



Evaluation of Gorontalo Indigenous *Trichoderma* sp. Compost on Soil Chemical Properties: A Sustainable Approach to Corn Waste Utilization

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Abstract. This study evaluated the effectiveness of compost derived from corn stover inoculated with Gorontalo indigenous *Trichoderma* isolates, namely *T. asperellum* TZ11DI1 and *T. reesei* TZ31DU1, in improving soil chemical properties. The compost was produced through the fermentation of corn straw inoculated with these indigenous isolates and tested on maize farmland in Suwawa, Gorontalo. The experiment was conducted on three plots: a control plot without compost (T₀), compost with *T. asperellum* (T₁), and compost with *T. reesei* (T₂). The results demonstrated that both types of trichocompost complied with Indonesia compost quality standards and significantly differed from the control. Application of both trichocomposts significantly increased soil pH, organic carbon, total nitrogen, phosphorus (P₂O₅), and potassium (K₂O) content. Treatment T₂, using *T. reesei*, achieved a neutral soil pH (6.81) and the highest levels of phosphorus (41.49 mg 100 g⁻¹) and potassium (28.36 mg 100 g⁻¹). In conclusion, compost based on indigenous *Trichoderma* isolates is effective in improving soil fertility and offers great potential as a sustainable agricultural waste utilization strategy.

Keywords: *Trichoderma asperellum*, *T. reesei*, trichocompost, soil fertility, sustainability