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Exploring natural breeding sites of Phlebotominae Sandflies in xerophytic areas of the Dry Chaco Bioregion, Argentina.

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Abstract

In Argentina, eco-epidemiological studies of leishmaniasis are mainly focused on the abundance and diversity of adult vectors. However, little is known about the immature stages of Phlebotominae and their preferred breeding sites. This study aims to determine the potential breeding sites of Phlebotominae in the Dry Chaco, a xerophytic area where most cutaneous leishmaniasis (CL) cases in the province are reported. The study was conducted from April 2023 to March 2024 in four households located in rural settlements near Juan José Castelli, Chaco. Monthly surveys were carried out to identify natural breeding sites of Phlebotominae through organic substrate (OS) collection and the installation of emergence traps (ETs) in different ecotopes: household, peridomestic area, forest, and *vizcacha* burrows (*Lagostomus maximus*). OS samples were observed in the laboratory for 60 days and then subjected to flotation with a supersaturated NaCl solution to detect immature stages and/or emerged adults. ETs were rotated every 60 days within the same ecotope. Due to the impossibility of installing ETs inside burrows, sticky traps (STs) were placed at burrow entrances to indirectly study adult emergence. Out of 360 OS samples, a single *Migonemyia migonei* female was found in a peridomestic area in April 2023. A total of 200 ETs were installed, capturing 40 Phlebotominae: *Mg. migonei* (75%), *Cortelezzii complex* species (22.5%), and *Nyssomyia neivai* (2.5%). The peridomestic area had the highest emergence rate (80%), followed by the household (17.5%) and the forest (2.5%). STs placed at burrow entrances captured 104 Phlebotominae, with *Evandromyia chacuensis* (26.9%) being the most common, followed by *Ev. cristacapita* (20.2%), *Ev. sallesi* (16.3%), *Mg. migonei* (11.5%), *Cortelezzii complex*, *Ev. termitophila*, *Ev. cortelezzii*, and *Pintomyia torresi* (<10%). The findings suggest that peridomestic areas and burrows could be the most suitable sites for vector development in these xerophytic areas.

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