

Investigation of Natural Interspecific Hybrids from New Caledonia: a Very Promising Source of Genetic Diversity for *C. arabica* Breeding

L. MAHÉ¹, D. LE PIERRÈS¹, M-C. COMBES¹, V. VARZEA² AND P. LASHERMES¹

¹Institut de Recherche pour le Développement, Montpellier, France

²Centro de Investigação das Ferrugens do Cafeeiro, Oieras, Portugal

SUMMARY

The development of cultivars that are resistant to coffee leaf rust caused by the fungal pathogen *Hemileia vastatrix* is a priority in coffee breeding. So far only a few descendants of interspecific hybrids between *C. arabica* and related diploid species have been used as sources of resistance. Identification of new sources of resistance is thus particularly worthwhile. As a consequence, we investigated the genetic diversity of spontaneous interspecific hybrids between *C. arabica* and *C. canephora* (HNC) from an exceptional sympatric zone in New Caledonia. AFLP and microsatellites amplification were used to evaluate the genesis and genetic diversity of 42 HNC plants, while rust resistance was evaluated by inoculation with a representative panel of rust races from a worldwide collection. Occurrence of a large assortment of hybridization events between the two coffee species is clearly established. An important genetic diversity was characterized in HNC plants originating from introgressions into *C. arabica* from various *C. canephora* progenitors. Out of the 14 plants tested for leaf rust resistance, half appeared to be resistant to all known races. Such high diversity in interspecific hybrids between *C. arabica* and *C. canephora* is exceptional and represents a highly valuable source for *C. arabica* breeding against coffee leaf rust.