Construction of an Interspecific Genetic Linkage Map from a *Coffea liberica* x *C. eugenioides* F1 Population

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SUMMARY

Coffee is globally one of the most important export crops and is a prominent part of the economy in more than 50 countries in Latin America, Africa and Asia. In Colombia for more than a century it has been the leading export commodity. In spite of that, genetic research on coffee has been sparse and has been focused mainly on the two major cultivated species, *Coffea arabica* L. and *C. canephora* P., leaving unexplored the genetic potential in other species in the genus *Coffea*. In this work we describe the construction of an interspecific genetic linkage map of coffee, using a mapping population obtained at CENICAFE and consisting in 91 plants from the F_1 of de diploid species *Coffea liberica* x *C. eugenioides* cross. A total of 327 molecular genetic markers developed at CENICAFE were evaluate, of which 116 exhibited segregation patterns that allowed linkage analysis using JoinMap 3.0 genetic software. The results indicated that 76 loci incorporate into 12 major linkage groups. Another 40 loci produced minor linkage groups. The segregation analysis show a clear tendency for segregation distortion at a high proportion of loci (39%). The knowledge derived from this study will have applications in plant breeding through marker assisted selection programs, linkage disequilibrium analysis and the identification of quantitative traits, among others.

Key words: coffee, genetic map, genetic linkage, genomics.