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EFFECT OF *ERUCA SATIVA* EXTRACTS MIXTURE ON TESTOSTERONE HORMONE OF ALBINO MICE

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ABSTRACT

A mixture of date palm pollen (dried or ethanol- extracted) and vitamin D3 IN 4000 IU and(dried or ethanol- extracted) *Eruca sativa* were used to treat 20 albino mice to determine the activity of the testosterone hormones. The mice divided into five groups each group contains 5 of mice male groups(treated with ethanol extract of the mixture at 400, treated with ethanol extract of the mix at 500, treated with dried extract of the mixture at 400, and treated with dried extract of the mixture at 500) mg \kg respectively, significant differences in the results in the highest effect of 500mg/kg dried powder of the mixture of date palm pollen and vitamin d3 and *Eruca sativa* on group 4 at day week 6 compared to the control in group 5. The lower effect, according to the significant differences in group 1 at week three yet it's still promising due to a higher level than control which is the control. Other were with treatment with gradual change for the extreme results in week six the testosterone level was measured gradually.

Keywords: date D palm P, vitamin D3, the male hormone

INTRODUCTION

Many plants extracts have been effected and cure the factot results in male infertility (R´ıos 1997; Mahran and Attia ,1976). Around the world, science aimed to search for therapeutic manuals in phytological manner. An affectivity role of herbs in the treatment of sterility was shown so many times , infertility can be known as significant disorder with medical and defined as one (Shefi *et al.*, 2006),

A high presents of male infertility shown in many countries (Raman *et al.,* 2005; Kolettis, 2003). Incorrect growth of testis, relates to reproductive system, increase scrotal degree, tissues , endocrine wrong effects and factors with nutrition had astart point of male infertility (Marah *et al*., 2005; Bin-Seng Low and Kit-Lam, 2013). Many limitations was noted. Whether the level of testosterone is assessing the hormone levels which run parallel to importance to measure sensitivity testosterone places of bind in. Individuals tissue with familiar levels of testosterone changes in behavior because of sensitive amount of density which were different for testosterone receptors. Furthermore mice shows different sensitivity to testosterone (Bartke, 1974). While mice exhibit an testosterone induction makes fast changes in testosterone level (Bartke and Dalterio, 1975 ; Coquelin *et al*., 1982).

MATERIALS AND METHODS

Pollen dried Carefully then stored in darkness and subsequently powdered 200 gm of the dry powder was rapidly extracted in two days of time with one litter of mixture of ethanol 70% forty eight degree used for extraction valid solvent was continuously removed and finally was dried, a resulting sample was powdered and stored , both of date palm pollen and leaves of *Eruca sativa* were extracted in the same methods. For the dried powder the pollen and dried leave of *Eruca sativa* and vitamin D_3 dry form all were mixed and smashed to powder the feed for the mice male as mixture with the nutrition bars so it could be consumed orally Preparation of DPP suspension and ethanol - extract were prepared by extracting in sohxlet apparatuses by placing 80 gm in the thimble the dried matter of dried smashed leaves of *Eruca sative* or the dried date palm. A water suspension is prepared by mixing distilled water with the minced powder of the extracts, according to our required concentration with stirring on amoderate ratio of speed for 10 minutes with a magnetic stirrer until is dissolved (Hassan *et al*., 2012).

Mice treatment and measurement's remedy

Twenty adult male albino which is healthy mice were 178 to 200 grams in weight were used in this study. They kept in animal house with controlled condition (24c) temperature and adjusted humidity, 12 h of light period for two weeks, standard feeding and water intake were accomplished.

The experimental mice were divided into:

Group 1 contain 4mice treated with water extract of the

mixture at 400 mg\kg

Group 2: contain 4 mice treated with water extract of the mixture at 500 mg \kg

Group 3: contain 4 mice treated with dried extract of the mixture at 400 mg \kg

Group 4: contain 4 mice treated with dried extract of the mixture at 500 mg \kg

Groups 5 distilled water were given orally this group was a control

The groups number 3 and 4 of were given 1 ml of of date pollen mixture extracted and dissolved in distilled water in 400, 500 mg/kg body weight as a concentration and orally administered basically. First group and second group were treated with liquid of water extract of the mixture. All treatments were maintained daily for 6 weeks.

