

Effects of the *Laurina* Mutation on the Shoot Apex in *C. arabica* cv. *Laurina*

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SUMMARY

Coffea arabica var. *Laurina*, also called Bourbon Pointu, appeared on the island of La Réunion following a spontaneous mutation in the Bourbon variety. One of the major visible effects of a mutation is the modification of the plant architecture towards a dwarf pyramidal shape. In order to understand this effect, the lateral organs initiation pattern was performed through shoot apex comparison of the two Bourbon varieties. The observations were performed through two ways: 1/ macroscopic description of an internode emergence cycle (phyllochron); 2/ microscopic descriptions of leaf primordium emergence cycle in an apical shoot apex and Shoot Apical Meristem (SAM) (plastochron). The last procedure allowed a fine histological description of the *Coffea* apex, between two leaf primordial emissions. Whatever the environmental conditions (field or greenhouse), within one month, the original cv. Bourbon grew six-fold higher than the cv. Bourbon pointu. Plastochron could not explain this difference. Whatever the environmental conditions (field or greenhouse), within one month, the original cv Bourbon grew six-fold higher than the cv Bourbon pointu. Plastochron could not explain this difference. In fact, the *Laurina* mutation acts very early on the periphery of the shoot apex concerning the future leaf and internode. By contrast, the meristem sensu stricto was not modified by the mutation.