

Karyology of *Agapanthus africanus* (L.) Hoffmanns (Agapanthaceae)

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Abstract/Resumo

The genus *Agapanthus* L'Héritier (Agapanthaceae) is a monocotyledonous, herbaceous and perennial plant group endemic to southern Africa. Ten species have been described for this group, in which three are considered evergreen and seven deciduous plants. Nevertheless, *Agapanthus* L'Héritier taxonomy is considered very difficult once there are few unique characters and a high plasticity depending on circumstances of growing. This feature takes some authors to believe in the existence of only one species with innumerable varieties. The cytogenetic has been an important tool to aid the plant taxon identification, and to date, all taxa of *Agapanthus* L'Héritier studied cytologically presented $2n = 30$. Although the species possess large chromosomes, few karyological studies has been explored. This work aimed to increase the cytogenetic knowledge of *Agapanthus africanus* (L.) Hoffmanns by chromosome banding techniques with DAPI / CMA₃ and Fluorescent *in situ* Hybridization (FISH). In addition, flow cytometry was used to determinate DNA content and the percentage of AT / GC nitrogenous bases. Plants studied showed $2n = 30$ chromosomes, ranging from 4.34 - 8.55 μm , with karyotype formulae (KF) = 10m + 5sm. The FISH technique revealed one 45S rDNA signal observed proximally to centromere of the chromosome 7, and one 5S rDNA signal observed proximally to centromere of chromosome 9. The 2C DNA content estimated for the species was $2C = 24.4\text{pg}$, with 59% of AT and 41% of GC. Our data allowed important upgrade for biology and cytotaxonomy of *Agapanthus africanus* (L.) Hoffmanns, and will be used to future taxonomic and phylogenetics studies, as well as for the chromosome evolution of the genus.

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