

Genetic population structure and hybridization in two sibling species, *Tomoplagia reticulata* and *Tomoplagia pallens* (Diptera: Tephritidae)

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ABSTRACT. *Tomoplagia reticulata* and *T. pallens* are sibling species that are specialists on *Eremanthus glomerulatus*. Besides adult terminalia, they show slight morphological differences and distinct geographic distributions. Once, however, they were found sympatrically. Using data from allozyme and mtDNA, we examined patterns of intra- and interspecific genetic structure, and investigated the possible occurrence of gene flow between them. Both species showed low diversity and high genetic structure, which can be linked to their high degree of specialization. Larval development occurs within flower heads, tissues that are available only during a short period of the year. Afterward, as they do not hibernate, they probably suffer a great reduction in population size, which leads to low genetic diversity. As monophagous insects, their population structure may correspond to the fragmented distribution of *E. glomerulatus*, which could isolate fly populations and increase inbreeding within them. One population exhibited a mixed genetic composition, compatible

with one hybridization season when species were sympatric. This hybridization seems to be a rare event, due to *T. pallens* unusual range expansion.

Key words: Allozymes; Asteraceae; Campo rupestre; Cerrado; *Eremanthus glomerulatus*; mtDNA