

THE EFFECT OF PROVIDING CHICKEN MANURE IN IMPROVING SOME CHEMICAL PROPERTIES OF LATOSOL SOIL

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ABSTRACT

Latosol soil is defined as soil that has undergone extensive leaching of nutrients and minerals due to the influence of water, resulting in a notable decline in soil chemical properties. It is known that organic material in the form of chicken manure can be used to improve the chemical properties of Latosol soil. This research aims to assess the impact of chicken manure on Latosol soil chemical properties. Latosol soil was taken from Karang Sari Village, Patuk, Gunungkidul. The experiment used a single factor Completely Randomized Design (CRD). In this study, Latosol soil was given chicken manure at a dose of LA0 = 0 g/polybag; LA1 (10 tons/ha) = 13.5 g/polybag; LA2 (20 tons/ha) = 27 g/polybag; LA3 (30 tons/ha) = 40.5 g/polybag; and LA4 (40 tons/ha) = 54 g/polybag. Each polybag contains 3 kg of absolutely dry Latosol soil. The soil was then incubated for 30 days. Next, soil samples are taken for analysis in the laboratory. Soil chemical properties parameters analyzed in the research include pH H₂O, pH KCl, C-organic, N-available, N-total, P-available, P-total, K-available, K-total, and land CEC. Analysis of research data was compared between treatments, then if the data were significantly different, further analysis of the data used the DMRT test with a significance level of 5%. The results showed that chicken manure significantly increased the pH H₂O, pH KCl, P-Total, P-Available, N-Total, K-Total, K-Available, N-Available (NH₄⁺ form) and CEC of Latosol soil. However, the amendment did not significantly increase organic carbon and nitrate-N in the Latosol soil. Based on the results, it is also known that the dose of chicken manure of 30 tons/ha is the best dose to improve the chemical properties of Latosol soil.

Keywords : chemical properties, chicken manure, fertilizer dosage, latosol, organic matter