FIRST MOLECULAR DETECTION OF *LEISHMANIA INFANTUM* IN *SERGENTOMYIA MINUTA* (DIPTERA, PSYCHODIDAE) IN ALENTEJO, SOUTHERN PORTUGAL

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Introduction

- Five phlebotomine sand species are known in Portugal. *Phlebotomus perniciosus* and *P. ariasi* are proven vectors of *Leishmania infantum*
- *Sergentomyia minuta* infected with *L. major* was detected in Algarve, by molecular techniques (Campino et al. 2013)
- There are three known *foci* of leishmaniasis: Trás-os-Montes and Alto Douro, Lisbon and Algarve regions. However, canine leishmaniasis have been reported in other regions, namely Alentejo (Évora and Beja)
- **The aims of this study were: to identify the phlebotomine sand fly species in different biotope types, to determine their relative abundance and the *Leishmania* infection rate, in Évora and Beja districts**

Methods

- Sand fly captures - May-November 2016, Évora and Beja (Alentejo) **(Fig. 1)**
- **CDC light-traps - domestic and peridomestic biotopes (Fig. 2)**

Fig. 2 - Diferents biotopes in Alentejo

- Morphological identification of phlebotomine species by entomological keys
- *Leishmania* infection by molecular diagnosis in 28 non-blood-fed females wa performed as previously described by Pita-Pereira et al., 2008, witl modifications. Rigorous procedures were assumed in order to control potentia contamination, e.g. we included negative control groups (male sand flies) in the DNA extraction.

