



# Evaluating the Potential of Vetiver Grass [*Chrysopogon zizanioides* (L.)] and Organic Amendments for Restoration of Tannery Effluent Contaminated Soil

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**Abstract:** Vetiver grass [*Chrysopogon zizanioides* (L.)], a perennial C<sub>4</sub> grass is prized for its aromatic essential oil found in the roots. Vetiver has gained international recognition as a natural remedy for various environmental issues, including the detoxification of deteriorated soil. Coupling of organic amendments such as vermicomposting, farmyard manure and biocompost with vetiver were assessed. The effectiveness of vetiver soil amended with vermicompost (5 t ha<sup>-1</sup>) + 100% STCR (T<sub>3</sub>) exhibited vast growth and reduced salinity. The ratio of K/Na (>1) of vetiver shoot was 11.21 for T<sub>3</sub> while a least ratio was observed for root (K/Na = 1.22). Vetiver exhibited a high K<sup>+</sup> and low Na<sup>+</sup> levels under salt stress and a higher S<sub>K/Na</sub> ratio (9.99) in T<sub>3</sub> was obtained favouring K accumulation than Na in shoot. Based on the study, it was evident that vetiver grass is a potential candidate for restoring tannery sites that have been contaminated with high amounts of salts and other pollutants.

**Keywords:** Vetiver grass (*Chrysopogon zizanioides*), Tanneries, Vermicompost, Salinity

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