



Karyotype studies on populations of two *Hypochoeris* species (*H. catharinensis* and *H. lutea*), Asteraceae, endemics to southern Brazil

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ABSTRACT. *Hypochoeris* is an excellent system for studying different modes of chromosome evolution in plants. We carried out a cytogenetic analysis on populations of 2 *Hypochoeris* species, comprising 10 populations of *H. catharinensis* and 5 of *H. lutea*, to assess possible changes on chromosome organization in this interesting genus. Conventional Feulgen staining and fluorescent banding revealed that the general aspects of chromosome morphology for all populations of both species were similar, evidence of the typical bimodal karyotypes with $2n = 8$ chromosomes that characterize the South American *Hypochoeris*. Comparative analysis of the karyotypes identified minor variations in the absolute size and arm ratio of corresponding

chromosome pairs. One population of *H. lutea* was entirely polyploid adding a novel cytotype to this species. Fluorescent banding revealed strong chromomycin A₃ (CMA₃)-positive signals on both arms of chromosomes 3 and 4 of *H. catharinensis*, revealing a new pattern for the distribution of GC-rich heterochromatin in *Hypochoeris*. A strong CMA₃-positive signal was observed on the short arm of chromosome 3 in one population of *H. lutea*, while the other populations validated the CMA₃ pattern already described for this species. While the overall karyotype similarities of the 2 species are in compass with all South American *Hypochoeris*, the presence of unusual large blocks of GC-rich heterochromatin suggests that chromosome rearrangements, related to dispersion of heterochromatin, are taking place in the karyotype of *H. catharinensis*. The novel polyploid cytotype identified in *H. lutea* provides support that polyploidization is an active process in the mode of chromosome evolution in *Hypochoeris*.

Key words: Asteraceae; Chromomycin A₃ banding; Polyploidy; Karyotype evolution