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FOOD TECHNOLOGY UPDATE

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Phenolic compounds including cresols (methylated phenol) constitute a major bulk of environmental pollutants originating from industries such as oil refineries, petrochemical and coal gasification plants, coke ovens etc. These compounds are toxic and recalcitrant and contamination of drinking water with them even in trace amounts renders it unfit for potable purposes. Treatment technologies based on microbial degradation of the toxic constituents of industrial effluents are considered to be very efficient. A strain of *Pseudomonas* sp. CP4 which utilised high concentration of phenol (1.5g/L) has been already reported. The present study deals with the degradation of various levels of different isomers of cresol by this strain. The maximum levels of O-, m-, and p-isomers of cresols that the strain CP4 can utilise as the sole source of carbon and energy were found to be 14 mM, 10 mM and 20 mM, respectively. However, the rates of degradation of the three isomers were in the order O- p- m- cresol, the complete disappearance of 5 mM levels of these compounds occurring at 9, 12 and 24 h, respectively. An increased lag phase in growth was observed with increasing concentrations of the compounds. Extracts of cells grown on different isomers of cresols or phenol showed high levels of catechol 2,3-dioxygenase activity, whereas it was not so when grown on glucose or succinate. Catechol 1,2-dioxygenase activity was, either absent or negligible, indicating that the strain followed a meta ring cleavage pathway. The specific activity of catechol 2,3-dioxygenase varied with growth substrates and was in the following order: Phenol>m->o->p-cresol.

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The flavour enhancing effect of 5'nucleotides in selected foods was evaluated alone and in combination with monosodium glutamate (MSG) (0-0.1 percent). Evaluation was done using a panel consisting of trained, semi-trained and un-trained members from CFTRI, Mysore. Mutton soup gave very good response with the addition of these compounds. The flavour contributed by the flavour nucleotide as well as MSG was rather masked by the original flavour in chicken noodles, though there was apparent enhancement of the flavour intensity. In tomato soup, the required flavour was obtained only with higher levels of the flavour compounds.