Vegetation influencing to landslide caused by the 2017 Northern Kyushu Heavy Rain at volcanic rock fields

*Takehiro Ohta[1], Yoshimi Saeki, Seiya Eguchi[1]

1. Yamaguchi University

Many landslides with debris flows occurred around Asakura City and Hita City at the 2017 Northern Kyushu Heavy Rain. Huge precipitation detected, and caused many shallow slope slides at Asakura City, whereas at Hita and Toho districts some deep landslides were induced by relative small amount of rainfall. We studied, therefore, internal factors, e.g. geological structure and vegetation, of deep landslides at Hita and Toho districts.

This study targeted four deep landslides to understand the vegetation and geological structure influencing to landslide. Every landslide has same geological structure, which consist of pyroclastic rocks covered by block lava and/or massive lava and by talus deposit including andesite blocks. Landslides occurred at block lava or talus deposit, and older sliding gauges distribute at lower part of lava and/or top of pyroclastic rocks.

Coniferous planting, which is well developed, are distributed around every landslide area. These coniferous ages are 10 to 30 years or 30 to 50 years estimated from diameters at breast-height. At scarps of landslides there are the younger coniferous and/or the mix forest of coniferous and broadleaf tree.

As the results mentioned above, the landslides at Hita and Toho districts have same geological structure. Therefore, the geological conditions may control occurrence of deep landslide at volcanic region. Whereas remarkable vegetation influencing to landslide could not be recognized at same area. However, un-developed vegetation distribute around some landslides, therefore we cannot ignore affect of vegetation to cause deep landslide at volcanic region.

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