Retracted: Effect of Salinity on Biomass Yield and Physiological and Stem-Root Anatomical Characteristics of Purslane (Portulaca oleracea L.) Accessions

ABSTRACT

13 selected purslane accessions were subjected to five salinity levels 0, 8, 16, 24, and 32 dS m^{-1}. Salinity effect was evaluated on the basis of biomass yield reduction, physiological attributes, and stem-root anatomical changes. Aggravated salinity stress caused significant () reduction in all measured parameters and the highest salinity showed more detrimental effect compared to control as well as lower salinity levels. The fresh and dry matter production was found to increase in Ac1, Ac9, and Ac13 from lower to higher salinity levels but others were badly affected. Considering salinity effect on purslane physiology, increase in chlorophyll content was seen in Ac2, Ac4, Ac6, and Ac8 at 16 dS m^{-1} salinity, whereas Ac4, Ac9, and Ac12 showed increased photosynthesis at the same salinity levels compared to control. Anatomically, stem cortical tissues of Ac5, Ac9, and Ac12 were unaffected at control and 8 dS m^{-1} salinity, but root cortical tissues did not show any significant damage except a bit enlargement in Ac12 and Ac13. A dendrogram was constructed by UPGMA based on biomass yield and physiological traits where all 13 accessions were grouped into 5 clusters proving greater diversity among them. The 3-dimensional principal component analysis (PCA) has also confirmed the output of grouping from cluster analysis. Overall, salinity stressed among all 13 purslane accessions considering biomass production, physiological growth, and anatomical development Ac9 was the best salt-tolerant purslane accession and Ac13 was the most affected accession.