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**Introduction**  
 Arabica F1 hybrids are becoming an interesting alternative for coffee farmers in many producing countries. Male sterility opened the opportunity to propagate F1 varieties by seeds through a simple, quite rapid and low-cost approach<sup>1</sup>. We report here the results of a wide genetic analysis carried out to verify the genetic purity of a first batch of hybrid seeds from two F1 varieties developed by Nestlé Research in Ecuador.

**Materials/Methods**  
 Genetic purity was assessed on leaves from 188 F1 hybrids seedlings of the Star2 and Star3 varieties. The presence and segregation of parental discriminant alleles was assessed by using five SSR markers, chosen for their specificity, genome distribution (four linkage groups) and variability regarding the parents.

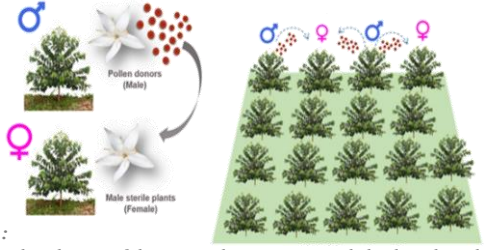


Figure 1 : Schematic distribution of the parental genotypes in a hybrid seed garden

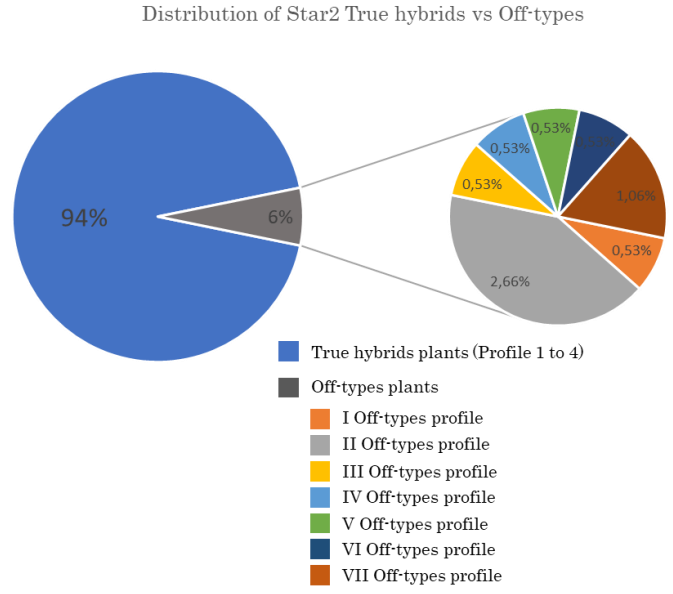


Figure 2 : Distribution of true-hybrids and off-type plants for the analyzed samples of Star2

**Results/Discussion**  
 Molecular analysis of conformity carried out in the two hybrid-seed derived populations showed five polymorphic loci having between one to three alleles. Most of the hybrid seedlings, **94% for Star 2 and 95% for Star 3** appeared as **true hybrids** with the expected allelic distribution. The frequencies of **off-type** plants ranged from **6% (for Star2) to 5% (for Star3)** (Figure 2). Different patterns were observed for these off-types, some of them could be explained by the intrinsic heterozygosity of both, the male sterile parent and the pollinator.  
**Previous studies** on the evaluation of the number of off-type plants<sup>2</sup> within the framework of a breeding program using sterile male plants showed **similar results**. None of the plants analyzed showed the same profile as the female, which confirmed that there was **no self-pollination** in the male sterile plant. Further, this analysis showed that **potential contamination** of seed garden by **external pollen was negligible** allowing a high genetic purity of the hybrid seeds.

**Conclusion/Perspectives**  
 This study is the first one conducted on coffee with such a large number of samples. Consistent results were obtained thank to a large sampling coupled with an efficient detection method by SSR markers. It showed the feasibility, but also the robustness and efficiency of the commercial hybrid seeds production of coffee, with enough genetic uniformity to be spread in the field.