Molecular prevalence of *Sarcocystis* spp. and *Toxoplasma gondii* in slaughtered equids in North Tunisia

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Introduction

Sarcocystis spp. and *Toxoplasma gondii* are obligate protozoan parasites infecting a large range of wild and domestic animals including equids. Although these pathogens have a wide host range among vertebrates, there is limited understanding regarding their infection in equids. This study aimed to gain knowledge about the public health risk related to these parasitosis by investigating the infection prevalence in slaughtered equids with *Sarcocystis* spp. and *T. gondii* in the slaughterhouses of Tunis and Bizerte, located in Northern Tunisia.

Materials and methods

A total of 184 slaughtered equids from slaughterhouses of Bizerte and Tunis located in Northern Tunisia, were examined for meat infections with *Sarcocystis* spp. and *T. gondii* by PCR. To detect *Sarcocystis* spp., the 18 S rRNA gene was amplified by a conventional PCR (Yang et al., 2002). To screen for the presence of *T. gondii* B1gene, B22 and B23 primers were used (Boughattas et al., 2014). The infection prevalences were compared using the Chi-square Mantel-Haenszel test.

Results

Infections prevalence with *Sarcocystis* spp. and *T. gondii* were 38% (95%CI: 31-45) and 39.7% (95% CI: 32.6-46.7), respectively. The highest infection prevalence of *Sarcocystis* spp. was observed in donkeys (48.6%; 95%CI: 37.3-60) followed by mules (32.8%; 95%CI: 21.3-44.3), and horses (28.3%; 95%CI: 15.2-41.2) (p = 0.04). Similarly, the highest infection prevalence of *T. gondii*, was observed in donkeys (66.2%; 95%CI: 55.4-77), followed by mules (18.7%; 95%CI: 9.2-28.3), and horses (26.1%; 95%CI: 13.4-38.8) (p<0.001). The co-infection prevalence was estimated to 17.4% (95%CI: 11.9-22.9).

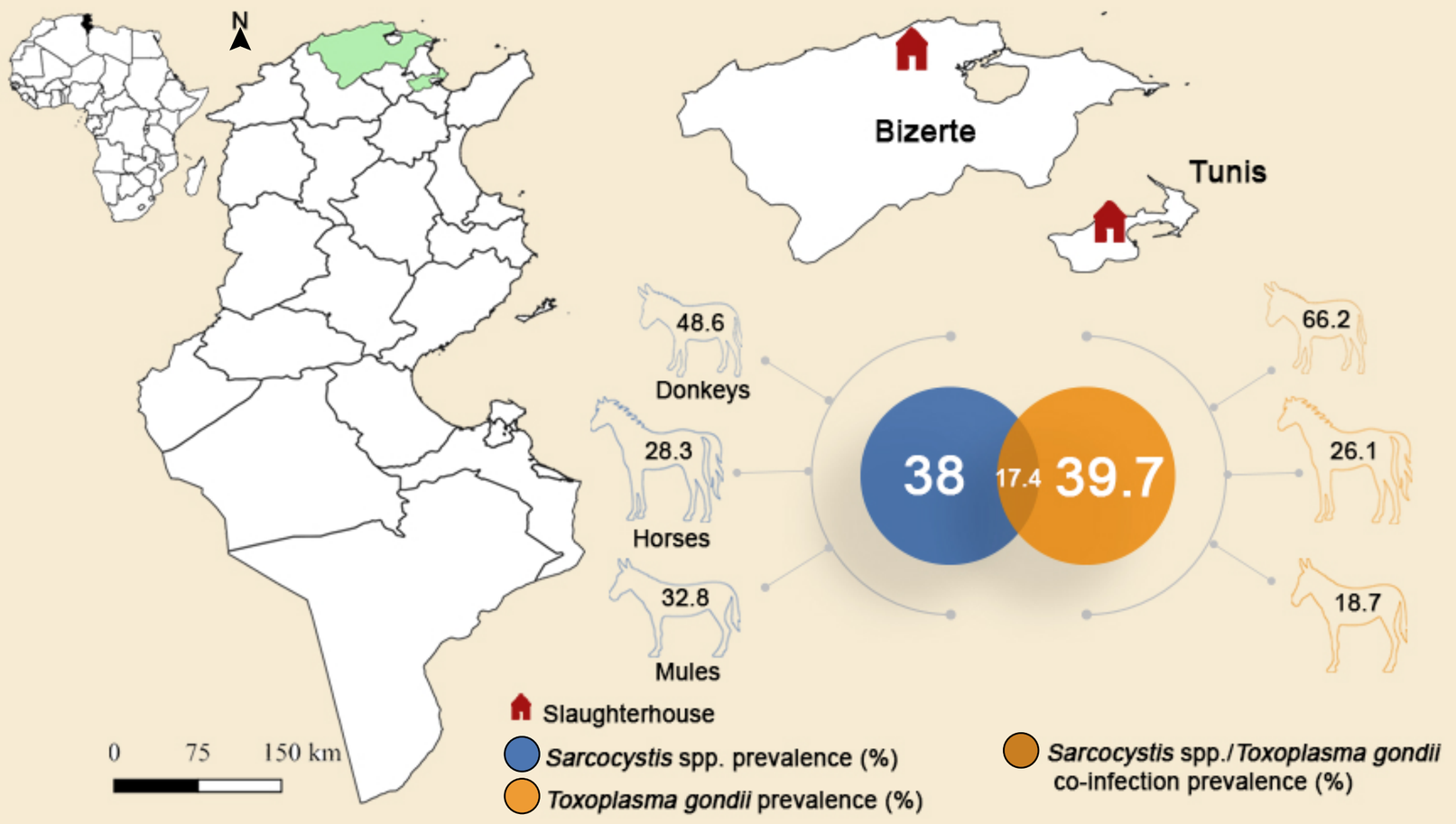

Fig.1 Geographic location of the two slaughterhouses included in the present study (Bizerte and Tunis) and main results of *Sarcocystis* spp. and T*oxoplasma gondii* infections in equids' meat samples.

Conclusion

Taking into consideration that humans can be infected following consumption of infected equid's meat with T. gondii and/or some Sarcocystis species, it is of major importance to assess the risk of human infection. Thus, further studies are needed for a better understanding of the epidemiology of these zoonoses.

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