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Genetic divergence in *Pinus caribaea* var. *hondurensis* progeny in Brazil

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*Pinus caribaea* var. *hondurensis* has been planted successfully in Brazil especially in warm regions, free of frost and drought. With a fast growth, good adaptability and stem form besides a high resin production. It is originated from Central America and Mexico, at altitudes ranging from sea level to 500 m altitude, and exceptionally at 1000 m altitude. The genetic divergence was estimated by distance between pairs of *P. caribaea* var. *hondurensis* progenies for quantitative traits. The progeny trial was established in June 1986, in Selviria, in Mato Grosso do Sul State, Brazil. Experimental design was 10x10 triple lattice design, with 100 treatments (96 progenies from a clonal seed orchard of *P. caribaea* var. *hondurensis* and four commercial controls), with linear plots of ten plants. The spacing between plants was 3 m x 3 m. Analyses of genetic divergence were performed according to REML/BLUP procedure. Dissimilarity measures between pairs of *Pinus caribaea* var. *hondurensis* progenies for silvicultural traits were estimated through generalized distance of Mahalanobis ( $D^2$ ). The maximum distance ( $D^2 = 65.51$ ) was observed among progenies 42 and 14, and the minimum ( $D^2 = 0.15$ ) among the progenies 33 and 22, and 93 and 38, respectively. The pattern of phenotypic structure of 96 progenies of *P. caribaea* var. *hondurensis* resulted in the formation of four groups. One constituted the majority of progenies (96,9%) and others aggregately by (1,05%). Despite crosses between some genotypes with high estimates of divergence, it will not ensure high heterosis due to the necessity of dominance and epistatic interactions. There is a greater probability to obtain more promising combinations when divergent genotypes are crossed.