

P145. TOXIC EFFECTS OF *DICHLORVOS* ON *GALLERIA MELLONELLA* LARVAE

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Organophosphate insecticides like a Dichlorvos are widely used for the control of agricultural, industrial, and domestic pests. Nontarget organisms, including humans, are exposed to toxic concentrations of organophosphates primarily through food, drinks, and inhalation that can result in neurologic and behavioral disorders, genotoxic and oxidative damage and loss of ion homeostasis.

This study aims to determine the physiological, biochemical and toxic effects of DDVP on model organism, *G. mellonella*.

Fourth instar of *G. mellonella* larvae were fed sublethal DDVP concentrations (2, 4, 6, and 8 mg/100 g feed) until the last instar stage. Protein and MDA content, antioxidant enzymes activities and ion levels were measured.

SOD and CAT activity significantly increased in all DDVP concentrations compared to control. The MDA level was not significantly affected by low DDVP concentrations (2 mg DDVP/100 g feed) but significantly increased at higher concentrations of DDVP, respectively 3.292, 7.898, and 10.031 nmol/mg protein. Sodium ion levels significantly decreased at all DDVP concentrations compared with controls. The potassium ion level significantly increased in high DDVP concentrations.

Exposure to DDVP resulted in induction of superoxide dismutase and catalase activities, and lipid peroxidation in larvae. Potassium and sodium ion levels were significantly altered by DDVP exposure. These results suggest that DDVP causes oxidative stress and lipid peroxidation and alters the antioxidant enzyme activities and ion balance in *G. mellonella* larvae.

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