ABSTRACT

The present work was divided into two parts. The 1st part data obtained show that the treatment of 4th instar larvae of *Spodoptera Littoralis* with *Bacillus Thuringiensis*, Chlorpyrifos and both IGRs resulted in a significant prolongation in both the larval and pupal duration except in case of Chlorpyrifos the pupal duration not affected. On the other hand all treatment decreases the pupal weight, pupation %, adult emergence %and adult longevity for both male and female. AST and ALT were significantly decreased activities of *S. littoralis* in all treated rats, while, acid and alkaline phosphatases activities significantly in-creased in case of *B. thuringiensis* and Hexaflumuron. However the treatment with Chlorpyrifos and Flufenoxuron decreased acid phosphatases as compared to non-treated larvae. The total content of lipids was increased at treatment with Chlorpyrifos and both IGRs and was decreased at treatment with *B. thuringiensis*, only. The total content of proteins was de-creased at all treatment. All treatments decreased cholinesterase activity significantly. On contrast the treatments caused increasing in proteases activity except in *B. thuringiensis* it caused non significant decrease.

On the other hand there is several larval malformation recorded when the 4th larval instars treated with Hexaflumuron and Flufenoxuron.

The 2nd part of the present study revealed that administration of *B. thuringiensis (Kurstaki)* for 12 weeks to albino rats at dosages of 10000 mg/kg/day produced no toxic effects.

Administration of 105 mg/kg b.wt. Flufenoxuron and Chlorpyrifos 9.55 mg/kg b.wt. which is equivalent to 0.1 of LD_{50} to albino rats for 12 weeks revealed that on a significant decrease on body weight, increased liver weight but the kidney weight decreased, slight and decrease in testicular weight as compared to the level of the control group.

The mean values of serum transaminase activities and ALP. showed slightly increase in the treatment of Chlorpyrifos and Flufenoxuron in comparing to control group in the 4 weeks and 8 weeks but there were highly significant increase in the 12 weeks in comprising to control group. Serum triglycerides showed significant increase throughout the experiment and significant hypercholesterolemia was noticed in treated rats. Slight reduction in total protein after 4th, 8th and more decrease in the 12th weeks in comprising to control group. Serum urea, creatinine and uric acid were elevated throughout the experiment. The significant uremia was noticed during the 8th week and 12th week of treatment of the both insecticides as compared to the normal level of

control group. Serum acetyl cholinesterase (AChE) activity Flufenoxuron administration caused slightly decreased in the all time of treatment, but there were significant decrease in this enzyme activity in the treatment of Chlorpyrifos in the 4th week and became highly decreased in the rest of time of treatment in comparison to control.

Hematological parameters the results revealed that prolonged administration of Flufenoxuron had a significant decrease in all hematological parameters in comparison to the control group. While chlorpyrifos showed no effect on the hemoglobin level.

Reproductive parameters showed significant decrease of the Chlorpyrifos and Flufenoxuron treated rats in comparison to that of control group. However, reproductive parameters showed in Chlorpyrifos highly significant decrease.

Microscopic exanimation revealed mild to moderate changes of testis, kidneys and liver of the Flufenoxuron treated rats. While administration of Chlorpyrifos led to severe degree.

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