

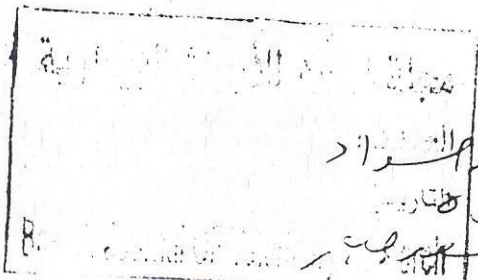
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تحية طيبة:

يسر هيئة تحرير مجلة البصرة للأبحاث البيطرية اعلامكم عن قبول بحثكم
الموسوم.....*Treated..effect..of..Palin..P..A...grains.....*
Extract on the sterility induced by Argemone in
بعد الأطلاع على نتيجة التقييم العلمي.... وسوف ينشر في العدد (2) من
المجلد رقم (6) لسنة (١٩٦٣).

مع التقدير.....

الدكتور

علاء عبد الخالق حسين سواد

سكرتير هيئة التحرير

TREATED EFFECT OF PALM POLLEN GRAINS EXTRACT (*Phoenix dactylifera L.*) ON THE STERILITY INDUCED BY ACRYLAMIDE IN MALE RABBITS

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Key words: Sterility, Acrylamides, Spermatogonia, PoUen, Epididymis.

ABSTRACT

The study was performed to know the effect of ethyle alcohol date palm pollen grains extract to treated the sterility that induced by acrylamide injected to the male rabbits. Twenty male rabbits were divided into two equal groups, the first received 35 mg / kg BW of acrylamide intramuscularly, the second group treated by the same dose of acrylamide plus 200 mg / Kg BW of ethyl alcohol pollen grain extract orally for four weeks

Histologically; the infertility effect of acrylamide led into a.. significant decreased in the number of spermatogonia, Spermatocytes, Spermatides and Spermatozoa, in addition to the weight of the testes, total sperm count, While the second group showed a significant increased in the above parameters and this evidence that the extract was capable of the diminishing of the acrylamide infertility effect

INTRODUCTION

The date palm (*Phoenix dactylifera*) for many centuries has been used as a tonic maimed foods (Rajiv, 2002). The Arab believed that drinking date palm pollen juice improves the chance of bearing children and many scientists investigates that the date pollen grains contains estrogen like hormones ,no fewer than 800 uses are recorded for the date palm (Ali ^.a/.,1999;El-Mougy et.al.,1991)

The dates has been used especially at morning in the middle east as a reversed the actions of the toxic materials in man (Al-Qarawi et.al.,2001). Many investigators shows that the extraction of date palm prevent the action of carbon tetrachloride in which induced heptotoxicity in rat (Al-Qarawi et. al.,2004;2001).

Acrylamide is a highly reactive and water- soluble polymer which is commonly used in both industries and laboratories (Nordin, et.al.,2003). The formation of acrylamide is particularly association with high temperature cooking process for certain carbohydrates-rich foods, especially when asparagines reacts with sugars (Mottram et.al.,2002). Reproductive toxicity of acrylamide has extensively tested in mice including abnormal morphology of sperms (Sakamoto et. al.,1988). Male rats administered with acrylamide exhibited significant reductions of mating, fertility and pregnancy indices as well as reduction of transport of sperms in uterus (Tyle, et. al.,2000)

The present study was performed to evaluate the protective role of date palm pollen grains extract on the

sterility induced by acrylamide in male rabbits.

MATERIALS AND METHODS

Plant Extraction;

The plant materials (Spadex) were obtained from the local Basrah market, the spadex were separately and minced and extracted with 1.5 liter of 75% ethanol for 8 hours, and then was filtered, the crude extract was obtained after removed the solvent by vacuum distillation (Harborne, 1984)

ANIMALS;

Twenty male rabbits aged 126-140 days and weighing 950-1000g were housed at room temperature under natural photoperiod and maintained on standard pellet diet and tap water (Alleva, 1968).

The animals were divided randomly into two equal groups, the first group (Control) injected by 35 mg/kg Bw of acrylamide intramuscularly, while the second group (treated) injected by the same dose of

RESULTS

The control group (acrylamide treated) animals exhibited a significant decrease ($p < 0.05$) on the testicular weight after the injection with 35 mg/kg Bw of acrylamide, the comparison of the testicles weight in control group (acrylamide treated) with the treated group (acrylamide and ethyl alcohol pollen palm grains extract) they indicate a significant increase in testicle weight

Most striking feature of the reproductive toxicity of acrylamide was reduced sperm reserves in cauda epididymis isolated from the control group rabbits in comparison with the

acrylamide with 200 mg/kg Bw of ethyl alcohol pollen grains extract orally for thirty days.

Rabbits were sacrificed by decapitation, and testes were removed and weighed, after isolation of epididymis from each testes of both animal groups, the cauda epididymis were minced and homogenized for 1 min in 5 ml of physiological saline solution (Oishi, 2002), the homogenate was filtered through a nylon mesh and the 0.1 ml of filtrate was diluted with 2 ml of saline solution containing 4% Trypan blue, 20 μ l aliquots were placed on the hemocytometer for counting the number of the sperms.

The excised testes were fixed in Bouin's solution and processed using standard laboratory procedures for histology, the tissue was embedded in paraffin blocks, sectioned with 5 micrometers thickness and stained with hematoxyline and eosin, stained sections were mounted with DPX and examined using light microscope.

treated group which led to significant increase at the total sperm counts.

