

Contrasting genetic diversity and differentiation of populations of two successional stages in a Neotropical pioneer tree (*Eremanthus erythropappus*, Asteraceae)

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ABSTRACT. *Eremanthus erythropappus*, commonly known as “candeia”, is an abundant pioneer tree species, forming dense populations known as “candeial”, but it is also found in forests at middle stages of succession. Trees from forests are bigger and occur in lower density than in the “candeial”. The objectives of the present study were to investigate if the decrease in population density during successional process is accompanied by 1) changes in within-population genetic diversity, and 2) differentiation of populations. Eight populations, four of early successional stage (“candeial”) and four of middle successional stages (forest), were analyzed with RAPD markers. The genetic diversity found was high compared to other tree species analyzed with RAPD markers. AMOVA revealed that most of the genetic variations of *E. erythropappus* were found within populations (85.7%), suggesting that this species is predominantly outcrossing. The relatively low differentiation among the populations can be attributed to small distances among the populations analyzed (0.2 to 10.8 km).

No indication that populations from middle successional habitats show lower genetic variation than populations from early successional stages was found. The percentage of polymorphic fragments (82.8 and 84.8%) and the Shannon indexes (0.442 and 0.455) were similar in “candeial” and forest, respectively. These results suggest that if an increase in selection intensity occurred during succession, it did not result in a decrease in genetic diversity or that the selection effect was balanced by other factors, such as gene flow. Higher significant differentiation among *E. erythropappus* populations from “candeial” in relation to that among populations from forest was also not detected.

Key words: Asteraceae; “Candeia”; *Eremanthus erythropappus*; Genetic diversity; Pioneer species; Succession