Estimation of LC50 and its confidence interval for the effect of ferrous sulphate on Catla catla

ABSTRACT

Probit analysis is generally employed in the studies of toxicology, to determine the concentration of toxicant causing 50% mortality or LC50 value. The response of an organism is generally binomial and is typically sigmoidal in property. The Probit value can be calculated by hand or can be calculated through the use of a computer via software, the latter utilising the maximum likelihood method which is a more precise estimation of the parameters. When a published result failed to produce the 95% confidence interval, the results can be re-evaluated using software including SPSS. In this study, the LC50 value of the effect of ferrous sulphate to the fish Catla catla is re-evaluated using the Probit modelling exercise via the SPSS software, which gave an LC50 value of 8.271 p.p.m., with a 95% confidence interval from 7.353 to 9.189 p.p.m. The sub lethal concentration (SLC) for ferrous sulphate, which is one fourth of the LC50 value was 2.06 p.p.m.