Organochlorine pesticide residues in sediments and biota from the coastal area of Dar es Salaam city, Tanzania

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Abstract
Sediment and biota samples were collected from Msimbazi and Kizinga rivers and from the coastal marine environment of Dar es Salaam during both dry and wet seasons. The samples were analyzed for various organochlorine pesticide residues using GC-ECD and GC-MS. Dieldrin, *p*,*p*′-DDT, *p*,*p*′-DDE, *p*,*p*′-DDD, *o*,*p*′-DDT and γ-HCH were detected at significantly greater concentrations above the method detection limits. Recoveries of pesticide residues ranged 86.5–120% in sediments and 62–102% in biota. The average concentrations of total DDT in sediments for the two seasons were almost the same. Biota samples showed significant difference in levels of residues depending on mode of feeding and age of analyzed biota. *p*,*p*′-DDT to total DDT ratios in all matrices indicated recent use of DDT. The levels of residues in sediments suggest possible adverse effects to humans consuming biota that are directly exposed to the sediments. This effect, which is associated with bio-concentration of residues in the tissues of edible aquatic biota, should not affect wildlife. In spite of concern on the adverse effect to humans posed by pesticide residues in sediments, edible biota from the examined water bodies were found to be safe for human consumption.

Keywords
Sediment;
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