

Telaah Sifat Fisik, Kimia, dan Mineralogi Tanah Merah dari Bahan Induk Vulkanik Kwartir dan Tersier

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ABSTRAK

Indonesia memiliki banyak gunungapi aktif dan tidak aktif yang menghasilkan berbagai jenis batuan dan membentuk berbagai jenis tanah, salah satunya tanah merah yang dominan di wilayah tropika basah. Tujuan penelitian adalah menelaah dua pedon tanah merah yang berkembang dari bahan induk vulkanik Kwartir dan Tersier. Penelitian dilakukan pada Juni 2016 hingga Juli 2017, lokasi pedon tanah merah vulkanik Kwartir di Desa Tugu, Kecamatan Jumantono, Kabupaten Karanganyar, Jawa Tengah dan pedon tanah merah vulkanik Tersier di Desa Nglanggeran, Kecamatan Patuk, Kabupaten Gunungkidul, D.I.Yogyakarta. Penentuan profil tanah secara purposif. Parameter meliputi sifat fisik (warna tanah, tekstur 10 fraksi, berat jenis, berat volume, dan porositas), sifat kimia (Al total dan Fe total, Fe dithionit, Fe oksalat, Fe pirofosfat, C-Organik, pH H₂O, pH KCl, pH K₂SO₄, basa-basa tertukar, KPK, dan kejenuhan basa), serta sifat mineralogi (sayatan tipis batuan dan analisis fraksi pasir). Berdasarkan hasil penelitian, kedua pedon tanah merah memiliki kemiripan sifat fisik khususnya tekstur. Nilai basa-basa tertukar, KPK, kejenuhan basa, Al total dan Fe total pedon tanah merah vulkanik Tersier relatif lebih besar dibandingkan pedon tanah merah vulkanik Kwartir. Kedua pedon tanah merah berkembang dari batuan vulkanik yang bersifat andesitik dengan pedon tanah merah vulkanik Tersier berkembang lebih lanjut. Menurut *Soil Taxonomy USDA 2014*, pedon tanah merah vulkanik Kwartir termasuk *subgroup Typic Dystrudept* dan pedon tanah merah vulkanik Tersier termasuk *subgroup Typic Eutrudept*.

Kata Kunci: Kwartir, Tanah Merah, Tersier, Vulkanik

Study of Physical, Chemical, and Mineralogical Properties of Red Soil from Quaternary and Tertiary Volcanic Parent Materials

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ABSTRACT

Indonesia has active and inactive volcanoes which produced various types of rock that will form various types of soil, one of them is red soil which is dominant in wet tropic. The aim of research was to examine two red soil pedons developed from Quaternary and Tertiary volcanic parent materials. The research was conducted in June 2016 until July 2017, location of the Quaternary red soil pedon in Tugu Village, Jumantono Sub-district, Karanganyar Regency, Central Java and the Tertiary red soil pedon in Nglanggeran Village, Patuk Sub-district, Gunungkidul Regency, Special Region of Yogyakarta. The soil profile was determined by using purposive method. Parameters include physical properties (soil color, texture 10 fractions, bulk density, particle density, and porosity), chemical properties (Al and Fe total, Fe dithionite, Fe oxalate, Fe pyrophosphate, C-Organic, pH H₂O, pH KCl, pH K₂SO₄, exchangeable bases, CEC, and bases saturation), and mineralogical properties (thin incision of rocks and sand fraction analysis). Based on results of research, both red soil pedon have similar physical properties especially texture. The value of exchangeable bases, CEC, bases saturation, Al total and Fe total of the Tertiary volcanic red soil pedon is relatively higher than Quaternary volcanic red soil pedon. Both pedon are developed from andesitic volcanic rock with the Tertiary volcanic red soil pedon develops further. According to Soil Taxonomy USDA 2014, the Quaternary volcanic red soil is Typic Dystrudept subgroup and the Tertiary volcanic red soil is Typic Eutrudept subgroup.

Keywords: Quaternary, Red Soil, Tertiary, Volcan