

Cytogenetics studies in *Hymenaea* clade (Leguminosae, Detarioideae)

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Abstract/Resumo

The genera *Hymenaea* L., *Guibourtia* Benn. and *Peltogyne* Vog. belong to the Detarioideae subfamily (Leguminosae) and they are supported by phylogenetic studies as a clade which we call here the Hymenaea clade. Representatives of this clade are mainly recognized by their resin production capability and the bifoliolate leaves. *Hymenaea* and *Guibourtia* currently comprise about 23 and 14 species, distributed mainly in the Neotropical region and the African continent respectively. *Peltogyne* comprises ca. 24 species, all of them restricted to the New World. Even with this biogeographical pattern and an evident difficulty in the delimitation of taxa, especially at an infrageneric level, the knowledge on cytological characteristics for the group is scarce and restricted only to chromosome number. Thus, this work aims to provide karyotype data for taxa from the Hymenaea clade, helping further taxonomic and evolutionary studies that are being developed. After the cataloging of the data available in the literature we observed that apparently, the predominant chromosome number in the Detarioideae subfamily is $2n=24$ but, within the Hymenaea clade this information is available only for 11 species of *Hymenaea* and two species of *Guibourtia*. Other cytogenetic approaches as CMA/DAPI and FISH analyses have never been applied for the clade. The seeds of 11 taxa (three *Guibourtia*, seven *Hymenaea* and one *Peltogyne*) were collected in several regions of Brazil. We observed some variations in numbers of chromosome, CMA⁺ bands and rDNA sites. Representatives of the Hymenaea clade presented predominantly $2n=24$ (except *G. coleosperma* - $2n=48$), two pairs of CMA⁺ bands (except *G. coleosperma* and *G. conjugata* with one pair, and *H. altissima* Ducke with three pairs), one pair of rDNA 5S (except *P. pauciflora*, with two pairs), and one pair of rDNA 45S. Despite the apparent karyotype stability among taxa from the three genera, some finds support important ideas as the possible non-monophyly of *Guibourtia*, since species as *G. coleosperma* and *G. conjugata* belong to different lineages as pointed by ongoing phylogenetic studies. More taxa are being investigated to improve the support for clades and for taxonomic decisions.

Keyword/Palavras-chave: Chromosome number; CMA/DAPI banding, FISH; Jatobá; Systematics

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