# Distribution, Abundance and Infection of *Lutzomyia longipalpis*, vector of Visceral Leishmaniasis in three Municipalities of the Department of Caaguazú, Paraguay.

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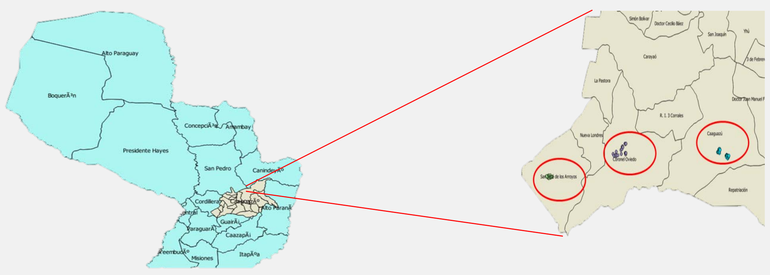
## INTRODUCTION

Leishmaniasis is a zoonotic disease that has in common to be caused by protozoa of the genus Leishmania and transmitted by the action of hematophagous Diptera – Psychodidae (sandflies) (1-3). Sandflies are vectors of several infectious and parasitic agents such as Phlebovirus, *Bartonella bacilliformis* and *Leishmania* spp. Females are the only insects capable of transmitting the known Leishmania species. It is considered a reemerging disease, and a growing problem of public health due to the increase in cases as a consequence of the greater exposure of people to vectors, as well as exposure to environmental risk factors, mass migrations, urbanization and deforestation. (WHO, 2010). Therefore, this work aims to investigate the transmission conditions of Leishmania sp. and the conditioning risk factors in the urban and rural communities of Caaguazú.

## METHODOLOGY

### Population and study area




### Procedures




## RESULTS

Morphological classification:

*40 Lutzomyia longipalpis*

*1 Nyssomyia whitmani*

Frequency of L. longipalpis captured by Municipality, November 2017 / October2018.

| | Caaguazú | Cnel. Oviedo | San José | Total | Frecuencia (%) |
|---|---|---|---|---|---|
| Males insects | 11 | 13 | 3 | 27 | 66 % |
| Female insects | 9 | 5 | 0 | 14 | 34 % |
| Total | 20 (48,7%) | 18 (43,8%) | 3 (7,3%) | 41 | 100 % |

Association Presence / Absence sandfly and features Micro habitat Cnel. Oviedo, S. José y Caaguazú, Paraguay.

| FLEBOTOMOS (LUTZOMYIA LONGIPALPIS) | Significancia |
|---|---|
| PRESENCIA /AUSENCIA DE ANIMALES | |
| Perro | **0,06760754** |
| Gato | 0,567889 |
| Gallina | 0,7808425 |
| VEGETACION | |
| Arboles | 0,75948113 |
| Arbustos | 0,14654589 |
| Plantas ornamentales | 0,83534779 |
| CARACTERISTICAS DEL PATIO | |
| Tierra | 0,75948113 |
| Tierra anegada | **0,931668** |
| Guano | 0,57926429 |

PCR - ITS sandflies captured in Cnel Oviedo, Caaguazú and S. José. districts

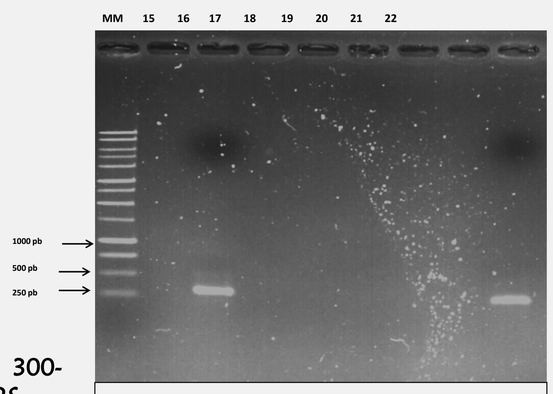



**Imagen N°2.** Electroforesis en gel de agarosa al 1%. **MM:** Marcador de peso molecular de 1 kb (Promega), **15:** CO2 7 F4 **16:** CO2-F1 ♀ **17:** CAA5 (5) **18:** PBS **19:** CAA5(3) **20:** CAA5(6) **21:** $H_20$ Control negativo **22:** CO7(2) ♂CONTROL POSITIVO

ITS1 amplicon size of Leishmania: 300-350 bp with primers and L5,8S LITRS

Infection rate PCR - ITS = 2.4%
Presence of *Leishmania sp.*

## CONCLUSION

In 108 traps placed in 3 districts 9.3% infestation with sandflies was obtained.
Lutzomyia longipalpis was the main species found so far. 1 species of Ny. whitmani
Lu. Longipalpis proved to be the most abundant species, followed by Ny. whitmani
Greater abundance of sandflies was observed in the Municipality of Caaguazú (characteristics of the macro habitat). Indices of low phlebotomy infection (2.3%)

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