

## SUMMARY OF THESIS

FALAVIGNA-GUILHERME, Ana Lucia - Situação triatomínica domiciliar e transmissão da doença de Chagas em municípios do noroeste do Paraná e ilhas do Alto Rio Paraná. Maringá, 2000. (Tese de Doutorado - Universidade Estadual de Maringá, Paraná, Brasil).

### TRITOMINES IN THE DOMICILIARY ENVIRONMENT AND CHAGAS DISEASE TRANSMISSION IN MUNICIPALITIES IN NORTHWEST PARANÁ STATE, BRAZIL

Data are scarce regarding triatomine species in the Brazilian state of Paraná. The objective of this work was evaluate the domestic units (DU) in rural areas of municipalities in Paraná in entomological surveillance by Fundação Nacional de Saúde (FUNASA) regarding triatomine infestation, variables were sought that could be associated with the frequency of triatomines in the municipality, the rate of infection with *Trypanosoma cruzi* and the insects' food sources, seroprevalence of humans and domestic animals besides to promote sanitary education activities for the rural community and health professionals of municipalities, from June 1996 to February 2000. The investigated municipalities were Paiçandu, Dr. Camargo, Floresta, Ourizona, Marialva, Mandaguari, Porto Rico, Maringá and Floriano district in Northwest Paraná and Cândido de Abreu municipality located in the central part of the state. Fieldwork in partnership worked the Universidade Estadual de Maringá (UEM) with the FUNASA weekly. During site visits an epidemiological data collection instrument was filled for each DU. Data from the epidemiological forms were entered into logistical model using the Statistica program (version 8.0).

Sanitary education activities were made after FUNASA's technicians were trained, as well as teachers, workers and health graduation students' from the UEM.

Triatomines were found in seven of the nine analysed municipalities except for Cândido de Abreu and Ourizona. Of the 567 DUs studied, triatomine species were encountered in 72 (12.7%), including 56/509 (11.1%) that were inhabited and 16/58 (27.6%) that were uninhabited. Paiçandu was the most infested with 22/60 (36.7%) of the inhabited DUs and 9/12 (75%) of the uninhabited DUs. Of the 658 triatomines collected, 575 (87.3%) were *Triatoma sordida*, of which 557 (97.5%) were captured in the peridomestic environment or uninhabited DUs. *Panstrongylus megistus* was the second most common, accounting for 82 (12.5%) of the captured specimens, 50 (61.0%) of which were located in the intradomiciliary inhabited environment. One case of *Rhodnius neglectus* was found in a dwelling.

Different variables were considered decisive for the presence of triatomines across the municipalities in the statistical analyses. In Paiçandu, "proximity to wooded areas" was the most important factor with a risk of 1.27, in addition "to longer length of residence". In the Mandaguari, Maringá and Cândido de Abreu municipalities, the existence of "inhabited houses" was the determining factor for triatomine infestation. In the municipalities of Floresta, Marialva and Ourizona and the Floriano district, triatomine infestation at the time of the study was determined by the fact that the "DU had been infested in the past". On the other hand, the logistic model showed that *T. sordida* infestation in Dr. Camargo municipality was associated with the variables "DU positive in the past", "presence of an abandoned DU" and proximity of "barn" to the domicile, "number of

peridomestic annexes", "proximity of DU to wooded area", "presence of chicken coop in inhabited DU" and "proximity of pigsty to domicile". DU infestation with triatomines in the municipality of Porto Rico was not associated with any of the study variables in the logistical model.

The 2 756 ecotopes investigated, abandoned house, chicken coop and intradomestic environment was the most infested done using the chi-square test ( $X^2_{(11\text{ gr})} = 165.56; p < 0.01$ ).

Of 294 (44.4%) triatomines examined, 39 (13.4% *T. sordida* and 13.5% *P. megistus*) were positive for *T. cruzi*. The municipality of Paiçandu had the most triatomines and the highest percentage of *T. cruzi* infection (19.5%), followed by Mandaguari (15.0%) and Maringá (11.3%). In Paiçandu the majority was *T. sordida*. In Mandaguari was collected exclusively *P. megistus* and in Maringá the majority was *P. megistus*. Precipitin tests were done on 241 samples and indicated that birds were the most frequent blood-meal source, followed by rodent, opossum and dog. Three specimens were reactive for human blood which two specimens of *T. sordida* and one *P. megistus*.

Seroprevalence was done on 4.2% of the rural population within the study's catchment area. Of the 1,753 human blood samples, 21.1% (370) were collected from children under 15 years old and were negative, as were the samples from 122 dogs and 49 cats.

The workers of sanitary education activities prepared a manual of instructions to be given out at each time and drew up some guidelines to be followed in case of a triatomine report or of an individual supposedly infected with *T. cruzi*. The program included 742 families, 2,300 pupils and 27 teachers of 18 elementary schools. These events comprised several specialists with 40 participants, 21 meetings in health centers and the handing over of a triatomine sampler. It was discussed the necessity of all being actively involved in sanitary watching programs.

These data allowed to conclude that: a) *Triatoma infestans* was eradicated of region; b) *T. sordida*, *P. megistus* and *R. neglectus* are the species involved in triatomines infestation of domestic units in rural areas of evaluated municipalities; c) these species could be infected with *T. cruzi* in a considerable rate; d) *T. sordida* is the most common specie mainly captured in the peridomestic environment and in uninhabited houses; e) *P. megistus* is the second most common found specie, captured mainly in the intradomiciliary environment of inhabited DUs in the Northwest of Paraná; f) It is necessary to maintain entomological surveillance measures mainly in the rural area peridomiciles of the investigated municipalities, education programs and community involvement in order to support the Chagas Disease Control Program conducted by the Health Ministry.