

Inheritance of Caffeine in Interspecific Hybrids of *Coffea arabica* x *Coffea canephora*

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SUMMARY

Caffeine inheritance was studied in plants derived from a cross between an artificially doubled di-haploid *C. arabica* var. Bourbon Vermelho ($2n = 22 \rightarrow 2n = 44$) and a normal doubled *Coffea canephora* ($2n = 22 \rightarrow 4n = 44$). Caffeine in seeds was determined in the parent lines, F_1 and F_2 hybrids, as well as in backcrosses with *C. arabica* (BC_1) during 2004 and 2005. The caffeine in seeds of the F_2 plants showed a normal distribution and a mean value intermediate to those of the parents, whereas BC_1 plants tended to have values closer to the *C. arabica* parent line. By pooling the data of two years it was estimated that a broad-sense heritability coefficient was 67.3% and that five additive genes might be controlling the trait in the seeds. The results confirm the existence of distinct mechanisms controlling the caffeine content in seeds and leaves of coffee and indicate favorable conditions to breed for caffeine content in this coffee population.