

(2009/1/26 2008/11/30 )

650)

. / / / (1300  
 , )  
 . (  
 , ) (0,05> )  
 , (

## **Effect of Watery Extract of Fenugreek on some Semen Quality in Rabbits.**

**Saad K. Abd**

*Department of  
Pharmacology*

*College of Pharmacy*

*Mosul University  
Iraq*

**Abdul R. Hamowieh**

*Department of  
Pharmacology*

*College of Veterinary  
Medicine*

*AL-Baath University  
Syria*

**Assad Al-Abd**

*Department of  
Physiology*

*College of Veterinary  
Medicine*

*AL-Baath University  
Syria*

### **ABSTRACT**

This study was conducted to investigate the effect of watery extract of fenugreek (*Trigonella foenum graecum*) on semen quality of healthy groups of local breed rabbits using two doses (650 mg and 1300mg/kg of B.W./daily/rabbit, orally for sixty days), on semen quality (sperm concentration, sperm progressive and individual motility, dead and malformation sperm percentages) at the end of the treatments.

Results of the present study demonstrated that the watery extract of fenugreek have a different significant effect ( $P < 0.05$ ) on some of semen quality (sperm concentration, dead and malformation sperm percentages) as it increased in the 1<sup>st</sup> dose at local healthy males rabbits after sixty days of the treatment, and the effects dissimilar depending on the dose used.

It could be concluded that watery extract of fenugreek by the doses used in this study had a significant effect on semen quality and the effect dissimilar by dose difference. It is preferred to take care when it used by those doses for long periods.

Raju *et al.*, 2004)

(Al-Ashban *et al.*, 2007 ; Kassem *et al.*, 2006;

(DerMarderosian and Beutler, 2002)

(Sur *et al.*, 2001)

.....

choline trimethyl amine

Diosgenin

precursors

12 6 2

(Taylor *et al.*, 2002)

steroid sapogenin

(Ying and Zhang, 1999)

(Norton, 1998)

/ / 100

(Kamal *et al.*, 1993)

.androgen dependent parameters

%30

(Kassem *et al.*, 2006)

(Al-Ashban *et al.*, 2007)

(Muralidhara *et al.*, 1999)

(Abdel-Barry and Al-Hakiem, 2000)

: -1

Family

Fenugreek (*Trigonella foenum graecum*)

.Fabaceae Leguminosa

300 100

4°

60°

1000

1

.(Natarajan and Dhananjayan, 2007) 4°

-2

-3

18

2,4-1,25

/

2

❖

/ / / 650

❖

1300

❖

/ / /

60×50×40

12

° 25-20

needle gavage

.(Jackson, 1966) 60-56

-4

.....

(Oyeyemi and Okediran, 2007)

. 9-1 %2,9 ( 37°)

:

: , -1-4

computer-

Sperm Vision  
assisted semen analysis (CASA)

. -

:

-2-4

(Bloom, 1973)

(400) . %5 -%1

:

-3-4

(Bloom, 1950)

(300) . %5 -%1

:

-5

One-Way ANOVA test

.Statistix- version 1.0/ Analytical software

.(0.05>)

:

-1

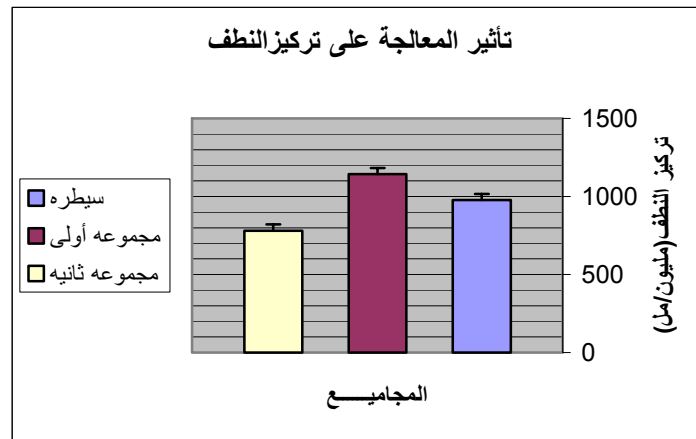
.(1) (1) (0.05>)

) :1

.( ±

/ 1300	/ 650		
60.85 ± 781	*87.12 ± 1143	145.02 ± 973	( / )

( p<0.05)



:1

( ± )

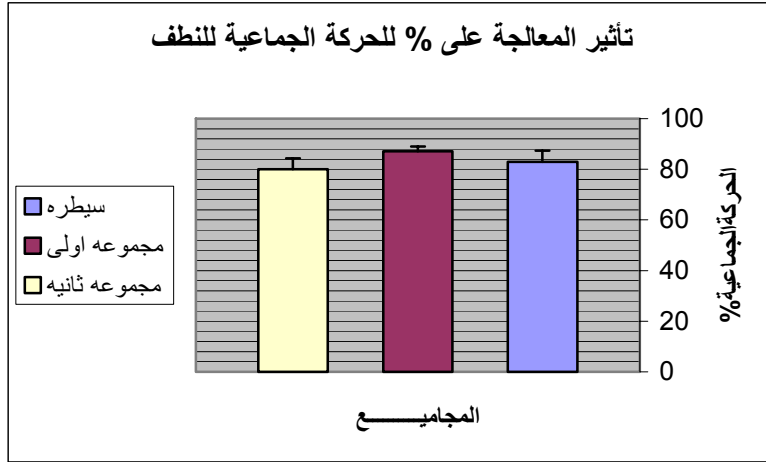
: -2

.(2) (2)

