A survey on Babesia bovis and Babesia bigemina sero-prevalence in wild ruminants in Central Italy


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INTRODUCTION

During the last ten years Roe deer (Capreolus capreolus) and wild boars populations (Sus scrofa) had increased in the Pesaro province, but also Fallow deer (Dama Dama) and Deer (Cervus elaphus) are now important. All these populations must have an annual control through programmed hunting. In 2005, in about 2893 km² of the area, 17620 wild ruminants were estimated and the population's control planning expected the culling of 1200 animals on the basis of age and sex, with various distribution in the different districts of the territory (Fig. 1).

AIM OF THE STUDY

This work shows the results of the application of an Indirect Fluorescence Test (IFAT) to the serum samples, for the detection B. bovis and B. bigemina antibodies, with the aim to estimate the seroprevalence for these parasites in the cervid populations.

MATERIALS & METHODS

For this study on the Babesiosis we considered as a target population, 1200 selected males aged one year and over. The final collection was mainly constituted of Roe deer's serum and the number of sampled specimens was 179. The blood samples was directly collected from the neck's carotid artery or from jugular vein by formed and authorised huntsmen. Every hunter was supported with special purpose kit for collection. The blood samples were sent to a Local Veterinary Department, with a notice paper, then transferred to the Diagnostic Laboratory. Serum was immediately separated from plasma and stored at –80°C until the analysis, performed by National Reference Laboratory (Centro Referenza Nazionale per Babesia, Anaplasma e Theileria, IZS della Sicilia, Palermo).

At the CRN Babesia bigemina IgG Kit IFA and Babesia bovis IgG Kit IFA (Fuller Laboratories Fullerton, CA USA) tests were performed to detect antibodies using as conjugate FITC-conjugated Anti Protein G Alexa Fluor 488 (Invitrogen Molecular Probes Eugene USA). Both immunofluorescence tests, use antigens derived from erythrocytes cells infected with B. bigemina and B. bovis respectively. Samples were considered negative when no fluoresce was detected at 1:16 dilution of the test serum, as according with J.Blancou.

RESULTS & CONCLUSION

Out of 179 samples, 18 for B. bovis and none for B. bigemina were found positives, with an estimated prevalence of 10.06% (I.C. 95% 6.75 – 14.42), showing the efficacy of this survey (Fig. 2). These data must be extended to a wide range of parasites probably circulating in the studied area also by direct detection of etiological agents. In fact in the studied area there is an extensive use of pasture for Marchigiana breed and we ought to investigate the circulation of haemo/protozoal diseases in wildlife-domestic livestock interface and the related risk of inter-species transmission.

REFERENCES


2nd Babesia World Summit, May 4-5 2007, Palermo (Italy)