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Clay mineralogy of soils derived from different parent materials in Binaloud zone, western Mashhad

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Abstract: The objective of this study was to investigate the clay mineralogy of soils derived from different parent materials in Binaloud zone, western Mashhad. Two soil profiles on the summit of granitic, ultrabasic and metamorphic rocks were described and sampled from genetic horizons. Clay fraction of the soils was analyzed using X-ray diffraction method. Chlorite, smectite, mica, amphibole and regularly interstratified chlorite/smectite and chlorite/mica are the most important clay minerals in the studied soils. Chlorite in ultrabasic soils and parent material of metamorphic soil is Mg-rich in contrast to Fe-rich chlorite in granitic soil. Amphibole was common in ultrabasic soil and metamorphic soil had much less amphibole. The eolian origin has been identified for mica in ultrabasic soil. As a result of higher weathering intensity in ultrabasic soil, the aboundance of regularly interstratified clay minerals were higher than the other soils.

Keywords: *Clay mineral; peridotite; granite; parent materials; Mashhad.*

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