Online journal ISSN - 1676-5680
GMR Genetics and Molecular Research
EVOLUTION AND TECHNOLOGY

Chromosome number and cytogenetics of *Euphorbia heterophylla* L.

J.R. Aarestrup[1], D. Karam[2] and G.W. Fernandes[3]

[1]Departamento de Biologia Geral, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brasil
[2]Laboratório de Herbicidas e Manejo de Plantas Daninhas, Empresa Brasileira de Pesquisas Agropecuárias (EMBRAPA), Sete Lagoas, MG, Brasil
[3]Departamento de Ecologia, Laboratório de Ecologia Evolutiva de Herbívoros Tropicais, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brasil

Corresponding author: J.R. Aarestrup
E-mail: jroriz@yahoo.com.br

Genet. Mol. Res. 7 (1): 217-222 (2008)
Received December 5, 2007
Accepted December 17, 2007
Published March 4, 2008

ABSTRACT. *Euphorbia heterophylla* L. (Euphorbiaceae) is a herbaceous species of great economic importance due to its invasive potential and consequent damage to agriculture and pasture land. For the first time, we provide information on its chromosome number, morphology, and behavior of mitotic chromosomes. Seeds were germinated and submitted to four treatments to obtain metaphases: 0.5% colchicine for 2 to 5 h, at ambient temperature; 0.5% colchicine for 16 to 24 h; 0.0029 M 8-hydroxyquinoline (8-HQ) for 2 to 5 h at ambient temperature, and 0.0029 M 8-HQ for 16 to 24 h at 4°C. The material was then fixed in methanol:acetic acid (3:1) and kept at -20°C for 24 h. Roots were macerated in the enzyme solution of Flaxzyme™ (NOVO FERMENT™)-distilled water (1:40) at 34°C for 2 h and later fixed again. Chromosome preparations were obtained by the dissociation of the apical meristems. The best chromosome preparations were obtained with the use of 8-HQ for 21 h 30 min at 4°C. *E. heterophylla* showed 2n = 28 chromosomes. The short arm of the largest pair of chromosomes of the complement (pair number 1) displayed a secondary constriction while the nucleolus was observed

in the interphasic cell. Structural rearrangements were also observed in the *E. heterophylla* L. genome. The genomic instability associated with polyploidy may be the result of selection shaped by environmental adaptations and/or human-induced manipulation through agricultural practices.

Key words: Chromosome; Cytogenetics; *Euphorbia heterophylla*; Nucleolus

