

# **Phenotypic and Genetic Analysis of Root and Associated Physiological Traits in *Coffea canephora* Accessions**

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## **SUMMARY**

In the present study, 31 accessions of *Coffea canephora* were assessed for variability in root traits by gravimetric method and also genetic analysis with Random Amplified Polymorphic DNA (RAPD) markers for drought tolerance/ resistance. A significant genetic variability in root characteristics such as total root biomass, root to shoot ratio and total dry matter was observed among the accessions. A significant positive association was recorded between root weight and total biomass production under stress and non-stress conditions indicating low Genotypic X Environmental interactions for these traits. The robusta accessions were categorized in to different groups based on normal Z-distribution viz., high root, low root, high WUE and low WUE types. Categorization of accessions into different groups using 18 selected 10 mer Operon series primers indicated maximum linkage distance of 135 units. Based on these results, the contrasting accessions with high and low root biomass types were crossed and mapping populations were established for construction of genetic linkage map in robusta coffee.