

Original Paper

## Diazinon alters sex hormones, Interferon-gamma, Interleukin-4 and 10 in male Wistar rats

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### Abstract

**Background and Objective:** Agricultural toxins including organochlorine and organophosphorus families cause damages in the various tissues in humans. Diazinon is a non-systemic organophosphate insecticide. This study was carried out to determine the effect of Diazinon on sex hormone, interferon gamma, interleukin-4 and 10 in male rats.

**Methods:** In this experimental study 24 adult male Wistar rats were randomly allocated into four groups. Three experimental groups were received Diazinon 5 days per week for one month at 0.3, 3 and 30 mg/kg/bw intraperitoneally, while controls received nothing. Seven days after the last injection, blood samples were obtained and the serum testosterone, FSH, LH, interferon gamma, interleukin-4 and interleukin-10 were measured.

**Results:** Serum level of Interleukin-10 significantly increased in experimental group (30 mg/kg/bw of Diazinon) compared to controls ( $P<0.05$ ). Serum level of Interleukin-10 significantly decreased in 0.3 mg/kg/bw and 3mg/kg/bw of Diazinon groups compared to controls ( $P<0.05$ ). Interleukin-4 level was only significant in the group receiving 30 mg/kg/bw of Diazinon ( $P<0.05$ ). Reduction in interferon-gamma level was not significant between control and experimental groups. FSH significantly reduced in the three experimental groups in comparison with controls ( $P<0.05$ ). Testosterone level was significantly increased in experimental groups compared to control ( $P<0.05$ ).

**Conclusion:** Diazinon increases interleukin-10 and testosterone and reduces FSH hormone in the rat.

**Keywords:** Diazinon, Interleukin-10, FSH, LH, Testosterone, Rat

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