

## Responses of *Trifolium pratense* to Lead Accumulation Under In-Vitro Culture Conditions

**Authors :** Arash Khorasani Esmaeili, Rosna Mat Taha, Sadegh Mohajer

**Abstract :** Seeds of *Trifolium pratense* (Red clover) were exposed in vitro for 6 weeks to six levels of lead (Pb) concentrations (0, 50, 100, 150, 200, 250  $\mu$ M) to analyze the effects on growth, total chlorophyll and total protein contents of grown plants against the lead accumulation. The growth of plants was negatively affected by various levels of lead treatment. The fresh and dry weights, as well as lengths of shoots and roots of grown plants under various lead treatments, were found significantly lower in comparison with the control plants. Total chlorophyll and total soluble protein contents of grown plants under lower concentrations of lead treatment did not show significant differences when compared with the control plants, although they were affected significantly in higher levels of lead accumulation (150-250  $\mu$ M).

**Keywords :** trifolium pratense, lead accumulation, chlorophyll content, protein content

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