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PREVALENCE OF CRYPTOSPORIDIUM INFECTION IN CALVES, BY NON-MOLECULAR ASSAY, IN VÂLCEA, ROMANIA

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Abstract: Cryptosporidiosis is an important zoonotic disease caused by a apicomplexan parasites belonging to genus *Cryptosporidium*, clinically characterized by gastrointestinal disorders, pancreatic and hepatic disorders, respectively. Economic losses are reflected by growth delays, mortality and high treatment costs, respectively. The highest receptivity is found in the case of large and small ruminants, especially in calves aged between one week and three weeks. The aim of this study was to determine the prevalence of *Cryptosporidium* spp. in calves from Vâlcea County. To achieve this, samples were collected from several family-type microfarms. These samples were subjected to two methods of parasitological examination: direct smear and antigen rapid tests for *Cryptosporidium* spp. The overall prevalence of *Cryptosporidium* spp., in calves from Vâlcea County, Romania, was found to be 37,34% using direct smear and rapid antigen test.

Keywords: calves, *Cryptosporidium* spp., prevalence, direct smear, rapid antigen tests

• Introduction

Cryptosporidiosis is an important zoonotic disease caused by an apicomplexan parasites belonging to genus *Cryptosporidium*, clinically characterized by gastrointestinal disorders. Economic losses are reflected by growth delays, mortality and high treatment costs, respectively. The highest receptivity is found in the case of large and small ruminants, especially in calves aged between one week and three weeks. The high prevalence, recorded in animals, may be a consequence of the fact that the diagnosis of this protozoan occupies a low percentage in the routine diagnosis of veterinarians.

The aim of this study was to determine the prevalence of *Cryptosporidium* spp. in calves from Vâlcea County.

• Material and method

To achieve the proposed goal, 83 feces samples were collected, in plastic bags, from calves (fig. 1) reared in family-type micro-farms. Micro-farms are located in localities Alunu, Copăceni and Mateești, Valcea County in southern Romania (fig. 2). These samples were subjected to two methods of parasitological examination: direct smear and rapid antigen tests for *Cryptosporidium* spp. Individual sheets were made for each calf, including the following details: breed, age, sex, possible digestive disorders - diarrhea and matriculation number, respectively.

The statistical analysis was performed by GraphPad, QuickCalcs, Fishers exact test and Office Excel 2016.



