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Anthropogenic Environmental Hazards

Compensation and Mitigation

Springer

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ISBN 978-3-031-41012-3 ISBN 978-3-031-41013-0 (eBook)
https://doi.org/10.1007/978-3-031-41013-0

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

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Accumulation of Heavy Metals in Roadside Plants and Their Role in Phytoremediation

Dipak Kumar Mahida, Vishal M. Makwana, Mahipal Singh Sankhla, Ankita Patel, and Pravinsang Dodia

Abstract Plants play very crucial roles in pollution control. According to their physical and chemical properties, contaminants can either be stable or labile. The movement of the stoma, or mouth of the leaf, and trichome adsorption are what allow plants to carry out the absorption process (spines or leaf hair). Heavy metals are the group of inorganic chemical pollutants and road traffic emissions that are most harmful to the biosphere. Since they cannot be broken down through biological and chemical processes, unlike organic pollutants, they tend to accumulate in the environment. Vehicular emissions and industrial exhausts harm the ecosystem while also causing heavy metal contamination. Untamed plants growing beside roadsides may be able to assist reduce heavy metal pollution. Heavy metals that impact the morphological, physiological, and reproductive characteristics of plants progressively change the pH of the soil. Roadside vegetation's germination and seedling development are impacted by heavy metal pollution. Phytoremediation can be employed as an alternative solution for heavy metal remediation processes because of its advantages as a low-cost, high-efficient, environmentally acceptable and eco-friendly techniques based on the utilization of metal accumulating plants. Future research on the number of heavy metals in a range of tropical roadside plants is necessary to determine the exact source and transport processes.

All the authors have contributed equally.

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P. Pathak et al. (eds.), *Anthropogenic Environmental Hazards*,
https://doi.org/10.1007/978-3-031-41013-0_6