

STUDY ON THE CONTENT OF SOME HEAVY METALS IN AGRICULTURAL LAND IN PHU LUONG DISTRICT, THAI NGUYEN PROVINCE IN DIFFERENT TYPES OF TERRAINS AND DIFFERENT CULTIVATION REGIMES

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Summary

Study on the content of some heavy metals in agricultural land in Phu Luong district, Thai Nguyen province in different types of terrain and cultivation regimes based on the results of remote sensing image interpretation, vegetation index (NDVI) and heavy metal content in soil indicated that sloping land in Phu Luong district occupied mainly the group reddish brown earth on base and neutral magmatic rocks, yellowish soil on sandstone, reddish yellow soil on claystone and metamorphic with sloping over 3⁰ occupy more than 90% of total area and thickness of soil layer from 70 - 100 cm occupying 62.01% of the total area. The heavy metals content in the study area is influenced by two main factors: climate and human resources, including a negative correlation between NDVI and the average annual rainfall, positive correlation with slope and elevation. In addition, slope and altitude are negatively correlated with average annual rainfall. Heavy metal content in sloping land is lower than Vietnam's standard regulation QCVN / 03MT. The relationship between Pb, As and Cd in soils increases in the order of Acacia <Tea <Rice, showing negative correlation with slope respectively in the following order: As (-0.582 *) > Cd (-0.520 *) > Pb (-0.5) > pHKCL (-0.106), which is positively correlated with the nearest major mineral and mining activities. Pollutant Load Index (PLI) was negatively correlated with slope (-0.626 *), NDVI (-0.516 *), elevation (-0.664 **), positive correlation with rainfall (0.474). The content of heavy metals in agricultural land is reduced in the following order: Rice <Tea <Acacia.

Keywords: Sloping land, Correlation, NDVI, heavy metal, Phu luong.