



Spatial Patterns of Soil Moisture From Infiltration Dataset at High Landslide Susceptibility Areas of Layered Clayey Soils

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The process of water entry into the soil plays an important role in the occurrence of landslides triggered by hydrological processes. Infiltration may become an issue key in understanding the soil moisture patterns. The location of the soil moisture concentration is identical to the initial location of the landslide. Soil moisture concentration is influenced by various factors, including topography, soil physical characteristics, and subsurface characteristics. The spatial pattern of soil moisture at the locations around the former landslide is suspected to have a similar pattern to the area where the landslides may occurred. In this study, soil moisture patterns was characterized based on infiltration rate data at two different types of landslides, rotational landslide and translational landslide. In situ measurements were conducted on sub watershed with 294 ha area of layered clayey soils, where more than 60% of the area was active and inactive landslides. The landslide types was identified using aerial photography interpretation and survey methods. In situ infiltration measurements were made at more than 300 points using Minidisk Infiltrometer Model-S. At some points we also measure at different depth to cover multi clay layers using Guelph Permeameter. Based on the observation, there are spatial pattern of infiltration rate in two different types of landslide. This study shows that topography affect infiltration rate and soil moisture concentration. Also soil physical characteristics and subsurface characteristics obtain the infiltration rate and soil moisture patterns. The results indicate that the rotational landslide type has a higher infiltration rate than the infiltration rate in the translational type of landslide. It can be conclude that soil moisture concentration in rotational landslide type is higher than soil moisture concentration in translational landslide.