Figure 1. Studied calves

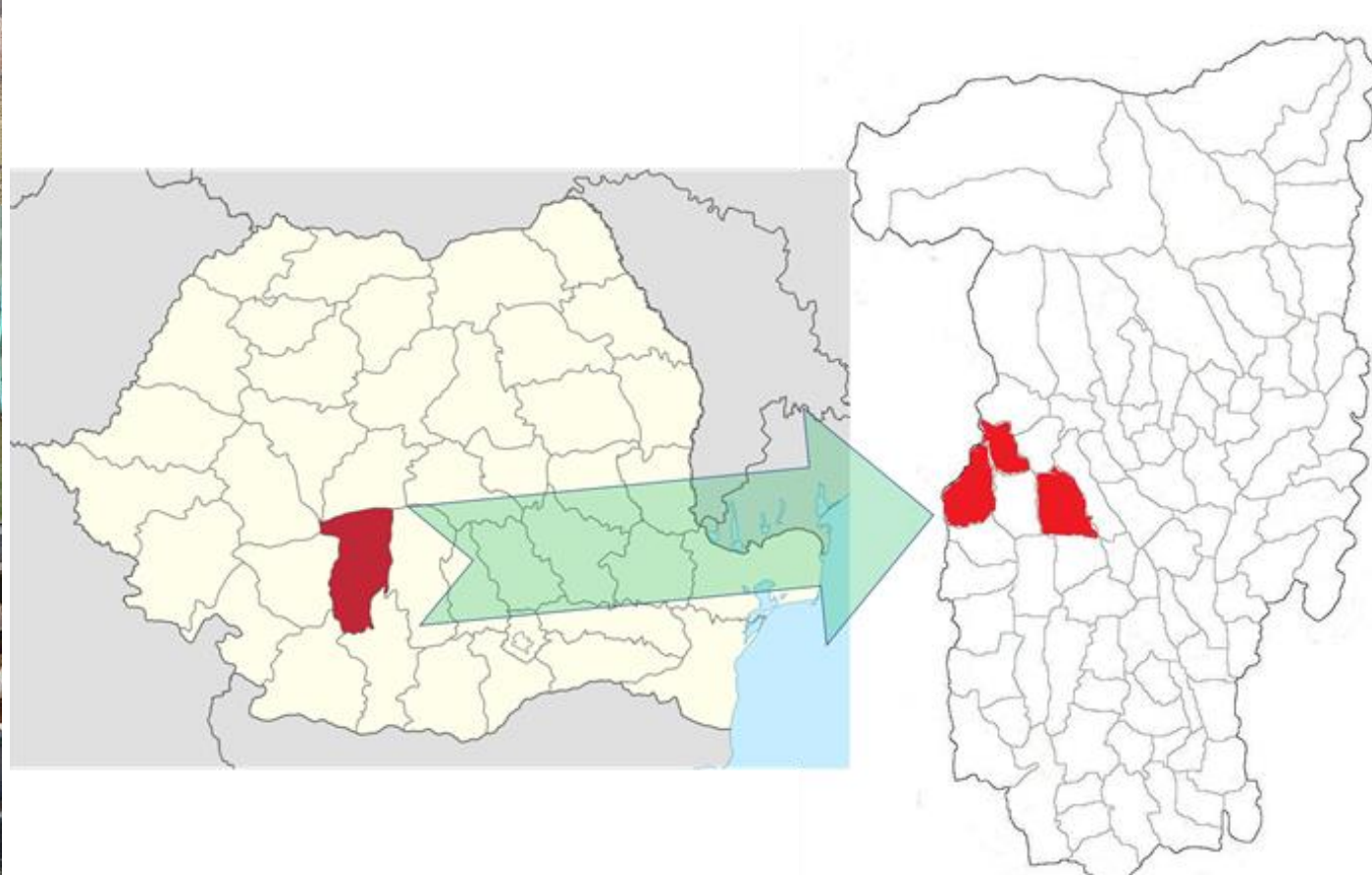


Figure 2. The area of origin of the samples from the calves studied

• Results and discussions

The 83 calves studied were grouped into 3 age categories as follows: 0-7 days (3 calves), 7-14 days (31 calves), 14-28 days (34 calves), 28-56 days (15 calves).

The overall prevalence of *Cryptosporidium* species, in calves from Vâlcea County, Romania, was found to be 37,34% (31/83) using direct smear and rapid antigen test (autumn period).

