

The Drop of Beverage Quality Caused by *Coffea canephora* Gene Introgression Can be Avoided by Selection

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SUMMARY

The introgression of *Coffea canephora* genes in *C. arabica* is suspected of causing a drop in beverage quality. Coffee samples from lines introgressed by *C. canephora* via the Timor Hybrid, and well-known for their resistance to coffee leaf rust (*Hemileia vastatrix*) and to the nematode *Meloidogyne exigua* were studied for beverage quality, chemical composition and amount of introgressed genetic material. Chemical analyses (caffeine, chlorogenic acids, fat, trigonelline, sucrose) were carried out. The amount of AFLP markers introgressed from the Timor Hybrid varied from 1 to 37 for the studied lines. In a first study the introgressed cv. CR95, was compared to the traditional non-introgressed cv. Caturra in 13 locations. In a second study, the cv. 'Veranero', was compared to Caturra in 14 contrasted locations. Finally, 15 introgressed pure lines were compared with the traditional cv. Caturra, Villa-Sarchi and Catuai. The cv. CR95 revealed a lower beverage quality to Caturra and a lower content of fat. In the second study, there were significant differences between lines for all the biochemical compounds analysed and for the acidity and the overall standard of the beverage. Two lines (T17927, T17924) were significantly poorer than the controls for sucrose and beverage acidity. T17924 also had more chlorogenic acids and was poorer for the overall standard. However, two highly introgressed lines, T17934 and T17931, (25 and 30 AFLP markers respectively) did not differ from the non-introgressed controls. There were no correlations between the amount of AFLP markers and the chemical contents or beverage attributes. It was concluded that it should be possible to find lines with resistance genes and good beverage quality. Selection can avoid accompanying the introgression of resistance genes with a drop in beverage quality.