

Reproductive biology effect on heritability of complex traits in *Corymbia citriodora* Hook

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Corymbia citriodora is widespread in southeastern Queensland and northern New South Wales, in Australia. Currently, it is the most commonly harvested native hardwood in Queensland. However, there is not enough knowledge regarding the reproductive biology of the species to back genetic improvement and management plans. The mating system distributes the genetic variation among individuals; consequently, the crossing events change the basic relationships between genetic statistics and response to selection. *C. citriodora* reproduction occurs predominantly by outcrossing (average of 90%), with low frequency of self-fertilization (0 to 18%). To investigate the effect of the mating system on the *C. citriodora* on the coefficient of heritability, analyses were carried out using the RELM-BLUP methodology, considering five different levels selfing rates (0, 5, 10, 15 and 20%). The heritability was estimated for the following traits: diameter at breast height (DBH), height, survival, stems form and volume in a progeny test with 641 individual and 56 progenies. The testing was conducted at Luiz Antônio Experimental Station, Sao Paulo, Brazil. The results indicate that the mating system has an effect on the heritability of all different traits. For survival, considering there is no selfing event, the heritability reaches 0.33, while considering 20% of selfing, the heritability decreases among traits from 0.22 to 33%. Thus, the level of inbreeding normally found in the species affects the partitioning of genetic variance between additive and non-additive components, thereby decreasing substantially the heritability of the traits. So, the standard assumption of random mating events not indicated provides an accurate prediction of the genetic values of *C. citriodora* populations.