

IMPROVING THE CHEMICAL PROPERTIES OF SOIL USING COMPOST AND DOLOMITE IN MINE LAND RECLAMATION AND MUCUNA GROWTH AT PT. SEBUKU OF IRON LATERITIC ORES

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ABSTRACT

The iron ore mine on Sebuk Island, South Kalimantan will carry out reclamation and revegetation after mining activities are completed so that it is necessary to improve the chemical properties of the soil so that it runs optimally. The purpose of this study was to determine the effect of compost and dolomite doses on soil chemical properties and growth of Mucuna on post-mining land. The research was carried out in August-November 2022. The research was carried out using an experimental method which was arranged using a completely randomized two-factor design. The first factor of compost consists of four levels: 0 tons/ha (K0), 7.5 tons/ha (K1), 15 tons/ha (K2), 22.5 tons/ha (K3). The second factor of dolomite consists of four levels: 0 tons/ha (D0), 7.5 tons/ha (D1), 15 tons/ha (D2), 2.25 tons/ha (D3). Each treatment combination was repeated three times and Mucuna was planted as an indicator. Preliminary analysis parameters consisted of organic matter, KPK, texture, pH of H₂O, pH of KCl, pH of K₂SO₄, total N, available-P, available-K, Al-saturation and Fe-exchanged. Parameters for analysis after treatment were organic matter, KPK, pH H₂O, pH KCl, N-total, P-available, K-available, Al and Fe-exchanged saturation and Mucuna observations with parameters of height and number of leaves. Data were analyzed using ANOVA and continued with DMRT level of 5%. The results showed that the application of compost and dolomite significantly increased the pH of H₂O (7.03), the pH of KCl (7), organic matter (3.5%), the KPK (9.06me%), N-total (0.22%) , K-exchanged (0.055me%) and decreased Fe-exchanged (1.84ppm) but did not significantly increase available P, Al saturation and Mucuna growth. The best recommended dose is the compost treatment of 22.5 tons/ha and dolomite dose of 1.5 tons/ha.

Keywords: dolomite, compost, ex-mining land, legume cover crop