World Academy of Science, Engineering and Technology
International Journal of Bioengineering and Life Sciences
Vol:8, No:12, 2014

Assessment of Reproductive Toxicity of Diazinon Pesticide in Male Wistar Rats

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Abstract : Organophosphates are among the most widely used synthetic insect pesticides. The widespread use of organophosphates has stimulated research into the possible existence of effects related with their reproductive toxic activity. The present study aimed to assess the effects of diazinon (DIZ) on male reproductive system. DIZ at the dose levels of 1.5, 3.0 and 9.0 mg/kg b. wt./day was administered orally to male rats of Wistar strain for 30 days to evaluate the toxic alterations in testicular histology, biochemistry, sperm dynamics, and testosterone levels. The body weight of animals did not show any significant changes, however, a significant reduction was observed in testes weight. DIZ also brought about marked reduction in epididymal and testicular sperm counts in exposed males and a decrease in serum testosterone concentration. Histopathological examination of testes showed mild to severe degenerative changes in seminiferous tubules at various dose levels. Fertility test showed 79% negative results. All these toxic effects are moderate at low doses and become severe at higher dose levels. From the results of the present study it is concluded that DIZ induces severe testicular damage and results in reduction in sperm count and thus affect fertility. Small changes in sperm counts are known to have adverse affects on human fertility. Therefore, application of such insecticide should be limited to a designed programme.

Keywords : reproductive toxicity, fertility, diazinon, sperm count
Conference Title : ICABB 2014 : International Conference on Applied Biology and Biotechnology
Conference Location : Melbourne, Australia
Conference Dates : December 11-12, 2014

Open Science Index, Bioengineering and Life Sciences Vol:8, No:12, 2014 publications.waset.org/abstracts/15763/pdf