

## ABSTRACT

The variation of morphological and physiological traits of blackberry (*Rubus* subgenus *Rubus* Watson) is vital for successful breeding of the fruit crop. The objective of this study was to characterize blackberry accessions in-situ using morphological descriptors in Kenya. Each blackberry accession was nested within its county of collection. A phylogenetic tree was then constructed using the Gower's coefficient which clustered the accessions into two classes; I and II consisting of 1 and 89 accessions, respectively. The clustering of accessions did not show an association between the origin of collection and the accessions. Principal Component Analysis (PCA) revealed ten axes of which seven had a cumulative variation of 96.30% with the first two axes having a discriminatory variance of 52.71%. This suggests that variables identified in this study could be used to differentiate blackberry accessions morphologically. This study demonstrated that the number of internodes per average growing shoots, thorniness of the plant and length of internode were associated with the first axis with Eigenvalue of 27.79%. Plant thorniness was also associated with the second axis with Eigenvalue of 24.92%. These results suggest that there exists qualitative and quantitative variation among blackberry accessions in Kenya that can be utilized in breeding.

**Key words:** Morphological diversity, *Rubus* subgenus *Rubus* Watson, accessions, cluster analysis.