Ultrastructural characterization of *Gracilioxyuris agilisis* and *Didelphoxyuris thylamisis* parasites of small marsupials in the Brazilian Pantanal

Graciele dos Santos Miguel Aguiar[1], Eduardo José Lopes Torres[1], Beatriz Elise de Andrade Silva[1]

1. Laboratório de Helmintologia Romero Lascasas Porto, Departamento de Microbiologia, Imunologia e Parasitologia, Universidade do Estado do Rio de Janeiro, RJ, Brazil.

Nematodes are a group which is highly taxonomically challenging due to their diversity, and lack of specialists. In this study, we report the occurrence of oxyurids: *Gracilioxyuris agilisis* (Feijó et al, 2008) and *Didelphoxyuris thylamisis* (Gardner & Hugot, 1995) in marsupials from Corumbá, state of Mato Grosso do Sul, Brazil. Using integrative taxonomy, employing light microscopy and scanning electron microscopy, we were able to characterize and distinguish these genera. The differentiation is based on the male morphology, in *G. agilisis*, the tip of the spicule is straight and pointed, and the mamelons of the rough area extend from the posterior region to the middle of the body. In *D. thylamisis*, the tip of the spicule is rounded, and the mamelons of the rough area extend from the posterior region almost reaching the anterior region. In both, the anterior part is very similar, with three distinct lips, four labial papillae around the oral opening, two amphids, a lateral wing composed of two longitudinal ridges and three esophageal teeth. In females, the differences were observed in the anterior part and are almost imperceptible. In *D. thylamisis*, the cephalic structures are arranged in a “hollow-headed”, while in *G. agilisis*, the anterior end has a “dome-shaped”, where all the cephalic structures are grouped. In addition, we identified other imperceptible differences in the females: in *D. thylamisis*, there is a defined cephalic wing, which extends to the beginning or middle of the bulb. In *G. agilisis*, the females do not have this cephalic wing, although their cuticle can, in some situations, be confused with this structure. The characterization and morphological identification of females of *G. agilisis* and *D. thylamisis* expands the knowledge about parasite diversity in tropical environments. Their high similarity highlights the taxonomic complexity of oxyurids, reinforcing the need for integrative approaches for accurate identification.

Supported By: FAPERJ-JCNE, CNPq-Universal, UERJ, FINEP

Keywords: Nematoda, Marsupials, Morphology