



Is there a relationship between polyploidy and stressful environments? A case study of inselbergs in northeastern Brazil

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ABSTRACT. The aim of this study was to examine the hypothesis that plants with higher ploidy levels are selected by environments under more extremely stressful conditions than the same (or closely related) species from less rigorous terrestrial or epiphytic habitats. Therefore, we analyzed the chromosome numbers of 26 species belonging to 21 genera and 13 families of angiosperms that were collected on 4 inselbergs in Paraíba State, northeastern Brazil. In addition, 13 rupicolous species that grow in the study area, whose chromosome numbers were previously determined, were included in our analysis. Plant chromosome numbers varied between $2n = 12$ in *Callisia filiformis* (Commelinaceae) to $2n = \text{ca. } 240$ in *Epidendrum cinnabarinum* (Orchidaceae). The data as a whole do not support the hypothesis that inselberg species have greater levels of ploidy than terrestrial or epiphytic populations of the same or closely related

species because these rupicolous species demonstrate chromosomal evolution patterns that are independent of the stressful environments of inselberg formations.

Key words: Chromosome number variation; Karyotype; Cytogenetics; Cytotypes; Chromosome evolution; Whole-genome duplication