

***Culex pipiens molestus* Forsakl (Culicidae: Diptera)**

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(2013/ 10/ 7 2013/ 5 /27 )

<i>Achillea fragrantissima</i> (Forssk)		<i>Juglans regia</i> L.		<i>Culex pipines molestes</i> (Forskall)
250				<i>Arnebia decumbens</i> L.
<i>A. fragrantissima</i>		48 24		%100
600			500	%100
				%100
	35 70		48 24	Lc <sub>50</sub>
		Lc <sub>50</sub>	110 145	65 110
270,350 190,260		Lc <sub>50</sub>	115,170 78,150	65,100
				310,400

*Juglans regia* *Arnebia decumbens* *Achillea fragrantissima* *Culex pipines* :

**The Bioassay Efficacy of Three Botanical Crude Extracts Against *Culex pipiens molestus* (Forskall) Immatur Stages**

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**ABSTRACT**

The bioinsecticidal properties of three plants, *Achillea fragrantissima* (Forssk) She. Bip., *Arnebia decumbens* L. and *Juglans regia* L. were tested as larvicides and pupicides on the mosquito, *Culex pipiens molestus* Forsakl. All the applied extracts caused 100% mortality for the second and last instars after 24 and 48 hr. of exposure time. Pupal mortality was 100% at the concentration, 500 ppm, of *A. fragrantissima* and 600 ppm at both *A. decumbens* and *J. regia* at the two exposure times. The Lc<sub>50</sub> values after 24 and 48 hr. of exposure times were 70 and 35 ppm for *A. fragrantissima*, 110 and 65 ppm *A. decumbens* and 145 and 110 ppm for the second instar, while Lc<sub>50</sub> for the fourth instar after the same exposure time were 100,65; 150,78 and 170,115



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*Culex pipiens molestus*

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10 : 14

%10 ± 70 2 ± 27

%10 ( 30 x 30 x 30 )  
( )

( 40 x 30 x 70 )

-2

*Arnebia decambens*

*Achillea fragrantissima*

*Juglans regia*

-3

500

50

.(2012 )

(% 96)

200

24

4

.Whatman (NO.1)

45

(Rotery Evaporator)

4

10000

Stock Solution

( Harborne, 1984)

-4

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250-200-150-100-50-10 :

.(2005) WHO

100

25

48 24

:

25

48 24

600 - 500 - 400 - 300 - 200 - 100

(1971) Finney

(P<0.05)

.Probit lines

.x

-1

*Culex pipiens molestus*

(1 )

48 24

*Arnebia decumbenns*

*Arnebia decumbenns*

150 100 50 10

*Achillea fragrantissima*

*Juglans*

250 200

250

*regia*

%100

250

(1 )

250

150

%100 - 92

150 50

48 24

24

Lc<sub>50</sub>

70

Lc<sub>50</sub>

110

( 35)

65

Lc<sub>50</sub>

48

(1 )

110

*Culex pipiens*

*Echinochloa*

Lc<sub>50</sub>

(2008) Al-Khazragi

Mustafa

(Bream *et al.*, 2010)

