Analysis of Mendelian inheritance and genetic linkage in microsatellite loci of *Eucalyptus urophylla* ST Blake

Abstract

Eucalyptus urophylla is an important species in the Brazilian forest sector due to its rapid growth rates and resistance to disease. The aim of this study was to verify Mendelian inheritance, genetic linkage, and genotypic disequilibrium for 15 microsatellite loci, with the goal of producing a robust set of genetic markers. Mendelian inheritance and genetic linkage analyses were carried out using genotypes from maternal trees, and their open-pollinated seeds and genotypic disequilibrium were assessed using adult trees. By comparing heterozygous maternal genotypes and their seeds, we found no significant deviations from the expected 1:1 Mendelian segregation and the expected 1:1:1:1 segregation hypothesis for pairwise loci. For adult trees, we did not find strong evidence of genotypic imbalance for pairwise loci. Our results indicated that the analyzed set of microsatellite loci could be used to carry out analyses of genetic diversity, mating system, and parentage in *E. urophylla*. (AU)