

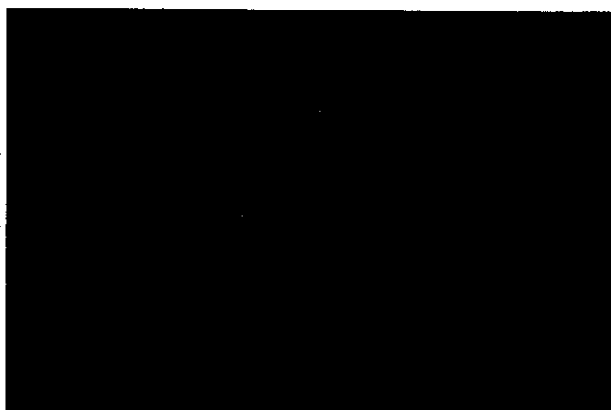


SOIPA

SOCIETÀ ITALIANA di PARASSITOLOGIA

**SOCIETÀ ITALIANA
DI PARASSITOLOGIA**

XXVII Congresso Nazionale



Alghero 26-29 giugno 2012



Dipartimento di Medicina Veterinaria
Università degli Studi di Sassari



SYSCOPTVM
PERFICE
MORVM

Seroprevalence of *Babesia caballi* and *Theileria equi* in donkeys from Campania (southern Italy)

Veneziano V.¹, Di Prisco F.², D'Alessio N.², Martiani U.², Fusco G.², Capelli G.³, Piantedosi D.⁴

¹Department of Pathology and Animal Health, University of Naples Federico II, Naples, Italy; ²Istituto Zooprofilattico Sperimentale del Mezzogiorno, Portici, Italy; ³Istituto Zooprofilattico Sperimentale delle Venezie, Legnaro, Italy; ⁴Department of Veterinary Clinical Sciences, University of Naples, Federico II, Naples, Italy

AIM: Equine piroplasmosis (EP) is a tickborne disease of equids (including horses, donkeys, mules and zebras), which is caused by infection with two intra-erythrocytic protozoan parasites, *Babesia caballi* and *Theileria equi*. The EP has a wide geographical range according to the distribution of tick vectors and is endemic in Africa, South and Central America, the Middle East, Asia and Southern Europe (Kouman et al, 2010, Vet Parasitol, 169: 273-278). In some European countries, including Italy, there was an increasing interest on donkeys due to their use as pets, for onotherapy and for the rediscovery of donkey milk as food source for children affected with cow milk allergy (Veneziano et al, 2011, Vet J, 190: 414-415). Despite this, there are few data regarding the donkeys parasitic diseases especially those with a protozoal etiology. Because information on EP in donkeys in Italy is very limited, the aim of this study was to determine the seroprevalence of *B. caballi* and *T. equi* infections and the associated risk factors, in donkeys, born and raised in Campania region - Southern Italy.

MATERIALS AND METHODS: The survey was conducted on 21 donkey farms from 16 municipalities. Blood samples were collected from 203 donkeys in autumn 2010. The sample size was calculated as proposed by Thrusfield M, 1995, Veterinary epidemiology, Blackwell Science, UK. Blood samples were collected in 21 donkey farms from 16 municipalities. General data, including gender, age, breed, use, period of grazing during year, presence of horses, dogs and ruminants in the farms were obtained through a questionnaire completed during sample collection. The IFAT was performed for the detection and quantitative determination of specific IgG antibody against *B. caballi* and *T. equi* (IFA IgG Kit, Fuller Laboratories). The cut-off value of 1:80 was used according to the manufacturer's instructions. The positive sera were then titrated in two-fold dilutions to determine the end-point titres. In order to evaluate possible risk factor associated to the seroprevalence, epidemiological data (gender, age, breed, use, lactation, grazing, presence of horse, dogs, ruminants) were offered to binary logistic models (SPSS for Windows, 13.0). Further, a complete clinical exam was done on each donkey.

RESULTS: The results of IFAT are shown in the table.

Antibody titer	n° positive /n° tested	Prevalence (%)
<i>B. caballi</i>	26/203	12.8
<i>T. equi</i>	44/203	21.7
Co-infected	46/203	22.7
Total	116/203	57.1

The antibody titers ranged from a dilution of 1:80 to 1:360 for *B. caballi* and 1:80 to 1:1280 for *T. equi*.

No statistically significant correlations were found between serological positivity and donkey gender, age, breed, use and grazing. *B. caballi* seropositivity were found higher in donkeys breed together with horses (OD=3.07; P<0.05). However, *T. equi* seropositivity were found higher in lactation animals (OD=4.34; P<0.05) and lower in the donkeys breed with dogs and ruminants in the farms (OD=0.4; P<0.01). For both parasites the co-infection status resulted as a significant risk factor (P<0.01). The clinical examination of the most seropositive animals failed to show any evidence of abnormalities. Only one donkey, with a titer of 1:640 against *T. equi*, showed the acute symptoms of disease and, particularly lethargy, fever, anaemia, hemoglobinuria and lymphnodes enlargement.

CONCLUSIONS: The preliminary data showed that *B. caballi* and *T. equi* are widespread among donkeys in Campania region. Although, almost all of the sampled animals were asymptomatic, some of these donkeys may act as parasite carriers; further studies will be performed by using molecular methods to detect the presence of parasites DNA from seropositive animals. Therefore, improved surveillance of EP is recommended for donkeys.