

Cytogenetical and cytotaxonomical analysis of some Brazilian species of *Eleocharis* (Cyperaceae)

Carlos Roberto Maximiano da Silva^A, Maria Socorro González-Elizondo^B,
Letícia do Nascimento Andrade de Almeida Regoc, José Marcelo Domingues Torezanc
and André Luís Laforga Vanzelac^D

^AInstituto de Biociências, Letras e Ciências Exatas, UNESP, São José do Rio Preto 15054-000, SP, Brazil.

^BInstituto Politécnico Nacional, CIIDIR and COFAA, Durango, Dgo. 34000, Mexico.

^CLaboratório de Biodiversidade e Restauração de Ecossistemas, CCB, Universidade Estadual de Londrina, Londrina 86051-990, PR, Brazil.

^DCorresponding author. Email: andrevanzela@uel.br

Abstract. Karyotype analysis of 21 samples of 11 species of *Eleocharis* (Cyperaceae) from 10 localities in Brazil, showed the presence of chromosomes without primary constrictions and parallel movement of chromatids at metaphase–anaphase transition. Only the terminal nucleolar constrictions (satellites) were visualised. The chromosome numbers varied from $2n=6$ in *E. subarticulata* to $2n=54$ in *E. acutangula*, but the chromosome basic number $x=5$ was confirmed. Generally, C-CMA₃ + bands appear mostly in the extremities of the chromosomes, associated to NOR, and interstitial C-CMA₃ bands were found only in *E. geniculata* and *E. acutangula*. C-DAPI+ bands were not found. Fluorescence *in situ* hybridization (FISH) with the 45S rDNA probe was performed in five species. The results showed from four to eight hybridization signals, always terminal. The analysed species include representatives of the following three subgenera of *Eleocharis* that occur in Brazil: *Limnochloa*, *Scirpidium* and *Eleocharis*. Species from the subgenus *Limnochloa* have small and numerous chromosomes. The remaining species, belonging to subgenera *Eleocharis* and *Scirpidium*, possess fewer and larger chromosomes. In subgenus *Eleocharis*, karyotypes of the section *Eleocharis* were differentiated by symploidy, agmatoploidy and polyploidy, whereas species of the section *Eleogenus* were all polyploids. Polyploidy seems to be the most frequent event in the karyotype differentiation in *Eleocharis*, but changes in the chromosome size and repetitive DNA sites were also observed. in *Eleocharis maculosa*