

**Phytoremediation: a novel approach of bast fiber plants (hemp, kenaf, jute and flax)  
for heavy metals decontamination in soil—review**

**ABSTRACT**

Heavy metal pollution in the environment is a major concern for humans as it is nonbiodegradable and can have a lot of effects on the environment, humans as well as plants. At present, a solution to this problem is suggested in terms of a new, innovative and eco-friendly technology known as phytoremediation. Bast fiber plants are typically non-edible crops that have a short life cycle. It is one of the significant crops that has attracted interest for many industrial uses because of its constant fiber supply and ease of maintenance. Due to its low maintenance requirements with minimum economic investment, bast fiber plants have been widely used in phytoremediation. Nevertheless, these plants have the ability to extract metals from the soil through their deep roots, combined with their commercial prospects, making them an ideal candidate as a profit-yielding crop for phytoremediation purposes. Therefore, a comprehensive review is needed for a better understanding of the morphology and phytoremediation mechanism of four commonly bast fiber plants, such as hemp (*Cannabis sativa*), kenaf (*Hibiscus cannabinus*), jute (*Corchorus olitorius*) and Flax (*Linum usitatissimum*). This review article summarizes the existing research on the phytoremediation potential of these plants grown in different toxic pollutants such as Lead (Pb), Cadmium (Cd) and Zinc (Zn). This work also discusses several aids including natural and chemical amendments to improve phytoremediation. The role of these amendments in the bioavailability of contaminants, their uptake, translocation and bioaccumulation, as well as their effect on plant growth and development, has been highlighted in this paper. This paper helps in identifying, comparing and addressing the recent achievements of bast fiber plants for the phytoremediation of heavy metals in contaminated soil.