:2

.( ± )

/ 1300	/ 650		
4.33 ± 80.04	1.80 ± 87.15	4.45 ± 82.78	%



:2

. ( ± ) .

-3

:

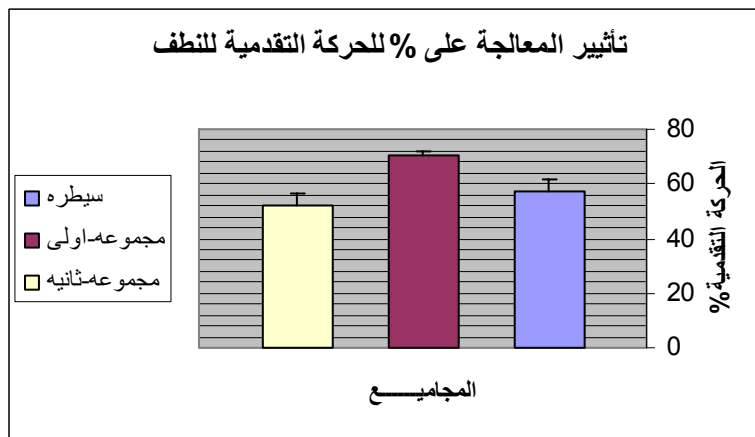
(3)

(3)

:3

. ( ± ) .

1300 /	650 /		
4.62 ± 52.22	1.81 ± 70.15	4.62 ± 57.22	%



: 3

( ± )

:

.(0.05> )

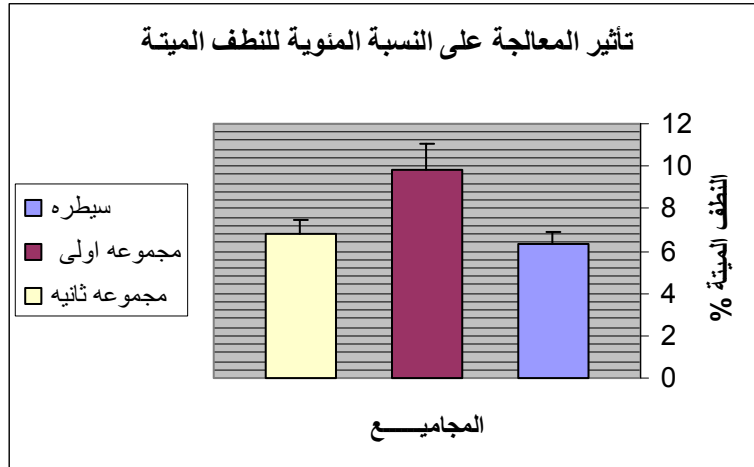
.(4) (4)

:4

.( + )

/ 1300	/ 650		
0.60± 6.80	*1.22± 9.83	0.55± 6.33	%

( p<0.05 )



:4

.( ± )

:

-5

.(5) (5) (0.05> )



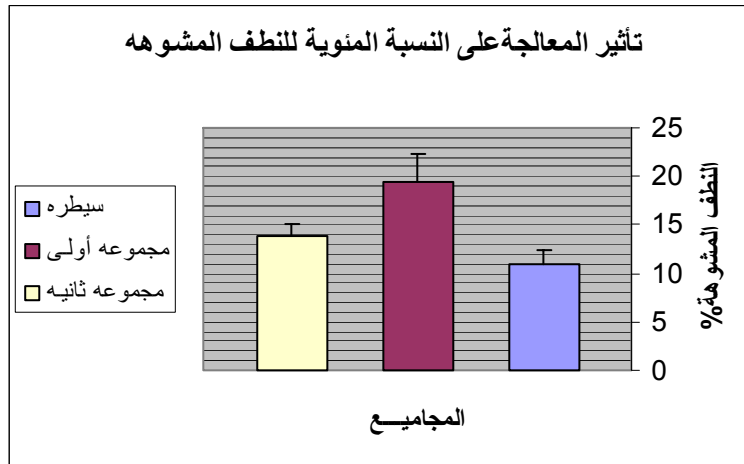
.....

