

***Trogoderma granarium* Everts**

(2002/10/1 2002/7/28 )

%10 5 2.5

37.66 39.66 36

43

14.33 13

%70.66 80

%5.50

## Biological Effect of Some Plant Extracts against *Trogoderma granarium* Everts

**Riyad A. Al-Iraqi                      Khalida A. Solyman**

*Department Of Biology  
College of Science  
Mosul University*

### ABSTRACT

This study aimed to test the effect of aqueous extract of five plants *Cuscuta chinensis* Lam, *Melia azedarach* L., *Nerium oleander* L., *Ricinus communis* L. and *Orobancha aegyptiaca* Pers, at three concentrations, 2.5, 5 and 10%, as wheat grains treatment against the Khapra beetle *Trogoderma granarium* Everts. Results indicated that *M. azedarach* and *N. oleander* extracts had high effect on the average progeny number produced which was 13, 14.33 respectively, versus 43 in control while it was 36, 39.66 and 37.66 for *C. chinensis*, *R. communis* and *O. aegyptiaca*, respectively. The type of plant extract and its concentration had significant effect to the generation period loss in weight and germination of infested grains. It was also found that 80, 76.66% of larvae exposed to treated grains with plant extract of *M. azedarach* and *N. oleander* failed to complete their development to adult insect *M. azedarach* extract showed repellent effect to larvae when used free choice test for feeding, 5.50% of which attracted to treated wheat grains.

On the other hand the adult insects did not show Significant effect in its choice for treated wheat grains with plant extract to egg lying.

( )

Jood et 1991 )  
 .(2002 Singh et al., 1999 Mustafa, 1999 Bloszyk et al., 1995 al.,1993

.....

*Nerium oleander*

*Orobanche aegyptiaca*

*Cuscuta chinesis*

*Melia azedarach*

*Ricinus communis*

( )

2.5

(Sahayaraj and Paulraj, 1998)

( )

%10 5

5

1

(5x1)

%12

( )

(♀+♂)

%5 ± 60

° 1± 33

10

5

(5x1)

5

35

5

100

%5

( %5 ± 60

° 1 ± 33

)

24

10

10-8

(♀+♂)

Author(s)	Year	Sample Size (n)	Significance Level (%)	Value
SAS	(SAS, 1982)	44	2.5	0.05
(Steel and Torrie, 1980)	(1)	43	10	28
(2002)		44	2.5	30
		43	10	39.66
		21	18	2.5
		10.33	9	48.33
Jood et al., 1996	Bloszyk et al., 1995	Anathagowri and Muthukrishnan, 1994)	(Anui and Sharma, 1999)	59.73
				0.44 0.53 0.45

.....

0.21 0.20

%33.66 43 55.33 59 63.77

%47

:1

	( )	( )		%	
67	0.41	53.30	44	2.5	
57	0.44	53.33	36	5	
53	0.50	56.30	28	10	
59 e	0.45 b	54.3 b	36 b		
43	0.15	55.2	18	2.5	
39	0.13	49.6	12	5	
19	0.34	40.8	9	10	
33.66 a	0.20 a	48.53 c	13 a		
51	0.28	54.6	21	2.5	
47	0.20	59.3	12	5	
31	0.16	65.3	10.33	10	
43 b	0.21 a	59.73 a	14.33 a		
67	0.61	57.86	40	2.5	
62	0.39	51.6	40	5	
60	0.32	49.5	39	10	
63.77 f	0.44 b	52.98 b	39.66 c		
65	0.47	53.5	30	2.5	
34.19	0.53	54	38	5	
48	0.60	55.2	44	10	
55.33 d	0.53 b	54.23 b	37.33 bc		
47 c	0.45 b	54.66	43 d		

.0.05

55.43

(2)

)

