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RELATIONSHIPS AMONG SOME TRAITS IN M3 MUTANT LINES OF PURSLANE (*PORTULACA OLERACEA* L.)

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To investigate the relationship among some traits in the M3 mutant lines of purslane that were treated with dimethyl sulfate at 0, 0.08, 0.12, 0.12, and 0.14 percent concentrations, a study was conducted in the year 2018 at the research farm of agricultural college of shahed university through nesting design. The relationships among traits were analyzed through path analysis using stepwise regression in two states with repetition and mean of repetitions. The plant fresh weight (PFW) as the dependent variable and other traits including plant height, number of main stems, number of sub-stems, stem diameter, stem fresh weight(SFW), stem dry weight(SDW), SDW/SFW, leaf fresh weight(LFW), leaf dry weight(LDW), LDW/LFW, plant fresh weight(PFW), plant dry weight(PDW), PDW/PFW, leaf length, leaf width, leaf shape, number of capsules, total chlorophyll, leaf area, and hectoliter were considered as Independent variables. When replicated data were used for path analysis, SFW and LFW were imported in equation due to the significant regression relationship, which it's direct effect on PWW was higher than LFW. The most indirect effect was related to LFW on PWW through SFW. Also, the correlation between these two traits was significant with PWW at 1% probability level. In path analysis with the mean of replications, among 20 studied traits, SFW, LFW, LDW/LFW had significant regression with PWW. SFW had the most direct effect on PWW. The highest positive and negative indirect effect on PWW was through LFW and SFW, respectively. Although LDW had a significant regression relation with PWW, the simple correlation between these traits was not significant. In case of two states, LFW and SFW had a direct and significant relationship with PWW, therefore, in breeding of purslane, it is possible to use of these two traits instead of PWW at the selection stages.

Keywords: Stepwise regression, Path analysis, Correlation between traits, Purslane.