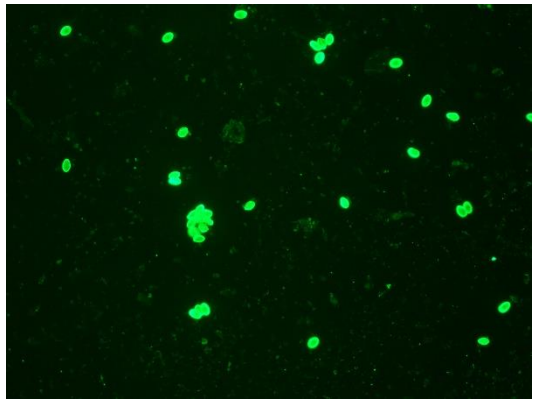
To determine Giardia prevalence in cattle in Latvia and whether there is a potential for environmental contamination.

MATERIALS and METHODS

- Study was done from March – December, 2020;
- **32 dairy herds** were visited;
- **973** faecal samples were collected;
- Animals were divided in **3 age groups** (1-90, 91-730, >731 days old);
- The **fluorescent microscopy** for antibody labelled cyst/oocyst detection was used;
- **A questionnaire** was designed to collect information about diarrhoea in animals, manure management and water bodies near farms.

RESULTS

- Prevalence was **8.4%** and at least one Giardia cysts shedding animal was found in **87.5%** of the herds;
- Significantly higher prevalence (**16.4%**) was observed in cattle in the first age group ($p<0.00001$);
- **16.0%** of the animals had *Giardia* associated diarrhoea ($p<0.001$);
- In **100.0%** of the infected herds, organic manure was used for field fertilization;
- In **10.7%** of Giardia positive herds, some type of water body (such as lake or river) was in the pasture used by cattle.



Giardia duodenalis cysts. Using direct immunofluorescence staining, 200x

CONCLUSIONS

- Giardia is commonly found in Latvian cattle herds, with younger cattle being more affected by the protozoan;
- There is a potential for environmental contamination from cattle farms via field fertilization or water contamination.

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