CONSISTENCY OF SOIL THAT DEVELOPS ON THE EAST JIWO HILLS, BAYAT SUBDISTRICT, KLATEN REGENCY, CENTRAL JAVA

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ABSTRACT

The parent material of soil is an important factor in soil development, influencing its consistency. The research area contains complex rock formations with varying characteristics, which affect the types of soil formed and their properties. The hilly topography of the research area also influences the soil formation process. This study aims to determine the consistency of different soil types. The research was conducted in the Jiwo Timur Hills and the Land Resources Laboratory. Sample points were determined using a purposive method based on land system maps, overlaying geological formation maps, soil type maps, and elevation maps. A total of 27 samples were collected from each land system at a depth of 0-20 cm. Soil consistency was assessed using the Atterberg method to determine liquid limit (LL), plastic limit (PL), plasticity index (PI), shrinkage limit (SL), workability (WO), plasticity index (IP), maximum water holding capacity (WHC), water surplus (WS), and clay activity. The results show that vertisol has high LL, PL, and PI values, while SL, WO, and IP are low to moderate, with WHC low to high and WS negative. Litosol has low to moderate LL, SL, and WO, high PL and PI values, very low to low IP, very low to high WHC, and negative to positive WS. Alluvial soil has LL values ranging from low to high, high to very high PL and PI values, and very low to high SL. WO, IP, and WHC are low to moderate, with WS being negative-positive.

Keywords: Soil Consistency, Atterberg Method, Jiwo Hill