Unmanaged tree gene banks may hinder full-potential phenotypic traits expression in *Myracrodruon urundeuva* Fr. Allemão (Anacardiaceae), a highly endangered Cerrado timber species but yet showing genetic variability.

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Ex situ conservation in gene banks is an important strategy to safeguard endangered plant species avoiding the narrowing of species genetic base. The South American native timber species *Myracrodruon urundeuva* has experienced rampant exploitation and destruction. Its gene bank (BAG-A) was set up in 1987 in West Central Brazil and currently has 20 preserved Brazilian populations from distinct biomes in different common garden experiments. This study aimed at assessing genetic variability of two *ex situ* conserved *M. urundeuva* Cerrado populations -25 local (S) and 25 non local (A)- based on their progenies (6 replications, 25 families/experiment, 8 plants/plot). Variance components and genetic parameters were estimated using mixed linear models based on height (h), diameter at breast height (DBH) and mean crown diameter (MCD). Deviance analyses were conducted to verify significance of predicted models. Differences in progenies' traits were neither explained by genotypes (χ^2 values for DF = 1; α = 1%: (A) h = 0.2, DBH = 0.42, MCD = 0.37; (S) h = 2.31, DBH = 3.25, MCD = 2.92) nor by origin (χ^2 values for DF = 1; α = 1%: h = 0.3, DBH = 1.90, MCD = 0.00). Significance was found for all traits for block effects (χ^2 values for DF = 1; α = 1%: (A) h = 236.54, DBH = 152.28, MCD = 150.11; (S) h = 186.82, DBH = 93.91, MCD = 113.54). Results suggest genetic variability may reveal higher in BAG-A if specific management is established to counteract environmental effects

Flowering in test of provenance and progenies of *Astronium fraxinifolium* Schott (Anacardiaceae) in three reproductive events

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The unbalanced sex ratio in dioecious species implies the unequal contribution of the number of gametes, thus reducing the effective population size. In this sense, we did the sexual identification of individuals of *Astronium fraxinifolium*, a timber specie belonging to Anacardiaceae family, dioecious, and that naturally inhabits the Cerrado. The individuals are located in a provenance and progeny test at the UNESP's farm, in Selvíria – MS, Brazil, installed in 1996 in a randomized complete block design with 30 families from Mato Grosso do Sul (MS) and 30 from São Paulo (SP), 5 replicates and 10 plants per plot, spaced 3 m × 1.5 m, alternating with *Jacaranda cuspidifolia*. The sexual identification of the trees occurred in 2014, 2017 and 2018 based on the visualization of the male and female flowers, we observed at 130, 186 and 335 trees from SP and 194, 331 and 542 trees from MS respectively. In all the events the provenance of MS had a higher flowering percentage (16%, 28% and 47%) than SP (11%, 17% and 31%). The sex ratio was biased for the male flowers: 2.34, 2.0 and 1.14 for MS and 2.78, 1.69 and 1.39 for SP. We observed a flowering increase and a tendency to a balance between the sex ratio. This could occurred for some reasons: by the natural decrease of *J. cuspidifolia* in the test, by a later maturation of some individuals or by the age of individuals, so further investigations are necessary to better understand the species reproductive biology.

Genetic variation in and between progenies of *Myracrodruon urundeuva* in anthropized areas / *Comportamento da variação genética entre e dentro de procedências e progênies de Myracrodruon urundeuva em áreas antropizadas*

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A *M. urundeuva* é uma espécie arbórea endêmica da América do Sul, conhecida pela madeira. O objetivo desse estudo foi avaliar o comportamento e a variação genética para a forma do fuste em um teste de procedências (Bauru/SP e Selvíria/MS) e progênies aos 31 anos de idade. O experimento foi instalado na Fazenda de Ensino, Pesquisa e Extensão, da FEIS/UNESP, Selviria-MS, utilizando o delineamento experimental de blocos casualisados, com 28 progênies de cada procedência, 3 repetições e 10 plantas por parcela. As estimativas dos parâmetros genéticos foram obtidas a partir do procedimento REML/BLUP, SELEGEN. A forma do fuste não apresentou diferenças significativas entre procedências e progênies, apenas nas parcelas, sugerindo a influência ambiental no experimento. Isto se confirma com os baixos valores de herdabilidade (menor que 0,1), mostrando pouco controle genético, e os altos valores do coeficiente experimental e coeficiente de determinação dos efeitos de parcelas (acima de 10%). Já o coeficiente de variação genética foi maior na procedência de Selvíria (5,26%) do que em Bauru (1,60%). A arquitetura das plantas não foi influenciada pelas procedências, mostrando que a maioria das plantas teve a tendência de bifurcação acima de 1,30 m com diâmetro igual ao fuste principal e tortuosidade acentuada abaixo do DAP. Em razão dos baixos valores obtidos nas herdabilidades a próxima geração de melhoramento deve apresentar baixos incrementos médios para a forma do fuste, devido este caráter apresentar baixo controle genético, porém, apresentará níveis apropriados de variabilidade genética, justificando a sua conservação *ex situ*.

Micro propagation of *Nothapodytes nimmoniana* Graham through adventitious mode of regeneration

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Nothapodytes nimmoniana or *Nothapodytes foetida* Syn. *Mappia foetida* belonging to Icacinacea family is an endangered tree species of Western Ghats of India. It is an excellent source of quinoline alkaloids, Camptothecin (CPT) and 9-methoxy camptothecin (9-OMeCPT) used clinically as anticancer agents for the treatment of solid tumors. Over exploitation for raw material of CPT from *N. nimmoniana* and habitat destruction has led to population decline by 50-80% in the last decade. Development of *in vitro* propagation and conservation techniques are highly desirable as there is no reported cultivation or conservation protocols of this species. In this study rapid *in vitro* cloning of *N. nimmoniana* through adventitious mode of regeneration was tried. MS medium supplemented