



ABSTRACT

This study aims to identify the physical, chemical, and mineralogical properties as well as the formation and classification of soil developing from gabbro parent rock, phyllite and chert. The soil profiles were made to represent each of the gabbro, phyllite and chert stock material located on the upper and middle slopes with pine-dominated vegetation and mixed gardens. Field observations include treads among others to observe topography, vegetation and slope and profile descriptions to observe soil morphology. Soil samples were taken on each horizon for analysis of soil physical properties (BD, PD, and texture), soil chemical properties (pH, expressed cation, CEC, available-P, organic-C, and total-N), and soil mineralogy (type of clay minerals and total elements). Soils were classified according to PPT Bogor, Soil Taxonomy (USDA) and FAO (WRB). The results showed that texture analysis showed that the content of clay that developed from parent material Gabbro 1> Chert 1> Phyllite 1> Chert 2> Phyllite 2> Gabbro 2. Soil acidity level (pH) of soil developed from Gabbro 2> Gabbro 1> Chert 1 ~ Chert 2> Phyllite 1 ~ Phyllite 2. CEC of soil developed from Gabbro 1 Gabbro 2> Phyllite 1> Chert 1> Phyllite 2> Chert 2. Base saturated of soil developed from Chert 2> Gabbro 2> Chert 1> Phyllite 2> Phyllite 1> Gabbro 1. Based on the diagnostic horizon, the soil developed from Gabbro 1 and Phyllite 1 rocks was more developed since it has an argillic horizon while Gabbro 2, Phyllite 2, Chert 1 and Chert 2 have just formed cambic horizons. The Gabbro 1 rocks developed into Podsolik Haplik (PPT Bogor), equivalent to Typic Hapludalf, kaolinitic, slightly acid, isohyperthermic (USDA) and Haplic Luvisol (clayic, cutanic) (FAO/WRB). The Gabbro 2 parent rock developed into Kambisol District (PPT Bogor), equivalent to Typic Eutrudepts, smectitic, slightly acid isohyperthermic (USDA) and Dystric Cambisol (loamic, ochric) (FAO/WRB). The parent rocks of Phyllite 1 developed into Podsolik Haplik (PPT Bogor), equivalent to Typic Hapludalf, kaolinitic, acid, isohyperthermic (USDA) and Haplic Luvisol (clayic, cutanic) (FAO/WRB). The parent rock of Phyllite 2 developed into Kambisol Kromic soil (PPT Bogor), equivalent to Typic Dystrudepts, kaolinitic, acid isohyperthermic (USDA) and Chromic Cambisol (loamic, ochric) (FAO/WRB). The parent rocks of Chert 1 developed into Kambisol Kromic soil (PPT Bogor), equivalent to Typic Dystrudepts, kaolinitic, slightly acid isohyperthermic (USDA) and Dystric Cambisol (clayic, ochric) (FAO/WRB). The parent rock of Chert 2 developed into Kambisol Kromic soil (PPT Bogor), equivalent to Typic Eutrudepts, kaolinitic, slightly acid isohyperthermic (USDA) and Dystric Cambisol (loamic, ochric) (FAO/WRB).

Keywords: *Genesis, Rock, Gabbro, phyllite, chert, Karangsembung*



INTISARI

Penelitian ini bertujuan untuk mengidentifikasi sifat fisika, kimia, dan mineralogi serta proses pembentukan dan klasifikasi tanah yang berkembang dari batuan induk gabro, filit dan rijang. Profil tanah dibuat untuk mewakili masing-masing bahan induk gabro, filit dan rijang yang berada pada lereng atas dan tengah dengan vegetasi yang didominasi oleh pinus dan kebun campuran. Pengamatan di lapangan meliputi tapak diantaranya untuk mengamati topografi, vegetasi dan kemiringan serta deskripsi profil untuk mengamati morfologi tanah. Sampel tanah diambil pada masing-masing horizon untuk analisis sifat fisika tanah (BV, BJ, dan tekstur), sifat kimia tanah (pH, kation tertukar, KPK, P-tersedia, C-organik, dan N-total), dan mineralogi tanah (Jenis mineral lempung dan total elemen). Klasifikasi tanah dibuat mengikuti sistem klasifikasi PPT Bogor, Soil Taxonomy (USDA) dan FAO (WRB). Hasil analisis tekstur menunjukkan bahwa kandungan lempung tanah yang berkembang dari bahan induk Gabro 1>Rijang 1>Filit 1>Rijang 2>Filit 2>Gabro 2. Tingkat kemasaman (pH) tanah yang berkembang dari bahan induk Gabro 2>Gabro 1>Rijang 1~Rijang 2>Filit 1~Filit 2. KPK tanah yang berkembang dari bahan induk Gabro 1>Gabro 2>Filit 1>Rijang 1>Filit 2>Rijang 2. KB tanah yang berkembang dari bahan induk Rijang 2>Gabro 2>Rijang 1>Filit 2>Filit 1>Gabro 1. Berdasarkan ciri horizon diagnostik, tanah yang berkembang dari batuan induk Gabro 1 dan Filit 1 lebih berkembang karena sudah terbentuk horizon argilik sedangkan Gabro 2, Filit 2, Rijang 1 dan Rijang 2 baru terbentuk horizon kambik. Batuan induk Gabro 1 berkembang menjadi tanah *Podsolik Haplik* (PPT Bogor) setara dengan *Typic Hapludalf, kaolinitic, slightly acid, isohyperthermic* (USDA) dan *Haplic Luvisol (clayic, cutanic)* (FAOWRB). Batuan induk Gabro 2 berkembang menjadi tanah *Kambisol Distrik* (PPT Bogor) setara dengan *Typic Eutrudepts, smectitic, slightly acid isohyperthermic* (USDA) dan *Dystric Cambisol (loamic, ochric)* (FAOWRB). Batuan induk Filit 1 berkembang menjadi tanah *Podsolik Haplik* (PPT Bogor) setara dengan *Typic Hapludalf, kaolinitic, acid, isohyperthermic* (USDA) dan *Haplic Luvisol (clayic, cutanic)* (FAOWRB). Batuan induk Filit 2 berkembang menjadi tanah *Kambisol Kromik* (PPT Bogor) setara dengan *Typic Dystrudepts, kaolinitic, acid isohyperthermic* (USDA) dan *Chromic Cambisol (loamic, ochric)* (FAOWRB). Batuan induk Rijang 1 berkembang menjadi tanah *Kambisol Kromik* (PPT Bogor) setara dengan *Typic Dystrudepts, kaolinitic, slightly acid isohyperthermic* (USDA) dan *Dystric Cambisol (clayic, ochric)* (FAOWRB). Batuan induk Rijang 2 berkembang menjadi tanah *Kambisol Kromik* (PPT Bogor) setara dengan *Typic Eutrudepts, kaolinitic, slightly acid isohyperthermic* (USDA) dan *Dystric Cambisol (loamic, ochric)* (FAOWRB).

Kata Kunci : Genesis, Batuan, Gabro, Filit, Rijang, Karangsembung