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The Effects of Dimethyl Sulfate (DMS) in Some Traits Related to Stem of Purslane (*Portulaca oleracea*) at M2 Generation

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Purslane, or Portulaca oleracea, is is edible and has many health benefits. In order to the study of genetic diversity in the M2 mutant lines which was treated with dimethyl sulfate (DMS) at concentrations of 0.0, 0.08, 0.1, 0.12, 0.14 (%), a nested experimental design was conducted with two replications. Due to the high experimental error for traits such as the number of main stem (NMS), stem fresh weight (SFW), stem dry weight (SDW), square transformation was applied through them the differences among concentration of DMS were statistically significant. For the ratio of dry weight to fresh weight (DW/FW), despite of reduction in experimental error, the differences among concentration of DMS were not significant. Difference among mutant lines was significant for all studied traits including plant height, NMS, number of sub-stems (NSS), stem diameter, SFW, SDW, and for DW/FW it was not significant. The amounts of all studied traits was higher at concentrations of DMS in comparison with the check (DMS 0.0%). Usually, with increasing in the concentration of DMS, a decrease was observed in the values of traits. The correlation between traits under study was significant, with exception of correlation between DW/FW and NMS, NSS and SFW. Correlation between DW/FW was negative with all other traits, with exception with except of SDW. The correlation between other traits was positively significant.

Keywords: Dimethyl sulfate (DMS), Mutant, Purslane (*Portulaca oleracea*)

References

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