

***Phoenix dactylifera*, *Cyperus esculentus*, and *Cocos nucifera* Pooled Extracts Ameliorate Pesticides-induced Hormonal Toxicity and Maintains Testicular Histology in Rats**

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Abstract

Male infertility is increasingly worrisome and has been linked to increase rate of hormonal toxicity and imbalance. Sufferers now resort to using medicinal plants due to its availability and cost effectiveness. This study was to assess ameliorating effects of Phoenix dactylifera (date), Cyperus esculentus (tigernut) and Cocos nucifera (coconut) mixture on pesticides-induced hormonal toxicity in male Wistar rats. Aqueous extraction of crops - date (maceration apparatus), tiger nut (rotary evaporator) and coconut (spray drying process) were conducted after which, 5g of each extract were mixed in equal proportion. Hormonal toxicity was induced in rats using Ochratoxin A and endosulfan before oral treatment of the mix at graded doses (250 to 1000 mg/kg/day) for 28 days. Aseptic blood sample was obtained before and after treatment for hormonal assay. At termination, animals were euthanized via decapitation; organs were excised, processed histologically, stained with H&E, and testes examined microscopically. Hormonal toxicity in rats was successfully induced, body weight of highly treated rats reduced ($P \leq 0.02$) while testicular weight increased insignificantly ($P \geq 0.05$). Mixed extract ameliorated the effect of pesticides on testosterone levels in group: B ($1.8 \pm 0.5\text{ng/dL}$), C ($2.4 \pm 0.4\text{ng/dL}$), D ($3.8 \pm 0.6 \text{ ng/dL}$) and E ($4.1 \pm 0.3 \text{ ng/dL}$) including FSH and LH values ($P \leq 0.05$). Stained sections of testis were in keeping with normal histology after investigations. High doses of extract mix successfully reversed pesticides-induced hormonal toxicity in rats without harming the testes.

Keywords: Cocos nucifera, Coconut, Cyperus esculentus, Date, Hormonal imbalance, Pesticide, Phoenix dactylifera, and Tiger nut

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