

## ABSTRACT

The aim of these theses was to summarize the knowledge about the use of xenodiagnostic methods in the past and their current potential for parasitological research. Xenodiagnosis is a diagnostic method using bloodsucking arthropods (disease vectors) as a biologic medium suitable for detection of parasites in the blood of investigated individuals (vertebrates). It is expected that parasites grow within the midgut of the vector and then are easily detectable microscopically. The method was used for the first time in 1914 by French researcher Émile Bumpt for detection of *Trypanosoma cruzi*, causative agent of Chagas' disease. During few decades and thanks to engagement of many scientific groups, it became one of the most efficient and effective diagnostic methods. For instance, the most suitable species of vectors, the experiment duration and the optimal numbers of vectors and/or experiments were assigned to get reliable results. Xenodiagnosis as a diagnostic method lost its importance after introduction of molecular methods, first of all after onset of polymerase chain reaction. At present, however, the xenodiagnosis is suitable for experiments studying if the host is infectious for the vector. This method appears as a good tool for testing of new reservoir hosts and for the monitoring of the role of various animals in circulation of vector-borne diseases. Therefore, it was repeatedly used in studies on leishmaniasis of domestic animals, particularly dogs infected by *Leishmania infantum/chagasi*, as well as of free living animals which are suspected as reservoirs of various *Leishmania* species in endemic regions (hares, rabbits, rats and hyraxes infected by *L. infantum* or *L. tropica*).

**Keywords:** Xenodiagnosis, leishmaniasis, Chagas' disease, reservoir host, *Leishmania infantum*