

Persistence of Carbofuran in Malaysian Waters

Abstract

The stability of carbofuran was investigated in river, sea and ground waters of Malaysia. The water samples collected were from pollution-free areas in Malaysia and all samples were spiked with carbofuran at 1 $\mu\text{g/mL}$. The concentrations of carbofuran residue in the samples were measured under light and dark conditions at various intervals and their half-lives determined. It was found that the half-lives in unfiltered and filtered river water exposed to sunlight and filtered river water kept in the dark were 5, 6.6 and 8.6 days respectively. For sea water exposed to sunlight and kept in the dark, the half-lives of carbofuran were 3.28 and 12.98 days respectively. The residue of carbofuran was monitored in ground water and it was observed that the concentration of carbofuran was reduced to 65% of the initial concentration after 67 days. It was observed that the dissipation of carbofuran through oxidation and adsorption on solid suspended materials was insignificant. This study showed that photolysis and hydrolysis are the main pathways for the dissipation of carbofuran in water and that the pH of the water is one of the main factors influencing its degradation.