



Characterization and genetic diversity of pepper (*Capsicum* spp) parents and interspecific hybrids

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ABSTRACT. Pepper species exhibit broad genetic diversity, which enables their use in breeding programs. The objective of this study was to characterize the diversity between the parents of different species and their interspecific hybrids using morphological and molecular markers. The parents of *Capsicum annuum* (UFPB-01 and -137), *C. baccatum* (UFPB-72), and *C. chinense* (UFPB-128) and their interspecific hybrids (01x128, 72x128, and 137x128) were used for morphological and molecular characterization. Fruit length and seed yield per fruit (SYF) traits showed the highest variability, and three groups were formed based on these data. CVg/CVe ratio values (>1.0) were calculated for leaf length (1.67) and SYF (5.34). The trait that most contributed to divergence was the largest fruit diameter (26.42%), and the trait that least contributed was pericarp thickness (0.33%), which was subject to being discarded. The 17 primers produced 58 polymorphic bands that enabled the estimation of genetic diversity between parents and hybrids,

and these results confirmed the results of the morphological data analyses. The principal component analysis results also corroborated the morphological and random-amplified polymorphic DNA data, and three groups that contained the same individuals were identified. These results confirmed reports in the literature regarding the phylogenetic relationships of the species used as parents, which demonstrated that *C. annuum* was closer to *C. chinense* as compared to *C. baccatum*.

Key words: *Capsicum* spp; Genetic breeding; Genetic diversity; RAPD