



Genetic structure based on nuclear and chloroplast microsatellite loci of *Solanum lycocarpum* A. St. Hil. (Solanaceae) in Central Brazil

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ABSTRACT. *Solanum lycocarpum* (Solanaceae) is a woody species found in the Brazilian Cerrado. The flowers are pollinated by *Xylocopa* spp bees, and seeds are dispersed by mammals with distinct home range sizes. As a consequence, relative contributions of pollen and seeds to overall gene flow can vary according to different spatial scales. We studied the genetic structure of four natural populations of *S. lycocarpum* separated by 19 to 128 km, including individuals located along dirt roads that interlink three of the populations. A total of 294 individuals were genotyped with five nuclear and six chloroplast microsatellite markers. Significant spatial genetic structure was found in the total set of individuals; the S_p statistic was 0.0086. Population differentiation based on the six chloroplast microsatellite markers ($\theta_{pC} = 0.042$) was small and similar to that based on the five nuclear

microsatellite markers ($\theta_r = 0.054$). For this set of populations, pollen and seed flow did not differ significantly from one another (pollen-to-seed flow ratio = 1.22). Capability for long distance seed dispersion and colonization of anthropogenic sites contributes to the ability of *S. lycocarpum* to maintain genetic diversity. Seed dispersion along dirt roads may be critical in preserving *S. lycocarpum* genetic diversity in fragmented landscapes.

Key words: cpDNA inheritance; Gene flow; Pollen flow; Seed dispersion; Spatial genetic structure