

SOIL INFILTRATION CHARACTERISTICS OF DIFFERENT LANDUSE TYPES AT LUOT MOUNTAIN, XUAN MAI, HANOI

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SUMMARY

The infiltration of soil is one of the important criteria reflecting the ability to retain water, limit overland flow and formation of peakflow. To evaluate infiltration characteristics of different landuse types, we measured infiltration rate within 7 landuse types including mixed-plantations forest (Pine-Acacia mangium; Eucalyptus-Acacia mangium), pure-plantation forest (Acacia mangium, acacia, pine), grass-shrub and bare land with 49 measurements at different times (7 time/landuse type). The main results of this study include: 1) Infiltration rate of landuse types is tended to be decreased over time. Initial and stable infiltration are reaching the highest value in Acacia mangium (corresponding to 24.8 and 9.7 mm min⁻¹, respectively) and lowest in bare land (8.9 and 1.1 mm min⁻¹, respectively). In addition, 1-hr infiltration rate of landuse types is very large, ranging from 204 mmhr⁻¹ (bare land) to 809 mmhr⁻¹ (Acacia mangium), averaging 375 mmhr⁻¹; 2) The initial infiltration rate (mm min⁻¹) of landuse types tends to depend on the moisture of the topsoil with the average level of relationship ($r = 0.4$). However, the initial infiltration rate is no clear relationship with bulk density and porosity. In contrast, stable infiltration rate (mm min⁻¹) does not depend explicitly on surface soil moisture which depends on bulk the density and porosity.