

ESTIMATION OF LC₅₀ OF MONOCROTOPHOS IN THE FISH, CHANNA PUNCTATUS (BLOCH.)

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The freshwater gets polluted due to entry of excess sewage water, industrial effluents and large number of pesticides used for control of weeds and agricultural pests. Monocrotophos is an important organophosphate pesticide, which is indiscriminately used in India. Monocrotophos is used in agriculture to control a range of insect pests in horticulture and agriculture crops. Fisheries provide an important source of food, employment, income and recreation for people throughout the globe (Hayes et al., 1991; Chambers et al., 1992; Smith, 1993; —, 1994).

Material of *Channa punctatus* were divided into four groups (A, B, C and D). Each group consisting of six individuals. Standard solution of monocrotophos was prepared by dissolving in water in different doses, viz. 200, 400, 600 and 800 ppm were given. The mortality and survival number of fish was recorded for each group after 96 hours.

The data was then analysed statistically using log dose/probit analysis (Finney, 1971; Fischer & Yates, 1963). A regression line was drawn on the basis of two variable, log dose and empirical probit on a simple graph paper and used to determine the expected probit necessary for LC₅₀ determination. LC₅₀ value of monocrotophos was 0.35 with variance 0.015, fiducial limits 0.8490 (+) and 0.7902 (-) and regression equation $Y = 4.99 + 2.25 (x - 0.816)$ against the fish *Channa punctatus* (Table 1 and Fig. 1). The median lethal concentration (LC₅₀) has been estimated 0.35ml/25L for *Channa punctatus* for monocrotophos, which reveals very highly toxic nature of the aforesaid compound. (ACGIH, 1991; USEPA, 1985)

References

American Conference of Governmental Industrial Hygien-

Table I. Regression equation for LC₅₀ of monocrotophos against *Channa punctatus*

Experimental fish	Compound	Regression equation	LC ₅₀ ml/25L	Variance	Fiducial limits
<i>Channa punctatus</i>	Monocrotophos	$Y = 4.99 + 2.25 (X - 0.816)$	0.35	0.015	m1 = (+) 0.8490 m2 = (-) 0.7902

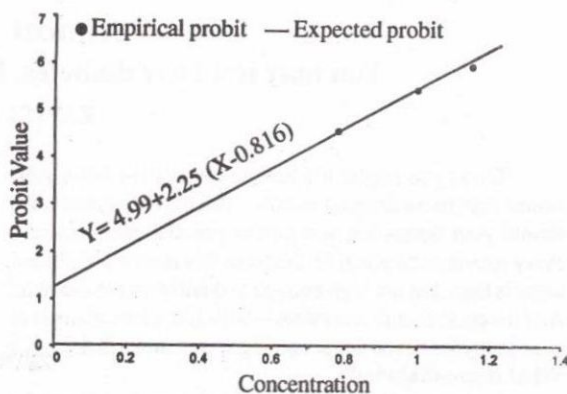


Fig. 1. Regression Line for LC₅₀ of Monocrotophos against *Channa punctatus*.

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