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Bioremediation of long-term PCB-contaminated soil by white-rot fungi

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Highlights

- *Pleurotus ostreatus* efficiently degraded PCBs in real contaminated soil
- The best results, represented by 50% degradation, were observed in rhizosphere soil
- *P. ostreatus* decomposes the aromatic moiety of PCBs in soil *via* chlorobenzoic acids
- The fungus effectively colonized the soil and suppressed other fungi
- Community analysis showed stimulation of bacteria encompassing putative PCB degraders

ABSTRACT

The objective of this work was to test the PCB-degrading abilities of two white-rot fungi, namely *Pleurotus ostreatus* and *Irpex lacteus*, in real contaminated soils with different chemical properties and autochthonous microflora. In addition to the efficiency in PCB removal, attention was given to other important parameters, such as changes in the toxicity and formation of PCB transformation products. Moreover, structural shifts and dynamics of both bacterial and fungal communities were