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Effects of nettle extract to improve ovulation in PCOS and metabolic syndrome in the Wistar rats induced by estradiol valerat

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Background: Polycystic Ovary Syndrome (PCOS) is the most common endocrine disorder among women of reproductive age which affects 5 to 6 percent of women, PCOS disorders characterized by an ovulation, hyperandrogenism, insulin resistance and the risk of metabolic syndrome is characterized increases. According to anti-inflammatory, antioxidant and hypoglycemic effects of nettle extracts, this therapeutic effect on Polycystic Ovary Syndrome was studied.

Materials & Methods: Wistar adult rats were selected and divided into control and poly cystic induced by estradiol valerate. The group PCOS 2 mg/kg subcutaneously injected estradiol valerate after 60 days and confirmed polycystic, the group injected intraperitoneally on day 21 of the nettle extract doses (50, 150, 250, 350, 450 mg/kg). After 21 days, the mice were killed; blood samples and ovaries were collected to evaluate the histologic and serologic parameters. Data was analyzed using ANOVA one-way and $p < 0.05$ was considered statistically significant.

Results: Genesis numerous cysts increasing the thickness of theca layer and reduce the corpus luteum was observed in PCOS samples, while the number and size of cysts in the ovaries of the treated group and the granulosa layer thickness decreases and increased the number of luteinizing and follicle antral. Reviews of serologic parameters are also a significant in improvement in serum levels of glucose, cholesterol and triglycerides and insulin were observed and modify sex hormones. Nettle extract was also another treatment results.

Conclusions: The results show that the nettle extract improves morphological and histological poly cystic ovaries and improve the complications of metabolic syndrome and sex hormones is modified.

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Chemical composition and insecticidal activity of *Citrus aurantifolia* essential oil

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The composition of terpenoids in essential oils determines the activity of the oil. The continuous usage of synthetic insecticides causes serious problems including development of resistance by insect, pollution of environment and side effects on human. Therefore, plant essential oils have proved to be alternative to the synthetic insecticides because they can easily degrade in the environment and harmless to non targeted organism. Also, appropriate formulations that will increase the length of the activity of the volatile oils are important and must be put into consideration. The chemical composition of the essential oil obtained by steam distillation from the aerial parts of *Citrus aurantifolia* was analyzed by Gas Chromatography (GC). Toxicity and repellency of the oil on cowpea bruchid *Callosobruchis maculata* (F) (Coleoptera, *Bruchidae*) was carried out using standard methods. Formulations of the oil were carried out using kaolin and bentonite as carriers. Thirty seven components of the essential oil were identified with limonene (82.55%), β -mycene (6.56%), cymene (1.34%) and thymol (1.09%) as major components. Other volatile compounds that are not terpenoids were also found like furan, non-anal and some acetate. The toxicity and repellency of the oil were concentration dependent. Acute toxicity ranged between 13.33%-91.66% at 5 μ l to 17.5 μ l per 5 g seed, respectively and the percentage repellency ranged between 57.30%-87.30% from 2.5 to 12.5 μ l/30 cm². The activity of the formulations reduced with time when using bentonite as carrier but kaolin was found to have toxic effect on insects without oil. Limonene was found to be the main terpenoids. The essential oil repelled the insects and there was acute toxicity with LC₅₀ 10.68 μ l/5 g seed. The formulations of bentonite were poor. Kaolin was found to be active even without oil but there was increase in mortality with the treated kaolin

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