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ostreatus, A-6 and 0ST-1 showed higher reduction of 84% and 64% in HCH persistence respectively. Exotic strains of same species used were OST-Belgium and WC-522 which manifested less reduction of 29% and 45% respectively (Table 3). Least reduction (4%) was observed by using Pleurotus Pulmonarius (WC-537) compared with exotic and local isolates of Pleurotus ostreatus. The order of biodegradation of -HCH in presence of white rot fungi species were OST-1>A6>WC-522>OST-Belgium>WC-537. Likewise, - HCH was highly degraded by A-6(85%) followed by OST-1(45%) while minimum reduction was observed with OST-Belgium. In case of -HCH, no reduction was observed when OST-Belgium was used in bioassay suggesting Gamma HCH cannot be degraded by this specific isolate of Pleurotus ostreatus. -HCH was degraded in following manner OST-1>A-6>WC-522>WC-537>OST-Belgium.

Biodegradation rate of different isomer of OCPs depends on microorganism spp. and aeration. Likewise HCH isomers vary greatly in their persistence and other properties including (solubility, volatility) so they are degraded at different rates and with different ratios even using similar white rot fungi. Inter conversion of isomers into metabolites is also a prime cause of difference in reduction quantities of these HCH isomers by individual isolates. Conversion of HCH isomers to other breakdown products due to biotic factors is also another cause. Conversion of HCH into tetrachlorocyclohexanol (TCCOL) and TCCH with an allelic hydroxyl group due to white rot fungi is also reported [22]. This degradation of HCH to TCCOL is attributed to certain active enzymes [8]. Difference in Biodegradation efficacy of Pleurotus ostreatus has been linked with Lignolytic enzymes production ability. Different enzymes isolated from Pleurotus ostreatus could participate in degradation of Lindane and its metabolite in soil [23]. As a genetic character, these enzymes could vary among different strains and species of Pleurotus and therefore, can be attributed to the variation in bioremediation potential. Genetic Diversity of the Edible Mushroom Pleurotus sp. By using Amplified Fragment Length Polymorphism (AFLP) markers revealed that even geographically close P. ostreatus strain from culture collections are gnomically distant (their AFLP profile similarity is only 39%), suggesting local and exotic strains also exhibit difference in genetics [24].Genomic distinction can be another prime cause.

Isolates of P. spp. were also studied for their potential to degrade 4,4-DDT and 2,4-DDT. The 5 isolates used in the study were found to have significantly different effects on 4,4-DDT and 2,4-DDT) isomers. Mean reduction in 4,4-DDT and 2,4-DDT isomers by different isolates of Pleurotus spp. (Figure 2) showed isolates OST-1 was most effective and produced 67% and 65% quantitative reduction in 4,4-DDT and 2,4-DDT respectively. Influence of A-6 (69%), OST-Belgium (69%) and WC-537 (51%) was more pronounced for 4,4-DDT than for 2,4-DDT with only 14%, 16% and 0% respectively. Exotic strain of P. ostreatus WC-522 was most inefficient of the isolates and produced only 3% reduction in 2,4-DDT and no reduction was observed in case of 4,4-DDT (Table 3) DDT is biodegraded into DDE under aerobic conditions and into DDD under anaerobic conditions [25]. Both DDD and DDE are more stable and highly toxic compounds. The rate of transformation is dependent upon soil type, temperature, moisture and organic carbon content of the soil [26]. The difference in ability of degradation of DDT among different Pleurotus spp. as well among different strains of P. ostreatus may be associated with difference in production of lignin peroxidase and inhibitors of lignin peroxidase. High percentage of polymorphic loci, an increased genetic distance and isoenzyme variation was reported in a study made on 77 Pleurotus dikaryons from 11 distinct taxa [27].

Evaluation of five white rot Pleurotus spp. for their bioremediation potential against -endosulan and -endosulfan isomers were done in bioassay. Isolates tested were found to produce reduction in both the isomers of endosulfan. However, the efficacy of isolates varied significantly with each.h 3 (P.)Tj /T1_1 1Plt par0.15 Tw 1 1

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OST Belgium (69%) and WC-537 (51%) was more pronounced for 4,4-DDT than for 2,4-DDT with only 14%, 16% and 0% respectively. Exotic strain of P. ostreatus (WC-522) was the most inefficient of the isolates and produced only 3% reduction in 2,4-DDT and no reduction was observed in case of 4,4-DDT. Efficacy of isolates varied significantly with each other for -endosulfan and -endosulfan. A-6 and OST-1 were found most efficient and at par with each other in reducing the amount of - and -endsulfan in bioassay. Mean maximum reduction of Endrin 32% was recorded in WC-537 followed by 29% in WC-522 and 14% in OST-Belgium.

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