

## **Salinity-induced changes in the morphology and major mineral nutrient composition of purslane (*Portulaca oleracea* L.) accessions**

### **ABSTRACT**

This study was undertaken to determine the effects of varied salinity regimes on the morphological traits (plant height, number of leaves, number of flowers, fresh and dry weight) and major mineral composition of 13 selected purslane accessions. Most of the morphological traits measured were reduced at varied salinity levels (0.0, 8, 16, 24 and 32 dS m<sup>-1</sup>), but plant height was found to increase in Ac1 at 16 dS m<sup>-1</sup> salinity, and Ac13 was the most affected accession. The highest reductions in the number of leaves and number of flowers were recorded in Ac13 at 32 dS m<sup>-1</sup> salinity compared to the control. The highest fresh and dry weight reductions were noted in Ac8 and Ac6, respectively, at 32 dS m<sup>-1</sup> salinity, whereas the highest increase in both fresh and dry weight was recorded in Ac9 at 24 dS m<sup>-1</sup> salinity compared to the control. In contrast, at lower salinity levels, all of the measured mineral levels were found to increase and later decrease with increasing salinity, but the performance of different accessions was different depending on the salinity level. A dendrogram was also constructed by UPGMA based on the morphological traits and mineral compositions, in which the 13 accessions were grouped into 5 clusters, indicating greater diversity among them. A three-dimensional principal component analysis also confirmed the output of grouping from cluster analysis.