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ACUTE TOXICITY OF COPPER AND CADMIUM
IN SINGLE AND MIXED SALT SOLUTIONS
TO JUVENILE GIANT FRESHWATER PRAWN,
MACROBRACHIUM ROSENBERGII DE MAN

BY

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จาก

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ABSTRACT

The acute toxicities of copper sulphate and cadmium sulphate to juvenile giant freshwater prawn (Macrobrachium rosenbergii) were tested in moderate hard water (Mean 72 mg/l as CaCO_3) at 28°C. The salts were tested separately and in mixtures. The 96-hr LC50 were 0.23 mg/l of copper alone and 0.025 mg/l of cadmium alone. Concentrations of mixture were expressed in "toxic units" by taking them as proportion of 96-hr LC50 values. In order of decreasing toxicity the copper-cadmium mixtures formed the series: Cu-Cd mixture (1:3) > Cu : Cd mixture (1:1) > Cu : Cd mixture (3:1). Copper-cadmium mixture of 1:3 and 1:1 were 1.67 and 1.49 folds respectively, more active than cadmium alone and copper-cadmium mixture of 3:1 was 1.28 folds more active than copper alone. Determination of toxicity curves indicated that 96 hr may not be sufficient to evaluate the acute toxicity of copper-cadmium mixtures to this species.

Atomic absorption determinations of copper, cadmium and copper-cadmium mixture (1:1) residues in M. rosenbergii which survived 25 day exposures in 0.01 and 0.05 of 96-hr LC50 of each toxicant were non-detectable.

There were no difference among 96-hr LC50 values calculated by the methods of Finney (1971), and Litchfield and Wilcoxon (1949).