

Abstract

Experiments were conducted to assess the effect of gibberellic acid (GA_3), a plant growth regulator, on *Locusta migratoria migratoria* fifth instar larvae. Newly emerged larvae were exposed to various concentrations of GA_3 administered by topical application or by forced ingestion. Results showed that treated insects exhibited toxic symptoms with a dose-dependent mortality. GA_3 toxicity was also demonstrated by perturbation of the moult processes. In fact, we noted that treated insects present exuviation difficulties due to the impossibility to reject the old integuments causing mortality in the 5th instar larvae. Histological study of proventriculus revealed alterations in the epithelial cells and absence of apolysis phenomenon. Data also showed that GA_3 induced significant quantitative variation of haemolymph metabolites. These changes result in a significant decrease in the total concentration of proteins and carbohydrates and an increase in the total concentration of haemolymph lipids.