

## Allelopathic Effect of *Duranta Repens* on Salinity-Stressed *Solanum Lycopersicum* Seedlings

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**Abstract :** Aqueous extract of *Duranta repens* leaves was investigated for its allelopathic effect on *Solanum lycopersicum* Seedlings germinated and grown under salinity condition. The study was carried out using both laboratory petri dish and pot assays to simulate the plant's natural environmental conditions. The experiment consisted of 5 groups (1-5), each containing 5 replicates (of 10 seeds). Group 1 was treated with distilled water; Group 2 was treated with 5 mM NaCl; Group 3 was treated with the Extract, Group 4 was treated with a mixture of 5 mM NaCl and the Extract (2:1 v/v), and Group 5 was treated with a mixture of 5 mM NaCl and the Extract (1:2 v/v). The results showed that treatment with NaCl caused significant reductions in germination, growth parameters (plumule and radicle lengths), and chlorophyll concentration of *S. lycopersicum* seedlings when compared to those treated with *D. repens* aqueous leaf extract. Salinity also caused an increase in malondialdehyde and proline concentrations and lowered the activity of superoxide dismutase. However, in the presence of the extract, the adverse effects of the NaCl were attenuated, implying that the extract improved tolerance of *S. lycopersicum* seedlings. In conclusion, the findings of this study show that the extract is very important in the optimal growth of the plant in saline soil, which has become useful for the management of soil salinity problems.

**Keywords :** agriculture, allelopathic, salinity, soil, tomato, production, photosynthesis

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