

**TOPIC:**

2. Mosquito-borne diseases (dengue, malaria, fiebre amarilla, zika, chikungunya)

**APPROACH:**

2. Vector biology and eco-epidemiology

**Assessment of arboviruses circulation in wild rodents and birds in the Upper Paraná Atlantic Forest**

**Keywords:** mosquito-borne diseases; vector biology; eco-epidemiology; arboviruses; wild rodents; wild birds.

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Arboviruses are transmitted by hematophagous arthropods, many of them of sanitary importance for their impact on health, economy and their wide geographic distribution. In the sylvatic cycle, different wild vectors and hosts are involved. Some of these viruses belong to the *Flavivirus* and *Alphavirus* genera and are transmitted by different species of mosquitoes. Several wild vertebrates participate in the sylvatic cycles of these viruses as main or alternative hosts. Our aim was to evaluate the circulation of *Flavivirus* and *Alphavirus* genera in the Upper Paraná Atlantic Forest (UPAF) of Misiones, Argentina. We conducted a serological survey in April 2021 in three protected areas: Piñalito, Cruce Caballero and Moconá Provincial Parks, where we captured small rodents with Sherman-like traps, and birds with mist nets. We identified captured individuals at level specie and collected serum samples according to recommended veterinary protocols. We tested antibodies for *Flavivirus*: Yellow fever virus (YFV), West Nile virus (WNV), Saint Louis encephalitis virus (SLEV), Ilheus virus (ILHV), and *Alphavirus*: Madariaga (MADV), using the plaque reduction neutralization test under agarose. We captured a total of 112 rodents (Piñalito: N = 52, Cruce Caballero: N = 28 and Moconá: N = 32) and 109 birds (Piñalito: N = 55 and Moconá: N = 54). We analyzed the overall prevalences of SLEV, MADV, and YFV for rodents and SLEV, WNV, MADV and ILHV for birds. In rodents, the overall seroprevalence of arboviruses was 1.92% in Piñalito (N = 52 MADV in *Akodon montensis*), 3.57% in Cruce Caballero (N = 28, MADV and YFV in *A. montensis*) and 0% in Moconá. In birds the overall prevalence of arboviruses was 1.81% in Piñalito (N = 55, SLEV in *Conopophaga lineata*)

and 1.85% (N = 54, WNV in *Cyanoloxia glaucocaerulea*) and 1.96% (N = 51 ILHV in *Leptotila verreauxi*) in Moconá. These results represent novel information about arbovirus circulation in rodents and birds in the UPAF. Our results highlight circulation of different arboviruses in the UPAF, whose main or alternative hosts have yet to be identified. The study of these hosts could yield novel information about the eco-epidemiology of arboviral diseases of importance to human and animal health, and provides novel tools to use in the implementation of public health programs.