

## **ABSTRACT**

Mineral materials in soil come from the weathering of rocks. Volcanic rocks are generally composed of minerals that contain many plant nutrients. While sedimentary and metamorphic rocks generally contain minerals that are low in nutrients. The chemical characteristics of volcanic soils are reflected by the influence of the parent material and its degree of weathering. Soil organic matter, aluminum, iron and active silica are the elements that most prominently regulate the chemical reactions in this soil. Aceh Tengah District consists of highly variable elevations and slopes that can affect the nature and degree of soil weathering. The aim of this research to determine the characteristics of volcanic parent soil that develops on three slope positions in Central Aceh District. This research was conducted in the coffee plantation of Telagatu Village community, Kebayakan Sub-district, Central Aceh District, Aceh Province. This research used a survey method. The results showed that the morphological characteristics of the soil showed soil color that ranged from dark to yellowish red. The soil structure found at the research site is angular and crumbly with strong to weak soil stability. The soil texture in the three profiles ranges from clay to sandy, but dominated by dust fraction. Soil reaction (pH) in all three profiles is classified as slightly acidic to neutral. The C-organic content of the three profiles is moderate to low, each having higher C-organic content in the A horizon. Cation exchange capacity values range from high to low, the values getting higher as the profile position gets lower.

**Keywords:** clay minerals, soil organic matter, soil texture