

Nynke Deckers, 2004

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MSc in Tropical Animal Health

Development and evaluation of an anti-trypanosomal antibody-detection ELISA for use in pigs

Summary

Pig trypanosomosis is becoming increasingly important with growing commercial pig production. Pigs are also potential reservoir hosts for trypanosome species that cause human sleeping sickness. Since parasitological methods are not very sensitive in detecting low parasitaemias in pigs, serological methods that detect anti-trypanosomal antibodies, such as the antibody-detecting ELISA, are often preferred for epidemiological surveys.

In this work, 6 pigs of the Belgian landrace were infected with *Trypanosoma congolense* and followed up during 4 weeks. The rectal temperature, packed cell volumes (PCV), parasitaemia and antibody response were monitored. For this last purpose, an indirect ELISA test using an *in-vitro* cultured antigen of *Trypanosoma congolense* was elaborated to detect anti-trypanosomal antibodies starting from both serum samples as well as full blood samples collected on filter paper.

The pigs did not show overt clinical symptoms notwithstanding trypanosomes could be demonstrated in 5 of the 6 pigs from 2 weeks after the infection onwards. However, the parasitaemia was low and scanty. Antibody levels started to rise 2-3 weeks after the infection, but the individual response was highly variable.

In a second part of the study the ELISA-test was used to examine 493 porcine blood samples from 171 farms in the vicinity of Kinshasa (Democratic Republic of Congo). Positive farms were found in distinct locations: most of these farms were found in Mont Ngafula, Kisenso and Selembao districts. All the samples from Ndjili and most of the samples from Masina were negative.

Further research using species specific testing (PCR) of infected pigs will examine whether pigs are reservoir host for humans sleeping sickness in that area.

Keywords: Trypanosomosis, Trypanosoma congolense, pigs, antibody ELISA

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IMTA- Thèse de M.Sc., N° 16, 2004

Thesis presented in fulfilment of the requirements for
the degree of Master of Science in Tropical Animal Health

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Yes