

عنوان مقاله:

.Allelopathic effect of Nerium oleander L. alcohol extract on growth and development of Arabidopsis thaliana (L.) Heynh

محل انتشار:

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خلاصه مقاله:

The allelopathic interactions of different concentrations (0, 2, 4, 6, 10 g in 100 mL⁻¹) of alcoholic extract of Nerium oleander flower on Arabidopsis thaliana (Columbia-0) were studied. The results showed that leaf area, plant height and inflorescence emerge period decreased by elevation in the treatment concentration. The highest value of leaf area (1.176 cm²) was recorded in control group, while it was 0.63 cm² in treatment 2 g in 100 mL⁻¹ (T₂) and 0.5 cm² in T₁₀. Chlorophyll concentrations were decreased by the upraised concentrations. The highest value (4.15 mg g⁻¹) was recorded in control, while the lowest (3.3 mg g⁻¹) in T₁₀. Anatomical study revealed that the internal structure of stem and root undergone numerous character changes. The thickness of the stem varies between treatments. The control exhibited the highest average (109.37 μm), while T₁₀ had the lowest average (81.25 μm). Collenchyma layer increased in all exposure treatments, compared to control. There was a change in the internal structure of the roots between the control and the alcoholic extract treatment. The root shape exhibited a lot of modification: it seemed circular in control, semi-circular in T₄, while elliptic or irregular shape in T₁₀. The root thickness reached 95 μm in T₂ and T₄, whereas the lowest thickness in T₁₀ (70.33 μm). Vascular bundle in the control was cylindrical. However, there was some irregular growth on one side of the root in T₄. In T₁₀, larger vascular bundles and random growth were observed, while the root shape appeared to be irregular, due to the abnormal growth of vascular bundles or irregular growth

کلمات کلیدی:

Allelochemicals, allelopathy, Nerium, Arabidopsis thaliana, anatomy, Stem, Root

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