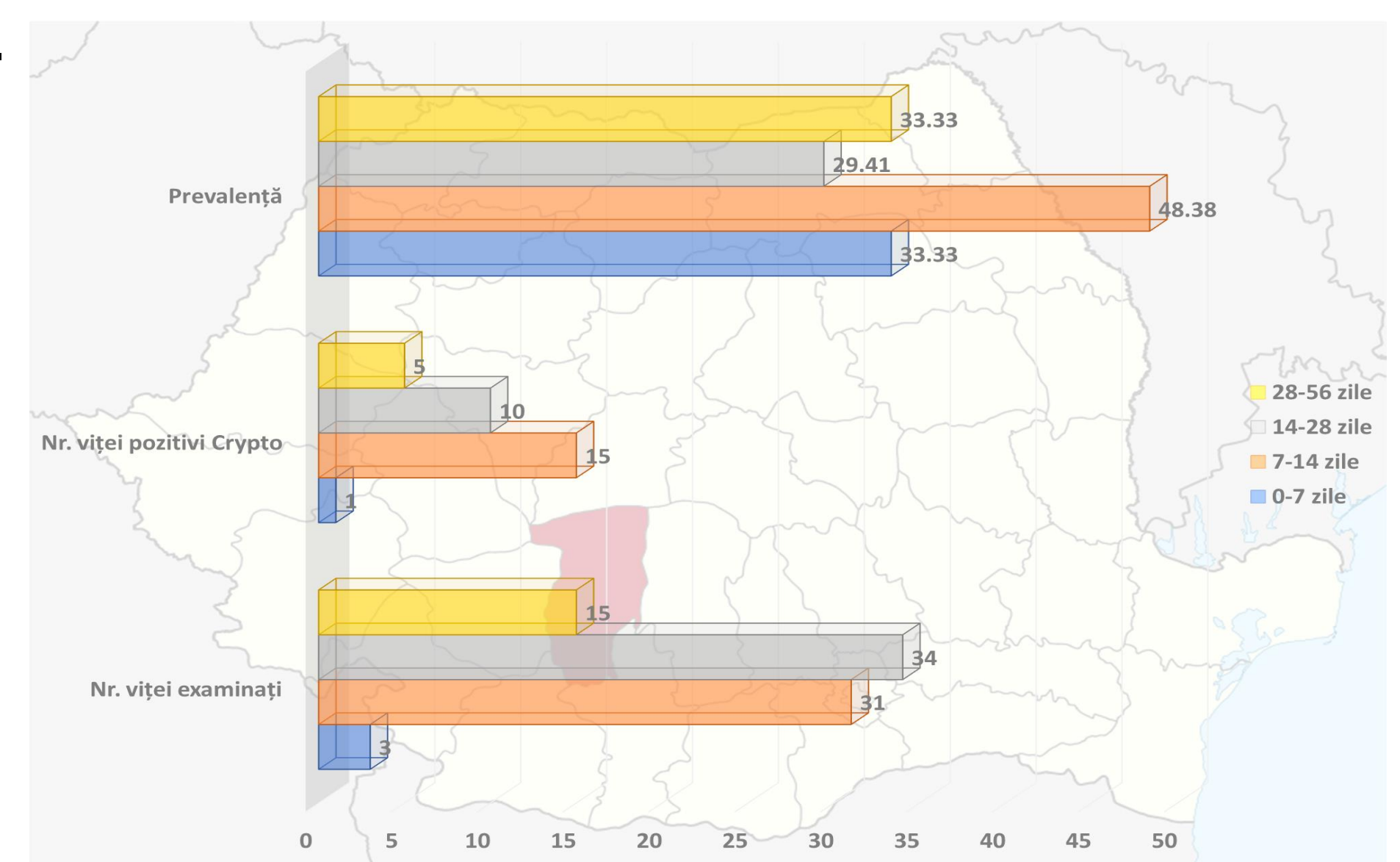
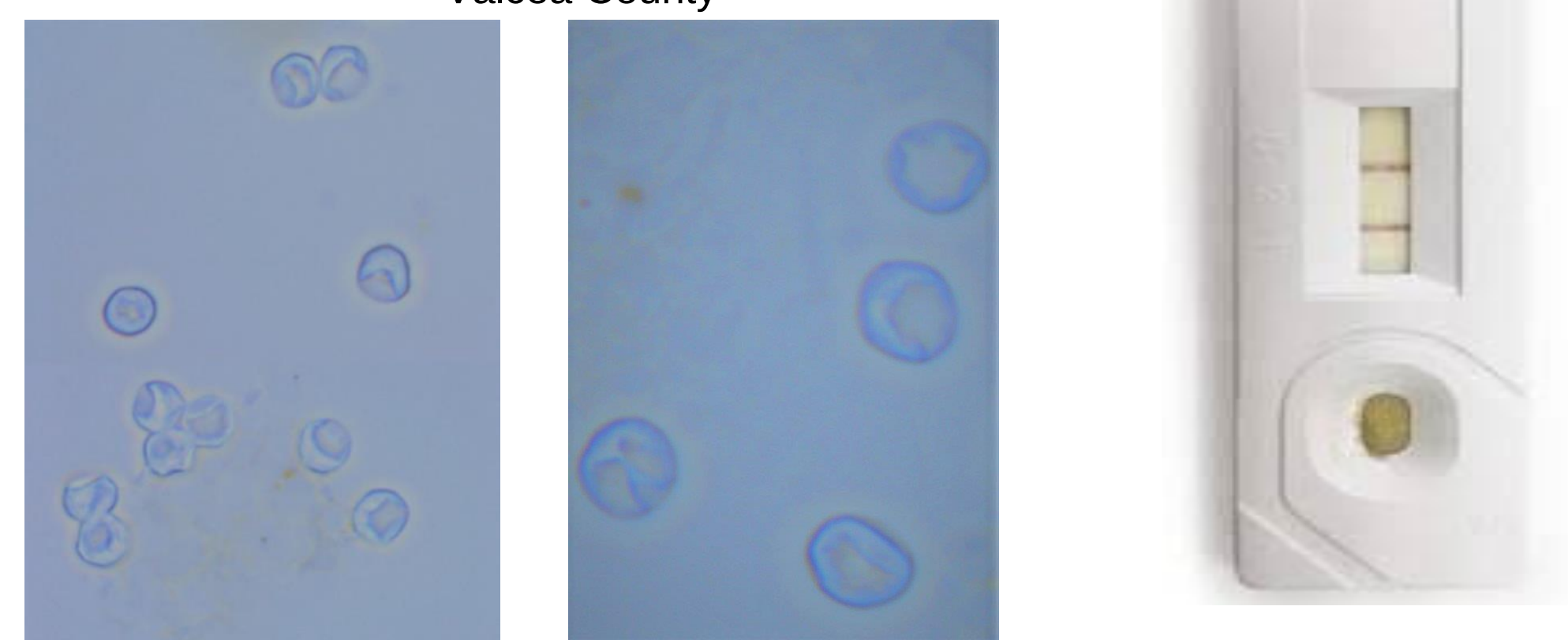


Figure 3. The prevalence of *Cryptosporidium* spp. in calves from Vâlcea County



In North-West and Central Romania, for the autumn period, the incidence of parasitism with *Cryptosporidium* spp. registered values of 16.80% +/-5.78% (Bejan, 2009). At the level of Western Romania, a prevalence of 41.6% was found (Imre, 2010).

• Conclusions

The prevalence of *Cryptosporidium* spp. infection, in calves from Vâlcea County, was 37,34%, with a minimum value of 33.33% for the age categories of 0-7 and 28-56 days and with a maximum value of 48.38% for the age category of 7-14 days. No statistically significant differences between positivity relative to different age groups were registered.