112 80 *stagninum*

*Culex pipiens molestus*

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معامل الانحدار		قيمة F	قيمة Lc <sub>50</sub> لفترة التعريض		القتل و نسبته بعد التعريض		التركيز (ج ف م)	المستخلص النباتي
ساعة 48	ساعة 24		ساعة 48	ساعة 24	ساعة 48	ساعة 24		
Y = -1.03571 + 0.897619X	Y = -2.53571 + 0.892857X	3.35**	65	110	0.0 ± 0.0 o (0.0)	0.0 ± 0.0 o (0.0)	الضابطة	الجلطة <i>Arnebia decambens</i>
					3.3 ± 0.6 l (13.3)	1.7 ± 0.2 mn (6.7)	10	
					6.7 ± 1.5 j (26.7)	4.7 ± 0.6 k (18.7)	50	
					11.0 ± 2.0 h (44.0)	8.3 ± 0.6 i (33.3)	100	
					18.0 ± 1.0 e (72.0)	14.7 ± 1.2 g (58.7)	150	
					23.0 ± 1.0 b (92.0)	21.7 ± 0.6 cd (86.7)	200	
					25.0 ± 0.0 a (100)	25.0 ± 0.0 a (100)	250	
Y = 3.82143 + 0.878571X	Y = 1 + 0.933333X	3.35**	35	70	0.0 ± 0.0 o (0.0)	0.0 ± 0.0 o (0.0)	الضابطة	القيصوم <i>Achellia fragrantissima</i>
					5.3 ± 1.2 k (21.3)	3.3 ± 0.6 l (13.3)	10	
					16.3 ± 1.2 f (65.3)	10.7 ± 0.6 h (42.7)	50	
					22.3 ± 0.6 bc (89.3)	18.0 ± 1.7 e (72.0)	100	
					25.0 ± 0.0 a (100)	23.0 ± 1.0 b (92.0)	150	
					25.0 ± 0.0 a (100)	25.0 ± 0.0 a (100)	200	
					25.0 ± 0.0 a (100)	25.0 ± 0.0 a (100)	250	
Y = -2 + 0.866667X	Y = -3.46429 + 0.830952X	3.35**	110	145	0.0 ± 0.0 o (0.0)	0.0 ± 0.0 o (0.0)	الضابطة	الجوز <i>Juglans regia</i>
					1.7 ± 0.6 mn (6.7)	0.7 ± 0.6 no (2.7)	10	
					5.7 ± 1.2 jk (22.7)	2.7 ± 0.6 lm (10.7)	50	
					9.7 ± 1.5 h (38.7)	6.7 ± 0.6 j (26.7)	100	
					14.7 ± 1.2 g (58.7)	10.7 ± 1.2 h (42.7)	150	
					20.3 ± 0.6 d (81.3)	17.3 ± 1.2 ef (69.2)	200	
					25.0 ± 0.0 a (100)	25.0 ± 0.6 a (100)	250	

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.Mortality

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6

-2

(2 )

Lc50

150 100 50 10

48 24

250

200

.% 100

200

48 24

Lc50

150

.(2 )

Lc50

48

78

Lc50

24

48

65

24

100

115 170

Lc50

2

48

(Functional groups)

Lc50

.( Elmann, 2011)

(Al-Mussawi, 2010 )

(2011)

48

307 52

*Solanum carolinens*

Lc50

13 7.8 14 12

*Euphorbia peplus Tilia chordate*

*Hammad salicornics*

.(2012)

24

*Culex pipiens*

:2

*molestus*

معامل الانحدار		قيمة F	قيمة LC <sub>50</sub> لفترة التعريض		القتل و نسبته بعد التعريض		التركيز (ج ف م)	المستخلص النباتي
			48 ساعة	24 ساعة	48 ساعة	24 ساعة		
48 ساعة	24 ساعة							
Y = -2.79762+0.869048X	Y = -3.89286+0.821429X	7.13 **	78	150	0.0 ± 0.0 q (0.0)	0.0 ± 0.0 q (0.0)	الضابطة	جحلة <i>Arnebia decumbens</i>
					1.3 ± 0.6 no (5.3)	0.3 ± 0.6 q (1.3)	10	
					3.3 ± 0.6 m (13.3)	1.7 ± 0.6 n (6.7)	50	
					8.3 ± 0.6 i (33.3)	5.3 ± 0.6 k (21.3)	100	
					14.7 ± 1.2 e (58.7)	11.0 ± 2.0 h (44.0)	150	
					19.0 ± 1.0 bc (76.0)	15.7 ± 1.5 d (62.7)	200	
					25.0 ± 0.0 a (100)	25.0 ± 0.0 a (100)	250	
Y = -0.535714+0.95X	Y = -1.071429+0.942857X	7.13 **	65	100	0.0 ± 0.0 q (0.0)	0.0 ± 0.0 q (0.0)	الضابطة	القيصوم <i>Achellia fragrantissima</i>
					3.0 ± 1.0 m (12.0)	1.7 ± 0.6 n (6.7)	10	
					8.3 ± 1.5 i (33.3)	6.0 ± 1.0 k (24.0)	50	
					16.3 ± 1.5 cd (65.3)	12.3 ± 1.5 g (49.3)	100	
					22.3 ± 0.6 b (89.3)	17.0 ± 0.6 c (68.0)	150	
					25.0 ± 0.0 a (100)	24.3 ± 0.6 a (97.3)	200	
					25.0 ± 0.0 a (100)	25.0 ± 0.0 a (100)	250	
Y = -3.30952+0.814286X	Y = -4.19048+0.771429X	7.13 **	115	170	0.0 ± 0.0 q (0.0)	0.0 ± 0.0 q (0.0)	الضابطة	الجوز <i>Juglans regia</i>
					0.7 ± 0.6opq (2.7)	0.3 ± 0.6 q (1.3)	10	
					2.7 ± 1.5 m (10.2)	1.0 ± 1.0 nop (4.0)	50	
					7.3 ± 1.6 j (29.4)	4.3 ± 5.6 l (17.2)	100	
					10.3 ± 1.5 h (41.3)	7.3 ± 1.6 j (29.3)	150	
					16.3 ± 0.6 cd (65.3)	13.7 ± 0.6 f (54.3)	200	
					25.0 ± 0.0 a (100)	25.0 ± 0.0 a (100)	250	

