

Utilization of Chromosome Painting as a Complementary Tool for Introgression Analysis and Chromosome Identification in Coffee

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SUMMARY

The term “chromosome painting” widely implies painting of differential chromosome segments with sequence specific probes based on the technique of *in situ* molecular hybridization. Development of fluorescence *in situ* hybridization (FISH), further enhanced sensitivity and versatility of *in situ* hybridization procedures. Despite recent development and application of FISH in plant genome analysis, this technology remains unfamiliar to most coffee scientists. Here we report through of different examples, the potential of FISH technique as a tool for genome analysis in coffee. We investigated the presence of alien chromatin in interspecific hybrids between *C. arabica* x *C. canephora* as well as in one *C. arabica* line introgressed from *C. liberica*. Further, we demonstrated that it is possible to identify one specific chromosome on the whole genome, despite the morphological similarity between coffee chromosomes. Overall, our results illustrate how molecular cytogenetics approach would provide complementary information for genetic mapping studies based on molecular markers.