

GIVING THE DRY SLUDGE OF (IPAL) IN SEWON TO IMPROVE THE PHYSICAL PROPERTIES OF VOLCANIC ASH REGOSOL SOIL IN SEMPU VILLAGE, WEDOMARTANI, NGEMPLAK, SLEMAN, YOGYAKARTA

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ABSTRACT

Volcanic ash Regosol has the potential for good agriculture but is not supported by the physical properties, because it includes newly developed land with sandy texture, blocky structure, water holding capacity, low nutrient content, and low organic matter. Processing urban domestic liquid waste produces sludge with high organic matter and clay loam texture which can potentially improve the physical properties of Regosol soil. This research aims to determine the effect of dry sludge from the (IPAL) Sewon to improve the physical properties of volcanic ash Regosol which is expected to result in changes in physical properties for the better. Laboratory analysis carried out as moisture content, maximum moisture content, bulk density, particle density, porosity, texture, aggregate stability and soil pH. The research was a pot experiment carried out in a greenhouse using a Completely Randomized Design (CRD) with 1 factor, namely the dose of dry sludge IPAL at 6 levels (0, 5, 10, 15, 20, and 25 tons/ha). Dry sludge was taken at Balai PIALAM Yogyakarta, The Regosol soil from Sempu village, Wedomartanai, Yogyakarta. Analysis of research data using ANOVA with level of trust 95% and continued with the BNJ (Beda Nyata Jujur) test level 5%. The research results showed that the application of dry sludge (IPAL) changed the texture of the volcanic ash Regosol soil from sand to loamy sand and showed no real effect, but increased the value of maximum moisture content, reduced the pH and bulk density. The provision of dry sludge (IPAL) significantly increased the moisture content, particle density, porosity of soil and reduced the aggregate stability. The L5 dose treatment (25 tons/ha) is the best dose for improving the physical properties of volcanic ash Regosol by changing the texture of the volcanic ash Regosol soil from sand to loamy sand. It has a significant effect on increasing moisture content, soil density, soil porosity, and reducing aggregate stability

Keyword : *dry sludge of (IPAL), soil physical properties, volcanic ash Regosol.*