

*Research Article***Profenofos Effects on Testicular Weight of Rats**

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Abstract

the present study was aimed to evaluate the profenofos effects on testicular weight of male rats. The study was conducted on male rats divided into 2 groups; control and treated group. The animals were administered $1/2 \cdot LD_{50}$ of profenofos via oral route for 1 month. At the end of the study the testes were exposed and dissected out. Weight (in gm) of each testis was measured using a sensitive electric balance. There was significant decrease in testicular weight of group 2 which received profenofos was than control group ($p < 0.001$).

Key word: profenofos, testis, rats.

Introduction

The increase demand on pesticides use in agriculture has paralleled the increase in quality and quantity of food products over the years (Goel and Aggarwal, 2007). But it has also significantly increased the concentration of pesticides in food, with associated side effects on human health (Richter, 2002).

Profenofos is a broad spectrum organophosphate pesticide. It is one of the most used pesticides for protecting agricultural crops in Egypt (Amer et al, 2000 and Greish et al, 2001).

The reproductive toxicity of profenofos was studied by El Nahas et al, (1989). They reported the chromosomal aberrations in spermatogonial cells and sperm abnormalities in mice after profenofos treatment, and showed damaging effect on sperm morphology via significant increase in sperm abnormalities and significant decrease in sperm count and motility.

The present work aimed to study effects of profenofos on testes of male rats.

Animals and methods**Animals:**

The present study was conducted on 10 male rats. Animals were housed in wire

cages at room temperature and 12 hours light-dark cycle. The rats had free access to food and tap water all through the study period. The age of rats in control group was 6 months. In the other groups, the age of the animals was 2 months at the start of the study. They had received treatment for 1 month, so they completed 6 month by the end of the study.

Experimental design:

Rats were classified into 2 groups.

Group 1 (control group): the rats did not receive any treatment.

Group 2: the animals were administered $1/2 \cdot LD_{50}$ of profenofos daily via oral route for 1 month.

Pesticides:

Profenofos insecticide was obtained in a solution form. Its oral LD_{50} for male rats is 358 mg/kg. It was diluted in distilled water so that each animal in group 2 received $1/2 \cdot LD_{50}$.

Animal's preparation:

Rats were anaesthetized with di-ethyl ether and put on a table securing their limbs. The abdominal wall was longitudinally incised with scissors through the midline and a V-shaped cut through the rib cage extending from the costal angle towards Rt and Lt

axillae was made. The heart was then exposed. Normal saline was injected inside the heart to wash out the blood from blood vessels.

The abdominal incision was then extended downwards till reaching the scrotum and the testes were exposed and dissected out. Weight (in gm) of each testis was measured using a sensitive electric balance.

The results of each group were expressed as mean \pm SD. The result in different results was statistically analyzed using SPSS software (SPSS 13.0 for Windows, Copyright ©SPSS Inc., USA, 1989-2004). The difference was considered significant if p value < 0.05 .

Results and discussion

The testicular weight of group 2 which received profenofos (1.1 ± 0.14) was significantly lower than control group (1.0 ± 0.11). This finding agrees with El-Kashoury, 2009 and Hendawy et al, 2012. Similar results were recorded by Joshi et al, (2007), who mentioned that chlorpyrifos (organophosphorus) significantly decreased the weight of testes. The decrease in testicular weight in may be due to reduced tubule size, spermatogenic cells arrest and degeneration of Leydig cells (Kaur and mangat, 1980 and Sujatha et al, 2001).

Recommendation

We recommend further studies on the effect of profenofose on other body organs as liver, spleen and kidney.

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