

Phytoremediation potential of *Centella asiatica* for heavy metals removal from wastewater

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Wastewater is generally generated from different sectors including industries, residential areas, hospital and educational institutes. Wastewater used for irrigation purposes, causes health risks and contaminates the food chain. Like other sector, higher education institutes, including Hazara University generated waste water. It is important to treat wastewater prior to release in the nearby water bodies. This study was conducted to assess the potential of *Centella asiatica* for the treatment of wastewater. For this purpose, wastewater was collected from the outlet of Hazara University, Mansehra, plants were grown for one month. After exposure, plants samples and treated wastewater was collected and analysed for physicochemical parameters including heavy metals. Results showed that the concentration of total suspended solids (TSS), total solids (TS) and total dissolved solid (TDS) were reduced by 88%, 34%, and 35%, respectively in post-harvest water. Moreover, *Centella Asiatica* was able to remove 96% of the lead (Pb), 91% chromium (Cr), 90% Arsenic (As), 21% Cadmium (Cd), and 99% Iron (Fe) from wastewater. The concentration of heavy metals in roots/shoots of *Centella asiatica* followed the sequence: Cr>Pb>Fe>CD>As. The lower accumulation of heavy metals in roots/shoots is due to the presence of lower concentration of heavy metals in wastewater. The translocation factor (TF) for Cd, Pb, As and Cr was > 1 and BCF for Cr was > 1. From the present study it is clear that *Centella asiatica* has potential for the treatment of wastewater.