

Diversity in the South Ethiopian Coffee (*Coffea arabica* L.)

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SUMMARY

A field experiment on evaluation of 41 south Ethiopian coffee accessions with 2 standard checks of the southwest Ethiopian origin was conducted using Randomized Complete Block Design at Wonago Research Sub-Station during 1999-2003 cropping seasons. Data on 7 morphological agronomic characters, average of three years data on severity of CBD and CLR infestations and clean coffee yield was obtained for the 43 genotypes. The germplasm accessions differed significantly for all the 7 morphological agronomic characters and yield in the univariate analyses of variances indicating the prevalence of variability among south Ethiopian coffee germplasm accessions. Further, the first four principal components explained 82.63 percent of the total variation prevalent within the germplasm accessions out of which 32.52 percent was explained by the first principal component. Average linkage cluster analysis using Mahalanobis (D^2) distance for the 10 characters grouped the 43 accessions in to 9 clusters. The number of accessions per cluster ranged from 1 in cluster IX to 13 in cluster II. The clustering pattern of the accessions revealed the prevalence of genetic diversity in the south Ethiopian coffee for the characters considered. The maximum inter-cluster distance was observed between clusters V and VIII while the minimum was observed between clusters VI and VII. The study highlighted the possibility of using accessions of the distant clusters as potential candidates for the genetic improvement of south Ethiopian coffee through crossing and selection.