Genetic diversity of *Coffea canephora* assessed by using genetic parameters from the root system

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Aiming: Assess the genetic diversity of 43 genotypes of *C. Canephora* according to root system parameters.

Material and methods: The soil was sampled down to 60 cm (Figure 1a). Roots were washed (Figure 1b), scanned (Figure 1c) and the resulting images were processed with the software Safira. Dissimilarity between genotypes was assessed by a cluster analysis.

Table 1: Clustering method Tocher using the Mahalanobis distance

Groups	Genotype ID	Groups	Genotype ID
I	05, 06, 07, 10, 11, 12, 16, 17, 20, 21, 24, 26, 34, 36, 37, 39	VI	23, 28
II	01, 03, 08, 13, 19, 30, 40, 41, 43	VI	14, 25
II	02, 27, 29, 33, 42	VII	18, 22
IV	04, 15	IX	09, 32
V	35, 38		

Figure 1: Approach used for sampling the roots of 43 *C. canephora* genotypes, including soil sampling (A), washing (B) and roots used for scanning (C).

Results: The cluster analysis resulted in nine distinct groups, demonstrating a wide genetic variability within coffee genotypes, as the Tocher method favors the minimization of the intra-group distance and the maximization of the inter-group distance.

Conclusion and perspectives: There were genetic differences within the 43 genotypes of *C. canephora* assessed, which were separated in nine different groups. Such variability may be promising to overcome water stresses and promote more nutrient uptake.