ABSTRACT

Increased natural and human activities over the last century have led to excess levels of inorganic and organic pollutants into the environment and natural ecosystems. This review critically examines heavy metal and organic pollutants' role in wood treatment sites and their etiological consequences. These pollutants are not only recalcitrant but also tenacious to degradation under ordinary conditions. Although some heavy metals are essential to human health, they are toxic at elevated concentrations. Heavy metals feature carcinogenic properties and cause serious health risks to live systems and the environment because of their bio-accumulative, non-degenerative, and refractory characteristics. On the other hand, organic pollutants are readily introduced into the ecosystem from irresponsible use of detergents, volatile organic compounds, paints, pesticides, and wood preservatives. During the wood treatment process, various chemicals are used to enhance durability. Nevertheless, the use of wood preservatives such as chromated copper arsenate (CCA) and pentachlorophenol (PCP) potentially induces pollutants considered detrimental to human health and the ecological environment. Remediation of wood treatment sites using phytomanagement strategies and nanotechnologies has been presented in this review. Therefore, some challenges and recommendations for further research and applications are herein presented.

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