



# Karyotype evolution in the genus *Jacaranda* Juss. (Jacarandaeae, Bignoniaceae): chromosome numbers and heterochromatin

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**ABSTRACT.** Most taxa in the Bignoniaceae have  $2n = 40$ , but the basal clade Jacarandaeae has  $2n = 36$ , suggesting that  $x = 18$  is the ancestral basic number for the family. Variations in heterochromatin band patterns in genera that are numerically stable, such as *Jacaranda*, could facilitate our understanding of the chromosomal and karyotypic evolution of the family. We characterized heterochromatin distributions in six *Jacaranda* species using chromomycin A3 (CMA) and 4'6-diamidino-2-phenylindole (DAPI). All of them had  $2n = 36$ , including first counts for *Jacaranda bracteata* Bureau & K. Schum., *Jacaranda irwinii* A.H. Gentry, *Jacaranda jasminoides* (Thunb.) Sandwith, and *Jacaranda rugosa* A.H. Gentry. Their karyotypes had four to eight terminal CMA<sup>+</sup>/DAPI<sup>-</sup> bands per monoploid set. In the section *Monolobos*, *Jacaranda brasiliiana* (Lam.) Pers. had eight terminal bands and *Jacaranda mimosifolia* D. Don had four; in the section *Dilobos*, *J. bracteata* had six bands per monoploid set, with the

other species having five. While three species in the section *Dilobos* had the same number of terminal bands, *J. irwinii* had two additional pericentromeric bands and a proximal heterozygotic band, and *J. bracteata* had two distended CMA bands. The consistent records of  $2n = 36$  in *Jacaranda* may represent a plesiomorphic condition for the Bignoniaceae; therefore, the family originated from an ancestor with  $x = 18$ . However,  $2n = 36$  may represent a derived condition, and the family could have had an ancestral basic number of  $x = 20$  that is still conserved in most representatives of the family.

**Key words:** *Jacaranda*; Cytotaxonomy; CMA/DAPI; Terminal heterochromatin; Karyotypic variation