Prevalence of antibodies against *Toxoplasma gondii* in cattle in Estonia

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Introduction

Toxoplasma gondii is considered one of the most important food borne zoonotic diseases in the western world. We recently found evidence of a large proportion (56%) of Estonians being exposed to this parasite (Janson et al. 2013). In addition to other sources, humans may acquire *Toxoplasma* infections from cattle via undercooked beef or, potentially, raw milk from infected animals. In the recent years, the consumption of the latter has increased in popularity in Estonia.

Overlooking the possibility of transmission risk to humans and animals is done at the possible expense of health and lives

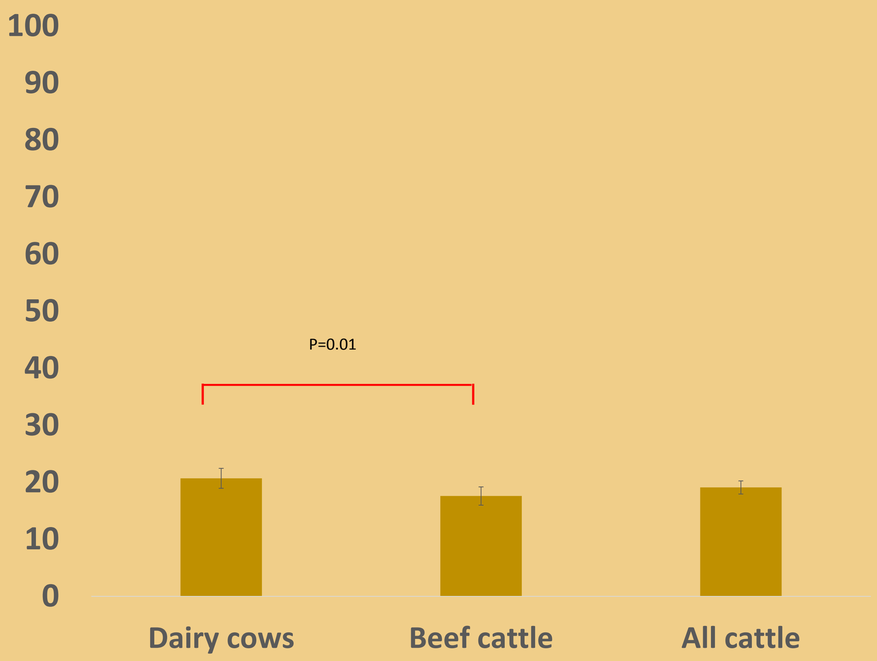
The cats often acquire *T. gondii* by hunting prey, and can shed oocysts to the environment. The oocysts are a major infection source for herbivores.

Materials and methods

- The Estonian cattle population in 2012 comprised 89616 registered dairy cows in 833 herds and 9035 beef cows.
- The sera were collected by veterinarians: from 4220 cattle from 125 dairy herds and 125 beef herds.
- Depending on the herd size, 5-30 samples were collected from each herd.
- The sera were diluted 1:100 and examined for IgG antibodies against *T. gondii* using Toxo-screen DA (bioMérieux, France).
- OpenEpi was used to the preliminary analysis of the results: to determine proportions and evaluate differences between beef and dairy results.

Results

Almost one out of five animals were seropositive for *T. gondii* (19.1%, 95% CI 18.0-20.3), and fewer beef cattle were found positive compared to dairy cattle.



Estonian beef and dairy **cattle** seropositive for *Toxoplasma gondii*

Preliminary analysis at herd level has revealad that a majority of the herds have at least one seropositive animal. Prevalences within the herds have varied from 0.0-83.3% (mean 18.4%, median 12.9%) for dairy herds, and 0.0-70.6% (mean 17.3%, median 9.5%) for beef herds.

Conclusion

The conservative estimate, obtained with a high cut-off, of the *T. gondii* seroprevalence in cattle indicates that both beef and dairy cattle are commonly infected with *T. gondii* in Estonia.

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