SOIL CHEMICAL PROPERTIES OF *Pinus massoniana* FOREST AFTER WILDFIRE IN SOC SON DISTRICT, HANOI CITY

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Summary

Recently forest fire has not only occurred and caused economic losses for forest enterprises and planters but also changed some properties of soil during the post-fire period. This study was conducted to determine changes of properties and nutrients in soils after occurring forest fire. Soil samples were collected from at burned forest area and non-burned forest area of Pinus massoniana plantation in Soc Son district, Hanoi. This study show that the pH and total nitrogen content in forest soil after burning is higher than the control in both O (3%) and A layers (55%). In comparison with control, at O layer, the total phosphorus content increased, while the total carbon content decreased; in contrast, at layer A the total carbon content increased (22%) but the total phosphorus content decreased (50%). Forest fire also was a cause to increase the amount of dissolved inorganic substances (DIP, $N\text{-}NH_4^+$, NO_3^-) with amount of 6.32 $mgkg^{-1}$; 23.17 $mgkg^{-1}$; 519.47 $mgkg^{-1}$ respectively. In both sites, DOP concentration at layer A accounted for more than 95% of the TDP, $N\text{-}NH_4^+$ covered more 90% in A and O layers and about 60% in the Biochar layer. At O and Biochar layers of burned forest soil, the concentration of DIP accounts for over 70% of the TDP. The results show that after burning, forest soils have more nutrients compared with control. Especially, biochar layer producing by forest fire was the nutrient reserves of total nutrient content as well as dissolved nutrients for plant growth.

Keywords: *Wildfire, dissolved inorganic phosphorus (DIP), dissolved inorganic phosphorus (DOP), Biochar.*