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Evaluation of the Tea Accessions in the Lankaran-Astara Region of Azerbaijan Republic Based on Morphological Traits

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Abstract: Based on diversity of available plant genetic resource, plant breeders can create new and improved cultivars with desirable qualities, including those favored by both farmers and breeders. However, to address upcoming global concerns relating to food and nutritional security, preserved plant genetic resources must be applied to crop enhancement. Therefore, the identification of untapped sources of genetic diversity that may be crucial for adaptation to various biotic and abiotic stresses would be made possible by the genetic and morpho-phenological characterization of landraces. In this study we evaluated 10 tea accessions by some morphological traits like number and weight of tender shoots, number and weight of normal buds, number of total leaf buds, leaf length, bush height, bush diameter, intermodal length, number of total leaves in bush and yield per bush. Analysis of variance (ANOVA) revealed a significant differentiation among the 10 tea genotypes in all morphological traits assessed. There was a positive and significant correlation between bush yield with number and weight of tender shoots, number and weight of normal buds, number of total leaf buds, leaf length and bush height. Dendrogram formed through cluster analysis based on agro-morphological traits divided the 10 tea accessions into four main clusters. All studied tea accessions evaluated through principal component analysis were grouped into different clusters with more morphological similarities among accessions within cluster. The distribution plant genotypes into different groups revealed that the genetic diversity existed among these accessions. These findings might be a valuable resource for efforts involving breeding, preservation, and further characterization in Azerbaijan tea accessions.

Keywords: Tea accessions, Morphological traits, Genetic diversity, Cluster analysis.