SUMMARY

Malathion is one of the organophosphorus compounds widely used as an insecticide in Egypt. The present study aimed to identify the possible effects of malathion on the visual cortex of the albino rat in the young, adult and senile ages. 165 albino rats of both sexes were utilized in this study, and were divided into 4 groups and each group was divided into subgroups..

Group I : 45 albino rats (one day old).

I-1 : 5 rats 8 were satrificed immediately.

I-2 : 10 rats were used as a control and received distilled water for 15 day.

I-3 : 30 rats received malathion for 15 days.

Group II : 40 albino rats (21 days old).

II-1 : 10 rats were used as a control and received distilled water for 15 days.

II-2 : 30 rats received malathion for 15 days.

Group III : 40 albino rats (3 months old)

III-1 : 10 rats were used as a control and received distilled water for 15 days.

III-2 : 30 rats received malathion for 15 days.

Group IV : 40 albino rats (16-18 months old)

IV-1 : 10 rats were used as a control and received distilled water for 15 days.

IV-2 : 30 rats received malathion for 15 days.

The treated rats received a daily oral dose of 240 mg/kgm body weight for 15 days.

The treated animals and the control ones were sacrificed. The brain was dissected out and the cerebral hemispheres were taken Paraffin sections were prepared and staind with haematoxylin and eosin to detect the effect of malathion on the cell intigrity. Toluidin blue for detection of the Nissl granules, Heidenhain's modification of Kultschitsky's method for myelin sheaths, and Glees's silver stain for detection the neuerofilaments. As well fresh sections were taken and prepared for non specific esterase, cholinesterase and adenosine triphosphatase enzymes.

Quantitative study was made to detect the effect of malathion on the diameters of the granular cells and the surface areas of the pyramidal, lozenge and flattened cells and also on the thickness of the cortical layers.

This study showed that malathion produced shrinkage of cells in all the treated groups, with a decrease in the thickness of the layers of the young groups only while the layers of the adult and senile groups were not affected by malathion treatment.

Degeneration of the Nissl granules, neurofilaments and myelin sheaths was also observed in all treated groups. As well, the reaction for non specific esterase and cholinesterase decreased in all the treated groups, while adenosine triphosphatase reaction increased in the treated groups.