:5

.( + )

/ 1300	/ 650		
1.32 ±13.83	*2.83± 19.50	1.34±11.00	%

(p<0.05)



:5

.( ± )

(0.05 > )

(0.05 > )

(Al-Ashban *et al.*, 2007)

germinal cells

spermatotoxic properties

(Al-Ashban *et al.*, 2007).(Kassem *et al.*, 2006) Leydig cells

interstitial tissue

(Kamal *et al.*, 1993)

precursor

.(Sharma *et al.*,1996)

(Merino

(Swafford and Berens, 2000)

*et al.*, 1997)

gonadotrophins

Abdel-Barry, JA., and Al-Hakim, MH., 2000. Acute Intra-peritoneal and Oral Toxicity of the Leaf Glycosidic Extract of *Trigonella foenum - Graecum* in Mice. J Ethnopharmacol. Apr; 70(1): pp.65-8.

Al-Ashban, R.M.; Abou-Shabaan, R.R., and Shah, A.H., 2007. Toxicity Studies on *trigonella foenum-graecum* l. Seeds Used as a Traditional Remedy for Diabetes. J. Herbs, Spices and Medicinal Plants, 73(4): pp.201-211.

Bloom, E., 1973. The Ultrastructure of some Characteristic Sperm Defects. Nord. Veterinary Medicine. 25: 283p.

- Bloom, E., 1950. Rapid Eosin-Nigrosin Staining Technique for Differentiating Living from Dead Spermatozoa. Nord .Vet. Med: 2. pp.58-61.
- DerMarderosian, A., and J.A., Beutler., 2002. The Review of Natural Products. The Most Complete Source of Natural Product Information. Published by Facts and Comparisons, St. Louis, Missouri. pp.253-254.
- Jackson, H., 1966. Antifertility Compounds in Male and Female. Spring Field, Thomas, Illinois.
- Kamal, L.R.; Yadav, R., and Sharma, J.D., 1993. Efficacy of the Steroidal Fraction of Fenugreek Seed Extract on Fertility of Male Albino Rats. Phytotherapy Research. Volume 7, (2). pp.134–138.
- Kassem, A.; A., Al-Aghbari; M., Al-Habori, and M., Al-Mamary, 2006. Evaluation of the Potential Antifertility Effect of Fenugreek Seeds in Male and Female Rabbits. Contraception: 73(3). pp.301-306.
- Merino, G.; G., Carranza-Lira; S., Martinez-Chequer, J.C., 1997. Hyperprolactinemia in Men with Asthenozoospermia, Oligozoospermia, or Azoospermia. Arch. Androl. 38, pp.201–206.
- Muralidhara, N.; K., Narasimhamurthy; S., Viswanatha, and B.S., Ramesh., 1999. Acute and Subchronic Toxicity Assessment of Debitterized Fenugreek Powder in the Mouse and Rat. Fd. Chem. Toxicol. 37(8): pp.831-838.
- Natarajan, B., and Dhananjayan, R., 2007. Pharmacological Effects of *Trigonella Foenum Graecum* Seeds on Various Isolated Perfused Smooth Muscle Preparations. Phcog Mag. Vol 3, (10): 77p.
- Norton, SA., 1998. Useful Plants of Dermatology. III. Corticosteroids, Strophanthus, and Dioscorea. J. Am. Acad. Dermatol. 38: pp.256-9.
- Oyeyemi, M.O., and Okedirin, B.S., 2007. Testicular Parameters and Sperm Morphology of Chinchilla Rabbit Fed with Different Planes of Soymeal. Int. J. Morphol., 25(1): pp.139-144.
- Raju, J.; J.M., Patlolla; M.V., Swamy, and C., Rao., 2004. Diosgenin, a Steroid Saponin of *trigonella foenum Graecum* (Fenugreek), Inhibits Azoxymethane-Induced Aberrant Crypt Foci Formation in f344 Rats and Induces a Peptosis in ht-29 Human Colon Cancer Cells. Cancer Epidemiol. Biomarkers Prev. 13(8): pp.1392-1398.
- Sharma, RD.; Sarkar, A.; Hazra, DK., 1996. Toxicological Evaluation of Fenugreek Seeds: a Long Term Feeding Experiment in Diabetic Patients. Phytother Res. 10: pp.519-520.
- Sur, P.; Das, M.; Gomes, A.; Vedasiromoni, JR.; Sahu, NP.; Banerjee, S.; Sharma, RM., and Ganguly, DK., 2001. *Trigonella foenum graecum* (fenugreek) seed extract as an antineoplastic agent. Phytother Res; 15(3): pp.257-259.
- Swafford, S., and Berens, B., 2000. Effect of fenugreek on breast milk production. ABM News and Views; 6(3): Annual Meeting Abstracts Sept. pp.11-13.

- Taylor, WG.; Zulyniak, HJ.; Richards, KW., 2002. Variation in diosgenin levels among 10 accessions of fenugreek seeds produced in western Canada. *J. Agric. Food Chem.* 9; 50(21): pp.5994-7.
- Ying, SY., and Zhang, Z., 1999. Ovarian hormones, overview. in: Knobil E(ed) *Encyclopedia of Reproduction*, San Diego, California, Academic Press; Vol. III: pp.578-582.