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.0.05

.Mortality

3

24

100

48 24

600 500

%100

600

%100

3

600 48

(Lc<sub>50</sub>)

350 Lc<sub>50</sub>

48 24

310 400 190 260 270

500

% 90

(2012) Zaitoun

500

*Culex pipiens molestus*

(2008) AL-Khzraji Mustafa

48 24 (3 ) Lc<sub>50</sub>

152 86 83 71 47 32 (2008) Shalaby Khater

*Culex pipiens molestus*

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معامل الانحدار		قيمة F	قيمة LC <sub>50</sub> لفترة التعريض		القتل و نسبته بعد التعريض		التركيز (ج ف م)	المستخلص النباتي
ساعة 48	ساعة 24		ساعة 48	ساعة 24	ساعة 48	ساعة 24		
Y = -1.32143+0.878571X	Y = -2.5+0.633333X	3.78**	270	350	0.0 ± 0.0 q (0.0)	0.0 ± 0.0 q (0.0)	الضابطة	الجلجلة <i>Arnebia decumbenus</i>
					1.7 ± 1.2 p (6.7)	1.0 ± 0.0 pq (4.0)	100	
					7.7 ± 0.7 kl (30.7)	5.0 ± 1.0 n (20.0)	200	
					11.0 ± 2.0 i (44.0)	8.3 ± 0.5 k (33.3)	300	
					16.3 ± 1.2 f (65.3)	13.3 ± 1.2 h (53.3)	400	
					21.3 ± 1.6 c (85.3)	18.3 ± 0.6 e (73.3)	500	
					25.0 ± 0.0 a (100)	25.0 ± 0.0 a (100)	600	
Y = 1.26190+0.909524X	Y = -0.809524+0.942857X	3.78**	190	260	0.0 ± 0.0 q (0.0)	0.0 ± 0.0 q (0.0)	الضابطة	القيصوم <i>Achellia freagrantissima</i>
					4.7 ± 0.6 n (18.7)	2.7 ± 0.6 o (10.7)	100	
					11.0 ± 2.0 i (44.0)	7.3 ± 0.6 lm (22.3)	200	
					16.0 ± 1.0 fg (64.0)	13.3 ± 1.6 h (53.3)	300	
					22.7 ± 0.6 b (90.7)	19.7 ± 0.6 d (78.7)	400	
					25.0 ± 0.0 a (100)	25.0 ± 0.0 a (100)	500	
					25.0 ± 0.0 a (100)	25.0 ± 0.0 a (100)	600	
Y = -2.17857+0.878571X	Y = -3.29762+0.807143X	3.78**	310	400	0.0 ± 0.0 q (0.0)	0.0 ± 0.0 q (0.0)	الضابطة	الجوز <i>Juglans regia</i>
					1.3 ± 0.6 p (5.3)	0.3 ± 0.6 q (1.3)	100	
					5.3 ± 1.2 n (21.3)	2.7 ± 0.6 o (10.7)	200	
					9.7 ± 0.6 j (38.7)	6.7 ± 0.6 m (26.7)	300	
					15.3 ± 0.6 g (61.2)	11.0 ± 1.0 i (44.0)	400	
					20.3 ± 0.6 d (81.3)	17.7 ± 1.2 e (70.7)	500	
					25.0 ± 0.0 a (100)	23.3 ± 0.6 b (93.3)	600	

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