

## Chromosome reduction in *Eleocharis maculosa* (Cyperaceae)

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**Running title:** Chromosome reduction in *Eleocharis maculosa*

## Abstract

Chromosome numbers in Cyperaceae lower than the typical basic number  $x = 5$  have been described for only three species: *Rhynchospora tenuis* ( $n = 2$ ), *Fimbristylis umbellaris* ( $n = 3$ ) and *Eleocharis subarticulata* ( $n = 3$ ). *Eleocharis maculosa* is recorded here as the fourth species of Cyperaceae that has a chromosome number lower than  $2n = 10$ , with  $2n = 8, 7$  and  $6$ . The karyotype differentiation in *E. maculosa* was studied using conventional staining (mitosis and meiosis), FISH with 45S and 5S rDNA and telomere probes. The results allow us to determine which chromosomes of the chromosome race with  $2n = 10$  fused to form the remaining reduced numbers, as well as to understand how the symploidy and translocation mechanisms were important in karyotype differentiation and the formation of chromosome races in *Eleocharis*.

**Key words:** *Eleocharis*, FISH, holocentric chromosomes, meiosis, rDNA, symploidy.