Collection of blood for hormones detection

As a final stage, the mice were weighed in separate manner, anesthetized by diethyl ether followed by sacrificing. Blood sampled from heart, serum was resulted by centrifuge last for twenty minutes then serum was kept in a cold degree 4C, testosterone concentrations measured by using micro plate enzyme immunoassay as all know as (ELISA) measured in ng/ml, nmol/L.

Statistical analysis

The experiment data were analyzed according to factorial experiments of complete random design (CRD). The least significance differences at P≤0.05

RESULTS AND DISCUSSION

higher level than control which is the control. Other were with treatment with gradual change for the extreme results in week 6. This may be due to the preservation of the raw materials and all vitamins and nutrient in the powder increase the effectively effect of date palm is related to presence many plant secondary metabolites such steroids and flavonoids also saponins with lipid could increase sexual hormones and have a inducing effects for the sperm quality (Hassan *et al*., 2012; Abedi *et al*., 2012). beside its induces the testosterone levels by lifting the level of LH. Abedi *et al* stated higher effect of estradiol and testosterone was treatment with 140 mg/Kg of the palm which led subsequently to maximizethe effect for sexuality affectivity of male which at 120 mg/kg (Abedi *et al*., 2012) and an increased levels of male hormone with a positive role to increased spermatogenesis and major rise in sperm formation done by barly water (Bawazir, 2010).

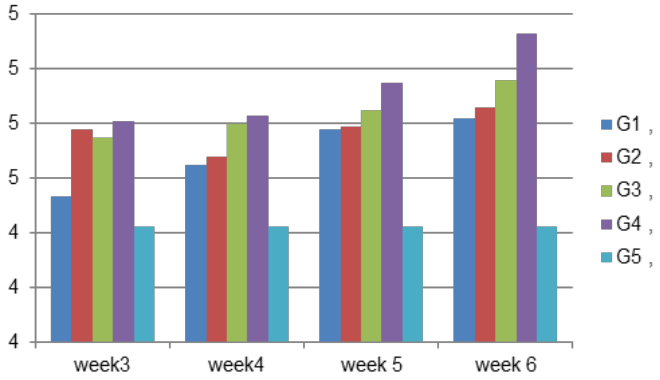

Figure : testosterone level during treatment with mixture of palm date and vitamin D3 and *Eruca sativa* leafs treatment were extacts or raw powder. LSD of treatments in weeks at P ≤ 0.05 is 0.097, LSD of groups at P ≤ 0.05 is 0.109.

The result s of current study include significant differences in the results the highest effect of 500mg/kg of dried powder of the mixture of date palm pollen and vitamin d3 and *Eruca sativa* on group 4 at day week six comparing to the control in group 5.

The lower effect, according to the significant differences in group 1 at week 3 yet it's still promising due to HPLC detection of vitamins soluble in water of date palm.

Table: Testosterone concentrations (nmol/l) during treatment of albino mice male.

Groups / weeks	Group 1 400 MG/KG EXTRACT	Group 2 500 MG/KG EXTRACTED	Group 3 400 MG /KG DRY POWDER	GROUP 4 500 MG /KG DRY POWDER	Group 5 CONTROL UN-TREATED mean	means
WEEK 3	4.53	4.78	4.75	4.85	4.42	4.46
WEEK4	4.65	4.68	4.80	4.83	4.42	4.58
WEEK5	4.78	4.79	4.85	4.95	4.42	4.70
Week 6	4.82	4.86	4.96	5.13	4.43	4.83
Means	4.69	4.77	4.84	4.94	4.42	
LSD of groups at P ≤ 0.05 is 0.109 LSD of groups at P ≤ 0.05 is 0.097						

Detection Limit	CONC. MG/ML	Vitamins in date palm
0.08	20.03	B1
1.08	20.8	B2
2.0	38.0	B3
0.1	29.09	B5
0.5	39.09	B6
0.1	22.09	B-12

While the dissolve vitamins in water were examined as the highest for B6 and b3 followed by B5 and B -12 then b2 and b3 respectively and the recent plant chemical studies had ensure the presence of, many compounds such as α-amirin, triterpenoidal in date palm (Hassan *et al.,* 2012; Mahran and Attia, 1976; Bennet and Heftmann, 1966) extracts of date palm also had cholesterol, carotenoids, oestrones which is gonad stimulating components which improve male fertility and rise gonadotropin activity (Bahmanpour *et al*., 2006; Hassan *et al.,* 2012)

CONCLUSIONS

The mixture of Eruca sativa with DDP and vitamin D3make a very promising treatment to increase testosterone level with which is a healthy to the body with no further side effect.

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