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Effects of Dimethoate on Tree Frog (*Hyla arborea*) Larvae

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**Abstract:** Considering the global decline of amphibian populations, the present study aimed to investigate the sensitivity of tree frogs to a common pesticide, dimethoate. Our study reports the effects of dimethoate on 21<sup>st</sup>- and 25<sup>th</sup>-stage *Hyla arborea* larvae under standardized laboratory conditions in an acute toxicity test using the static system. Specimens used for testing were obtained from the eggs of mating pairs collected at a local natural pond. Each experimental group contained 10 healthy larvae exposed to 5 different concentrations of technical grade dimethoate for 96 h. For each concentration, including the controls, 3 replicates were used. The concentrations of dimethoate causing 50% mortality (LC<sub>50</sub>) after 96 h were estimated using a probit analysis program. Regarding the lethal concentrations, 21<sup>st</sup>-stage larvae were more sensitive (LC<sub>50</sub> = 20.27 ppm) than the 25<sup>th</sup>-stage larvae (LC<sub>50</sub> = 37.37 ppm). Malformations such as edema and tail deformities were observed in 21<sup>st</sup>- and 25<sup>th</sup>-stage larvae, respectively. Retardation of growth was also observed in dimethoate-exposed 21<sup>st</sup>-stage larvae. Certain signs of toxicity, such as initial hyperactivity symptoms, followed by loss of balance, motionlessness, and finally death, were observed.

**Key Words:** Acute toxicity, organophosphorus pesticides, dimethoate, Amphibia, *Hyla arborea*, anuran larvae

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