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RESEARCH REGARDING THE PREVALENCE OF HORSES NEOSPOROSIS IN VÂLCEA COUNTY

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Abstract: In horses, neosporosis is caused by two species of *Neospora*: *N. caninum* and *N. hughesi*. Typically, *N. caninum* causes reproductive disorders and neonatal mortality, while infection with *N. hughesi* induces mainly neurological disorders. The aim of this study was to identify the presence of *Neospora* spp. infection in horses from Vâlcea County. During the period April 2023 - June 2023, blood samples were taken from 92 horses, raised in a household system. The sampling was carried out from the jugular vein, in sterile vacutainers without anticoagulant. The samples were collected from horses from 10 localities of the county. The examination was performed at DSVSA Râmnicu-Vâlcea by ELISA with the ID Screen® *Neospora caninum* Indirect kit, from ID.Vet, France, according to the manufacturer's instructions. Of the 92 samples examined by ELISA, none were positive, only three being inconclusive (3.26%). The local prevalence of suspicious cases was 10% for each of the three localities where these cases were identified, and the overall prevalence was 1.08% / infected localities. All samples examined in Vâlcea County came from horses without clinical signs, used for household work.

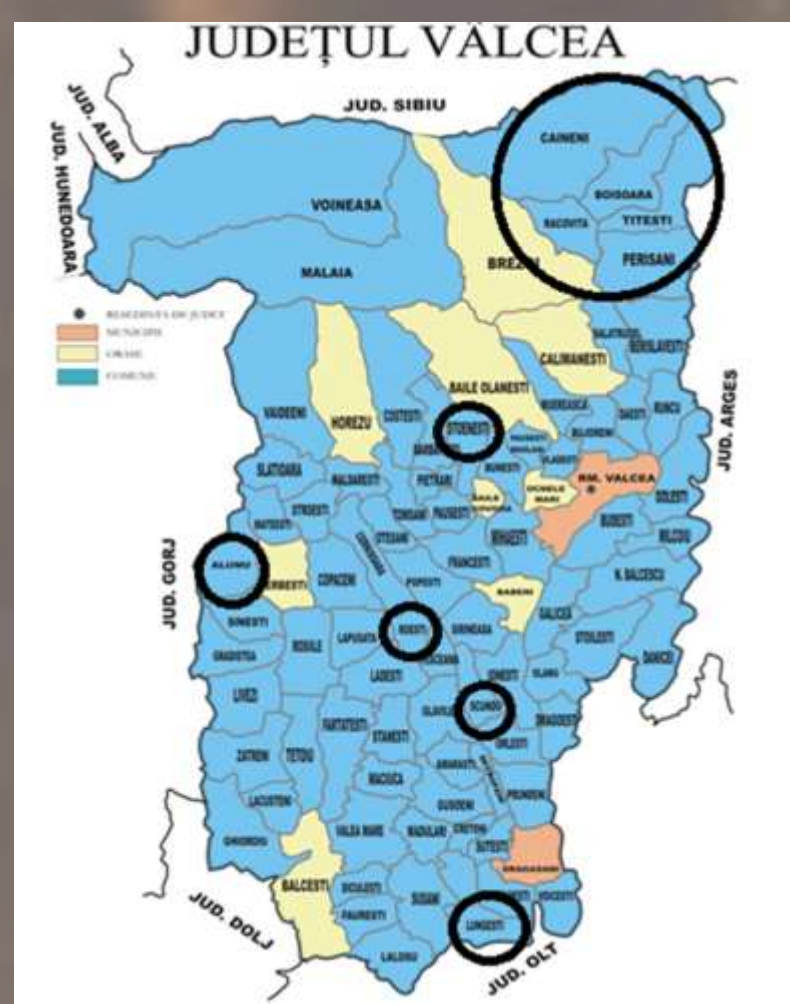
Keywords: neosporosis; horses; Vâlcea County; ELISA

• Introduction

While neosporosis is primarily known to affect cattle and dogs, equines can also be infected by *Neospora caninum* or *Neospora hughesi*, two distinct species with different host adaptations. *N. caninum* is mainly associated with reproductive issues and neonatal mortality, while *N. hughesi* tends to cause neurological disorders. Transmission in equines occurs both horizontally and vertically, with transplacental transmission playing a significant role, although its exact contribution to abortion remains unclear. This study aims to detect *Neospora* spp. infections in equines from Vâlcea County, Romania.

• Materials and methods

Between April and June 2023, blood samples were collected from 92 horses raised under backyard farming conditions in ten different localities across Vâlcea County, Romania. Samples were obtained via jugular venipuncture using sterile vacutainers without anticoagulant. Following serum separation, all specimens were transferred into labeled Eppendorf tubes and stored at -18°C until further analysis.



The detection of *Neospora caninum* antibodies was performed using the ID Screen® *Neospora caninum* Indirect ELISA kit (ID.Vet, France), according to the manufacturer's instructions. The serological testing and result interpretation were carried out at the Sanitary Veterinary and Food Safety Directorate in Râmnicu Vâlcea.

• Conclusions

- A total of 92 serum samples from equines originating from 10 localities in Vâlcea County, located in both mountainous and lowland areas, were serologically investigated.
- None of the tested samples were positive for anti-*Neospora* antibodies, with only three samples classified as doubtful.
- Further investigations are necessary to identify *Neospora* spp. infection, especially in cases of abortion or neurological manifestations.

• Results and discussions

Of the 92 equine serum samples analyzed by ELISA, none tested positive for *Neospora caninum*. However, three samples (3.26%) were considered inconclusive. The animals originated from ten localities in Vâlcea County, predominantly from mountainous and sub-mountainous areas. Specifically, 45.65% of the samples were collected from mountainous zones, 21.74% from sub-mountainous areas, and 32.61% from lowland regions. Doubtful results were recorded in three localities, each showing a local prevalence of 10%, while the overall prevalence of inconclusive results across the entire study population was 1.08%. All animals sampled were clinically healthy and used for household labor.

No.	Locality	No. of animals			% positive (local)	% doubtful (local)	% doubtful (of total)
		examined	doubtful	positive			
1	Stoenesti	10	0	0	0	0	0
2	Perisani	10	0	0	0	0	0
3	Căineni Greblești	10	0	0	0	0	0
4	Căinenii Mari	10	1	0	0	10	1,08
5	Alunu	10	0	0	0	0	0
6	Căinenii Mici	10	1	0	0	10	1,08
7	Roești	10	1	0	0	10	1,08
8	Lungești	10	0	0	0	0	0
9	Scundu	10	0	0	0	0	0
10	Robești	2	0	0	0	0	0

Although none of the tested equines were seropositive, the presence of a small number of inconclusive results highlights the potential for exposure to *Neospora* spp., especially given the asymptomatic nature of the infection in intermediate hosts. Such results may reflect early or low-level antibody responses that fall below the positive threshold, suggesting that exposure cannot be entirely ruled out. Serological evidence of *Neospora* infection in equines has been documented in several countries, often with variable prevalence rates influenced by species, age, clinical history, and geographical region. The absence of confirmed positive results in this study may reflect low exposure levels in Vâlcea County, or could be influenced by factors such as sample size and the timing of collection relative to potential exposure.