



Effect of Sewage Sludge Application on Heavy Metal Accumulation and Response of Marigold (*Tagetes erecta* L.)

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Abstract: To study the usefulness of sewage sludge application for Marigold (*Tagetes erecta* L.) and its consequent contamination, experiment was conducted by mixing sewage sludge @ 0, 5, 10, 15, 20, 25 and 30 tonnes ha⁻¹ to the agricultural soil. Soil pH decreased whereas electrical conductivity, organic carbon, available N, P and K increased in soils treated with sewage sludge in comparison to untreated soil. Its application led to significant increase in Pb, Cr and Zn concentration of soil. The increased concentration of heavy metals in soil due to sewage sludge amendment had increased content and uptake of Cd, Cr, Pb, Ni and Zn in shoot and root as compared to those grown in untreated soil. Accumulation was more in root than shoots for most of the heavy metals. Graded application of sewage sludge from 5 to 25 tonnes ha⁻¹ in soil increased root and shoot biomass yield significantly. Above this dose, a decline in all growth attributes was recorded. It was found that application of 25 tonnes ha⁻¹ sludge was optimum dose for marigold in alluvial soils.

Key Words: Sewage Sludge, Marigold, Biomass Yield, Heavy Metals Accumulation.