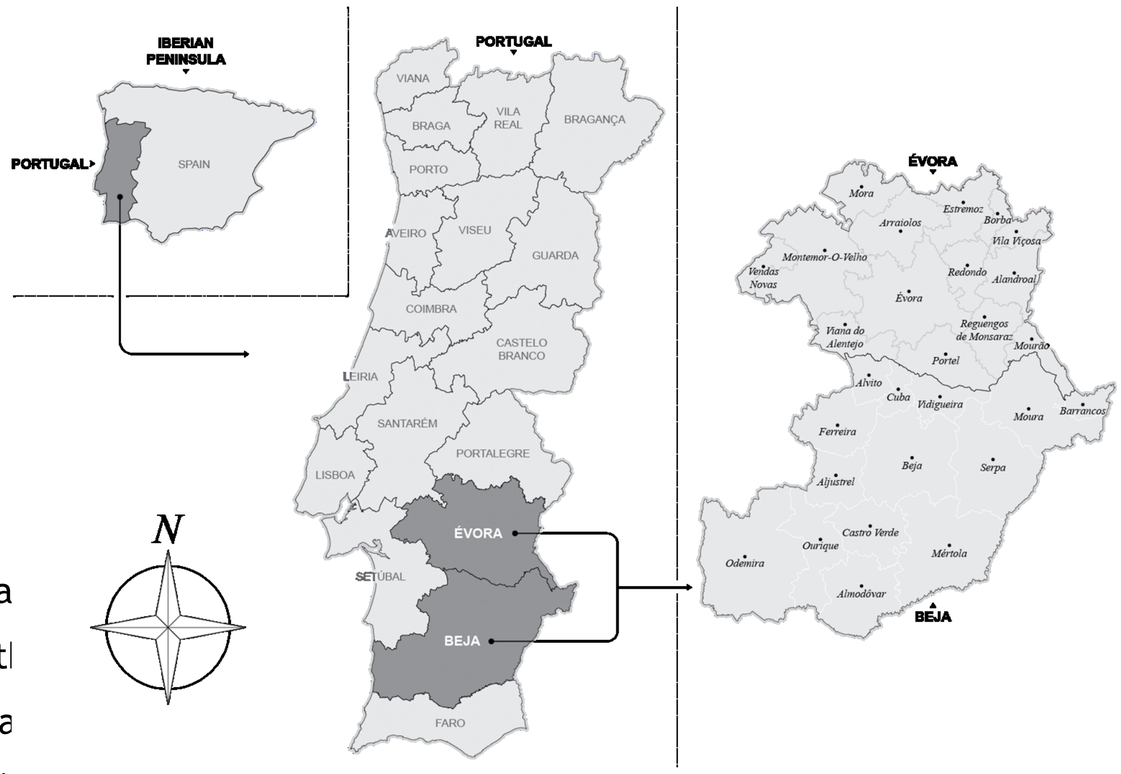

Fig. 1 - Portugal map and are signed the districts and municipalities of Alentejo where the sand fly captures were performed in 2016

Results and Conclusions

1. 147 sand flies were collected from May to August, 2016: 109 ♂ and 38 ♀
2. 48 CDC light traps were used: 48% (23/48) positive for the presence of sand flies
3. The Relative abundance of female sand fly species was determined **(Fig. 3):**

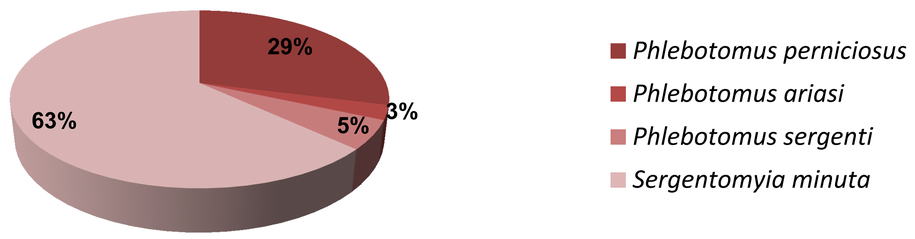

Fig. 3 - Relative abundance of female sand fly species captured in Évora and Beja, 2016

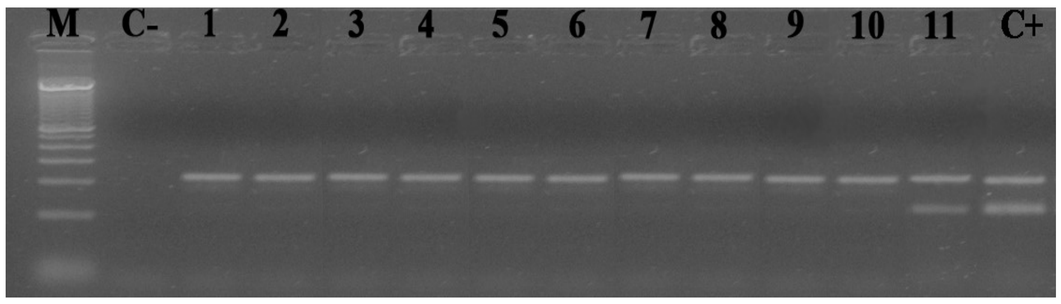

Fig. 4 - PCR result from tested *Leishmania* samples in 2% agarose gel electrophoresis. Lane M - Marker (1kb DNA ladder), Lane C- negative control, Lanes 1 and 2- male *Phlebotomus* specimen; Lanes 3-10 - negative *Phebotomus* female, 11 - positive female for *Leishmania*, C+ reaction positive control

4. One specimen (3.5%) of *S. minuta* (in a peridomestic biotope of Beja) was positive for *L. infantum* by molecular techniques. This is the first description of *S. minuta* infected with *L. infantum* in Portugal. This occurrence combined with previous report of *Sergentomyia* spp. infected with *L. major* and others species, supports the potential incrimination of this sand fly specie as *Leishmania* vector (Maia & Depaquit, 2016). Furthermore, recently, human DNA was detected in engorged *S. minuta* in Algarve, Portugal (Maia et al, 2015).

5. In 2017, we will continue the sand fly captures in the same and other areas, intending to clarify these and others issues, once in 1999-2000 none infected sand fly females was detected in Évora region (Alves-Pires et al, 2004).

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