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**PROGRAMME
AND
ABSTRACT**



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Simultaneous Degradation of 3-Chlorobenzoate and Phenolic Compounds by Defined Mixed Cultures of Pseudomonas spp.
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It has been generally observed that the laboratory developed xenobiotic-degrading microorganisms do not perform well in field conditions mainly due to the chemical heterogeneity. Hence, it is necessary to develop organisms or consortia that can degrade a variety of toxic chemicals. In the present study, the efficiency of defined consortia of Pseudomonas strains to degrade mixtures of 3-chlorobenzoate (3CBA) and phenol or different isomers of cresol were tested. Defined mixed cultures of Pseudomonas aeruginosa strain 3MT (3CBA) and Pseudomonas sp. strain CP4 (phenol), both isolated in the laboratory, were found to utilize both the co-substrates of the mixtures completely. This seems to be the first report of simultaneous degradation of 3CBA and phenolic compounds by two Pseudomonas strains that follow different modes of ring fission, i.e., ortho-mode by strain 3MT for 3CBA utilization and meta-mode by strain CP4 for utilization of phenol. In general, these pathways are not compatible as exemplified in this study by no or slow utilization of the mixed substrates by mixed cultures of a 3CBA utilizing standard culture P. putida (pAC27) and phenol-utilizing strain CP4.

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Degradation of Glyphosate by Soil Microorganisms. MADHURI G KULKARNI* AND K RAGHU. Nuclear Agriculture Division, Bhabha Atomic Research Centre, Bombay 400085.

Glyphosate (N-phosphonomethyl glycine) is a widely used broad spectrum non-selective, post-emergence herbicide. Studies on the persistence of the herbicide in Indian soils are limited. Experiments with ¹⁴C-glyphosate showed that in sterilized soil there was no mineralization of the herbicide; however in unsterilized soil 61-69% of the herbicide was mineralized as indicated by the evolution of ¹⁴CO₂. By enrichment culture technique several microorganisms were isolated. Subsequent screening showed that two actinomycetes were effective in the degradation of glyphosate as evidenced by radiometric and GLC studies. Detailed studies with culture media indicated the formation of an unidentified metabolite as evidenced by TLC and autoradiographic procedures. This compound is not one of the metabolites known to accumulate in the medium or soil such as aminomethyl phosphonic acid (AMPA), glycine and sarcosine. Available evidence suggests that this metabolite has derived the phosphonomethyl carbon and phosphonic acid group from glyphosate.