

## **Abstract**

Pollution of agricultural soils by heavy metals due to the increasing use of municipal and industrial wastewater, municipal solid waste, fertilizers and pesticides contaminated with heavy metals, is one of the challenges facing modern farming systems. In this study lentils and cadmium salt from municipal solid waste compost as a factorial experiment was evaluated in a randomized complete block design. The zero mg Kg<sup>-1</sup> of cadmium in soil (control), 2-6.39 mg Kg<sup>-1</sup> of cadmium soil; 3-12.78 mg Kg<sup>-1</sup> of cadmium, 4-87.11 g kg<sup>-1</sup> of compost produced from municipal solid waste, 5-174.22 kg<sup>-1</sup> of compost, 6-3.19 mg kg<sup>-1</sup> of cadmium in soil + 43.55 g kg<sup>-1</sup> of compost, 7-6.39 mg kg<sup>-1</sup> of cadmium in soil + 87.11 g kg<sup>-1</sup> of compost have been considered before the reproductive phase of plant height, leaf number per plant, number of branches per plant, number of nodes per plant, stem diameter, root length, dry weights of chord in each pot was measured. Qualitative characteristics of lentils contains chlorophyll, proline, potassium, calcium, magnesium and cadmium in plant tissues were measured. Results showed significant effect on plant height, leaf number per plant, number of branches per plant, stem diameter, fresh and dry weight of plants at 1 percent level of probability and number of nodes in the 5% level of probability. The results suggest that the treatment had significant impact on plant height, root length, qtrsagh, knots, wet and dry weight at %1 and number of nodes and branches are significant at the 5% level. Results was significant on plant height, stem diameter, root length, fresh weight and dry in 1% and impact analysis of variance, treatment and cultivar treatments, phosphorus, calcium and potassium in the roots and shoots shows a significant %1. Analysis of variance showed significant effects of cultivar, cadmium and chlorophyll a in the 1% level shows but had no significant effect of proline and chlorophyll b and in four cases treated significant at 1%But the figure did not significantly. Relationship between compost and cadmium show that both the morphological and agronomic traits associated with increased levels of cadmium applied to reduce the toxicity of cadmium has decreased with increasing compost And cadmium at 6.39 mg, proline increased in 12.78 mg cadmium, proline decreased. Cadmium had negative impact on local varieties of the figures was corrected, but the effect of compost and reduce toxicity of cadmium, according to results obtained with the addition of local varieties of compost quality is better.

**Keywords:** Cadmium toxicity, lentils, municipal compost, cadmium bioavailability