

**CHARACTERISTICS OF PHYSICAL AND CHEMICAL PROPERTIES
OF SOIL IN DRYLANDS DEVELOPING FROM THE NGLANGGERAN
FORMATION, YOUNG MERAPI VOLCANO FORMATION, AND
SEMILIR FORMATION IN BANTUL REGENCY, D.I YOGYAKARTA**

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ABSTRACT

Bantul has soils developed from parent materials of the Nglanggeran Formation, Young Merapi Volcano Formation, and Semilir Formation. The differences in parent materials result in soils with varying physical and chemical properties. The objective of this study is to examine the physical and chemical properties of soils developed from these three formations and compare the results of the analyses of the physical and chemical properties of soils from each formation on dry land. The study was conducted using a survey method to determine the general condition of the study area, land observations, and sample collection determined by purposive sampling, specifically 3 sample points for each formation, and soil sampling. The results of the study showed that soils developed in the Young Merapi Volcano Formation were dominated by sand fractions, soils developed in the Nglanggeran Formation were dominated by clay fractions, while soils developed in the Semilir Formation have a texture dominated by silt. The chemical properties of the three soils are nearly identical, with pH levels ranging from slightly acidic to acidic, low levels of organic carbon (C), total nitrogen (N), available phosphorus (P), and available iron (Fe). This indicates that these soils are deficient in nutrients, likely due to advanced soil development and high rainfall conditions leading to leaching.

Keywords: Parent material, dry land, physical and chemical properties