

Abstract

Stress caused by heavy metals (Pb+Cd) in agricultural fields is one of the complex challenge. Doped biochar has the capability to absorb heavy metal contaminants from the soil. In this study, silicon and iron-doped biochar were used on soil to reduce the Pb and Cd stress in *Allium cepa*. A total of five treatments were made: control (T1), Pb and Cd (T2), Pb+Cd+ 3% w/w doped biochar (T3), Pb+Cd+ 6% w/w doped biochar (T4), and Pb+Cd+ 9% w/w doped biochar (T5). The heavy metal (Pb+Cd) stress in *Allium cepa* was examined using an atomic absorption spectrophotometer, and the absorbance was checked using ultraviolet visible spectroscopy. The results of an atomic absorption spectrophotometer indicate that a very small concentration of heavy metals was translocated from soil to *Allium cepa*. *Allium cepa* shows a positive response towards Pb and Cd. Iron and silicon nanoparticles doped biochar has no significant role in mitigating heavy metals stress in *Allium cepa*. Ultraviolet visible spectroscopy results show that all the treatments have different lamda max values.