The rabbits in the control group which treated by acrylamide shows some evidence of morphological changes in the testicular histology when compared with the treated group. The control group showed histopathological changes in the seminiferous tubules (Fig;1). There were thickening and multiple layering of tubular endothelium, degeneration of germ cells, and formation of many multinucleated giant cells in atrophied seminiferous tubules (Fig;2) in addition to the decreasing of spermatogonia, spermatocytes, spermatides and spermatozoa. While the treated group shows that the testes returns to their

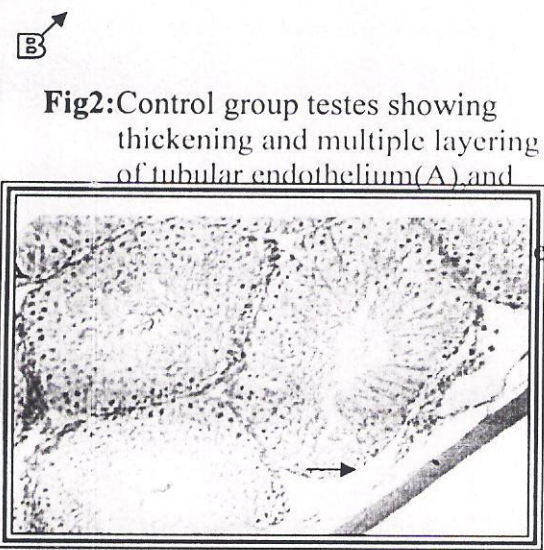
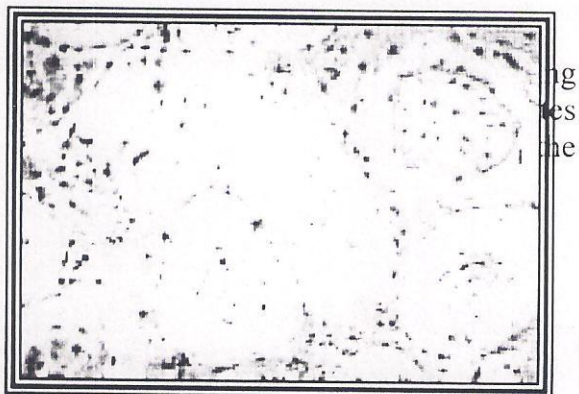


Fig2:Control group testes showing thickening and multiple layering of tubular endothelium(A) and

Fig3:Testes isolated from the treated group shows normal tissue structures (A) Spermatozoa

Table 1: Testes weight (g)

Groups	Right testes	Left testes
Control group (Acrylamide)	1.73	1.33
Treated group (Acrylamide + extract)	2.79	2.03

LSD = 21.632

Table 2: Total sperm count

Groups	Total count (10) ⁶
Control group (Acrylamide)	57 ± 2.4
Treated group (Acrylamide + extract)	399 ± 0.30

p < 0.0

DISCUSSION

Acrylamide shows increased at the weigh of the testes due to the damages of the germ cells of the testes and decreased the spermatogenic cells, such notes were also reported by (McCollister,1964;Al-Dijaylli,2001;Al-Hially,2002). And the ethyle alcohol pollen grain extract leads into a significant increased at the testes weigh in comparison with the treated group and that explain the effect of the extract to reduced the toxic activity of the acrylamide and decrease the level of (LH) hormones secretion (Salomi *et.al.*,1991; Nari *et.al.*, 1991).

The significant decreased at the total sperm count at control group due to the effect at the spermatogenesis and the germ cells at different development stages and inhibited the secretion of the FSH (follicle stimulating hormones) and LH (Leutinizing hormones) which have a toxic effects at the sperms and reduced the total sperm counts (Wyobek,1983).

The interaction between the acrylamide and the ethyl alcohol pollen grain extract group (treated) increased the total sperm count in comparison with control group and that explain the ability of the palm pollen grains to reduced the toxic effect of the chemical materials that cause sterility, many investigators studies the effect of palm pollen grains on the spermatogenic activity and treated some cases of atocia (Sawad and Faleh,2006 ;Hossaini,1977;Darby,1959).

In the present study we evaluated reproductive toxicity of acrylamide which showed several histopathological

lesions in the seminiferous tubules. There were thickening and multiple layering at the tubular endothelium , degeneration of the germ cells and atrophied seminiferous tubules.(Kumi-Daka,1999) .While the treated group shows a significant increased at the spermatogenesis due to the pollen grain effects to return the testicular tissue into their normal state(Zeitous and Neff,1995).

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تأثير مستخلص حبوب لقاح طلع النخيل في علاج حالات العقم المستحث باستخدام مادة الاكريلامايد في ذكور الأرانب

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الخلاصة

صممت التجربة للتعرف على تأثير مستخلص حبوب لقاح طلع النخيل في علاج العقم المستحث باستخدام مادة الاكريلامايد في ذكور الأرانب، قسمت عشرون من ذكور الأرانب عشوائيا إلى مجموعتين متساويتين، حقنت المجموعة الأولى بمادة الاكريلامايد بجرعة مقدارها ٥ ملغم/كغم من وزن الجسم داخل العضل، بينما حقنت المجموعة الثانية بنفس الجرعة من مادة الاكريلامايد مع إعطاء مستخلص حبوب اللقاح بجرعة ٢٠٠ ملغم/كغم من وزن الجسم عن طريق الفم ولمدة أربعة أسابيع.
بين الفحص الإنسيجي أن استخدام مادة الاكريلامايد أدى إلى حدوث العقم من خلال الانخفاض المعنوي في أعداد سليفات النطف، الخلايا النطفية و ارومات النطف والنطف، بالإضافة إلى الانخفاض المعنوي في أوزان الخصى، والعدد الكلي للنطف، بينما أظهرت المجموعة الثانية زيادة معنوية في جميع التغيرات التي طرأت على المجموعة المعاملة بمادة الاكريلامايد، مما يدل على فعالية المستخلص الكحولي لحبوب لقاح طلع النخيل للتقليل من تأثير مادة الاكريلامايد في إحداث العقم.