44.77

(1991

1.96

2 2.23 2.22 2.30

46.77 47.51 48.10 53.6 57.63

51.40

:2

			%	
60	2.5	41	2.5	
60	2	44	5	
60	1.6	49.2	10	
60 b	2.03 ab	44.73 c		
80	2.06	58.5	2.5	
80	2.6	54	5	
80	2.0	53.8	10	
80 a	2.22 ab	55.43 a		
70	2.5	52.6	2.5	
80	1.7	52.2	5	
80	2.5	49	10	
76.66 a	2.23 ab	51.36 b		
0	2.1	51.4	2.5	
0	2.1	44.5	5	
0	1.7	42.5	10	
0 c	1.96 b	46.13 c		
10	2.5	44	2.5	
0	2	45	5	
0	2.33	47	10	
3.33 c	2.27 a	45.33		
0 c	2.0 ab	49.4 b		

.0.05

.....

%3.33

%80 76.66 60

(1981 )

*Earias insulana*

(3)

%21.50

%5.50

(4)

24

:3

<b>S . D ±</b>		
2.48 ± 19.50 b	12 - 24	
0.95 ± 5.50 a	4 - 8	
4.42 ± 21.50 bc	16 - 30	
2.16 ± 12.00 ab	6 - 16	
2.87 ± 11.50 ab	4 - 18	
2.0 ± 30.00 c	22 - 42	

.05

:4

10

S . D ±		
12.55 ± 36.50 a	11 - 69	
1.10 ± 28.75 a	26 - 31	
2.90 ± 35.50 a	30 - 43	
5.17 ± 30.50a	21 - 45	
10.88 ± 34.75a	15 - 56	
2.90 ± 28.50a	23 - 36	

.0.05

*Myrtus communis*

.1991

.111

.2002

*Trogoderma granarium* Everts (Dermestidae : Coleoptera)

.2002 23-21

.1981

.117

- Anui, B. and Sharma, V.K., 1999. Relative toxicity and persistence of plant products against maize stem borer on maize. *Ann. Pl. Prot. Sci.*, Vol.7, No.2, pp.144-149.
- Bloszyk, E., Szafranski, F., Drozods, B. and Al-shameri., K., 1995. African plant as antifeedants against stored product insect pest. *J. Herbs and Medical plants*, Vol.3, No.1, pp.25-36.
- Jood, S., Kappor, A.C. and Singh, R., 1993. Evaluation of some plant products against *Trogoderma granarium* Everts in stored wheat and their effect on nutritional composition and organoleptic characteristics of treated grains. *Int. J. Pest. Man.*, Vol.39, No1, pp.93-98.
- Jood, S., Kapoor, A.C. and Singh, R., 1996. Evaluation of Some plant products against *Trogoderma granarium* Everts in Sorghum and their effect on nutritional composition and Organoleptic characteristics *J. Stored Prod. Res.*, Vol.32, pp.345-352.



- Mustafa, M.A., 1999. Growth regulating activity of chinaberry tree. *Melia azedarach* L. on the Khapra beetle, *Trogoderma granarium* Everts. Rafi. J. Sci., Vol.10, No2, pp.1-5.
- Muthukrishnan., J. and Ananthagowri, B., 1994. Botanical pesticides and energetics in the control of the semilooper *Achaea Janata* L. (Noctuidae Lepidoptera) Phytophaga., Vol.6, No.2, pp.127-131.
- Sahayaraj, K. and Paulraj, M.G., 1998. Relative toxicity of some plant extracts to groundnut leaf miner *Aproaerma modicella*. IAN., Vol.18, pp.27-29.
- SAS Institute, 1982. SAS user's Guide: statistics SAS Institute Inc Cary North Carolina page 1025. USA.
- Singh, R.P., Doharey, K.L., Pandnaja, S., Saxena., R.C., 1999. Evaluation of neem dust formulation against Khapra beetle *Trogoderma granarium* Everts and Cigarette beetle *Lasioderma sericorne* F. *Azadirachta-indica-A-Juss*, pp.67-78.
- Steel, R.G.D. and Torrie, J.H., 1980. Principle and procedures of statistics. McGraw-Hill Co. Inc., London.