



*Lucilia cuprina*

*C. tarsalis*

*Planococcus ficus*

(Whyrad *et al.*, 1994)

(Resistant Pest Manager News

Letter, 2009)

(2000) Valles *et al.*

*Reticulitermes flavipes*

(Kollar)

(Denholm *et al.*, 2002)

(GST)

MFO

(Xenobiotic)

(Ay & Gurkan,

GST

2005; Martin *et al.*, 2002; van Leeuwen *et al.*,  
2007; Paeporn *et al.*, 2004; Limoe *et al.*, 2007;  
Gunning *et al.*, 1996; Wheelock & Scott, 1992)

GST

GST

*Culex*

(Mouches *et al.*, 1990)

(Field *et al.*, 1988)

(Enayati *et al.*, 2005)

(Sequester)

(Devonshire & Moores, 1982)

(Monitoring)

(*Culex* ) B<sub>2</sub> A<sub>2</sub>

(Scott, 1995)

(Vaughan *et* B<sub>2</sub>

*al.*, 1995)

(Ay & Gurkan, 2005; Martin *et al.*, 2002; Clark, 2009; Bull & Pryor, 1992; van leeuwen *et al.*, 2007; Limoe *et al.*, 2007; Nayak *et al.*, 2002; Gunning *et al.*, 1996; Paeporn *et al.*, 2004; Wheelock & Scott, 1992)

LC<sub>50</sub>

(*Cucurbita pepo*)

*Tetranychus urticae* Koch

*Mononychellus progresivus* Doreste

LC<sub>50</sub>

| > *M. progresivus*

( )

*Amblyseius*

LC<sub>50</sub>

*Oligota minuta limonicus* Garman & McGregor

| | Cameron

(Braun *et al.*,

.1987)

LC<sub>50</sub>

LC<sub>50</sub>

(EC25%)

)

( )

(

±

( : ) :

±

( / pH )

(POLO-PC)

(Native polyacrylamide gel electrophoresis) Native PAGE

(NaH<sub>2</sub>PO<sub>4</sub> + Na<sub>2</sub>HPO<sub>4</sub>) pH (V/V) X

(1992) Kono & Tomita

/ %

g

X-100

pH

(1976) Bradford

pH /

( / )

SDS (sodium

dodecylsulfate)

(Stat fax 3200)

LC<sub>50</sub>

Van Aspern

(1962)

LC<sub>50</sub>

pH

LC<sub>50</sub> %

LC<sub>50</sub>

( LC<sub>50</sub> )

( )

LC<sub>50</sub>

(1-chloro-2, 4- CDNB

(1974) Habig *et al.*

dinitrobenzene)

(2000) Picollo *et al.* /

LC<sub>50</sub>

)

*Pediculus capitis* (Anoplura: Pediculidae)

( ) CDNB

(

... :

) % / (

) *P. capitis* / (

MFO

LD<sub>50</sub> (1999) Gunning et al. .

( )

(Topical application)

/ / *Helicoverpa armigera*

LD<sub>50</sub>

*P. humanus capitis*

/

Shimada et al. .(Audino et al., 2005)

pH LD<sub>50</sub> (2005)

pH

pH.( ) / *Spodoptera exigua*

*Boophilus microplus* LD<sub>50</sub> (2002) Pridgeon et al. .

/ Canestrini (Acari: Ixodidae)

Baker et al. .(Willadsen et al., 1987)

(1998)

*Anisopteromalus calandrae* Howard MFO

(Hymenoptera: Pteromalidae)

pH= /

4-methylumbelliferyl acetate

(4-NPA) *M. progresivus* LC<sub>50</sub>

/ pH

pH (2007) Van Leeuwen & Tirry

*T. urticae*

4-NPA *S. exigua*

*P. humanus capitis*

( ) <sup>c</sup>	(% ) <sup>b</sup>	(% ) <sup>a</sup>	LC <sub>50</sub>
( ) /	( / / ) / *	( / ) /	
( ) /	d	( / / ) /	

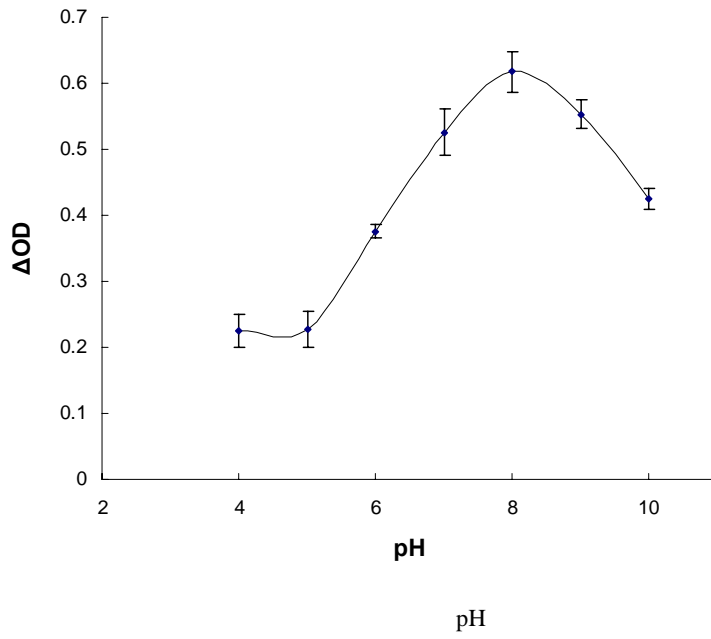
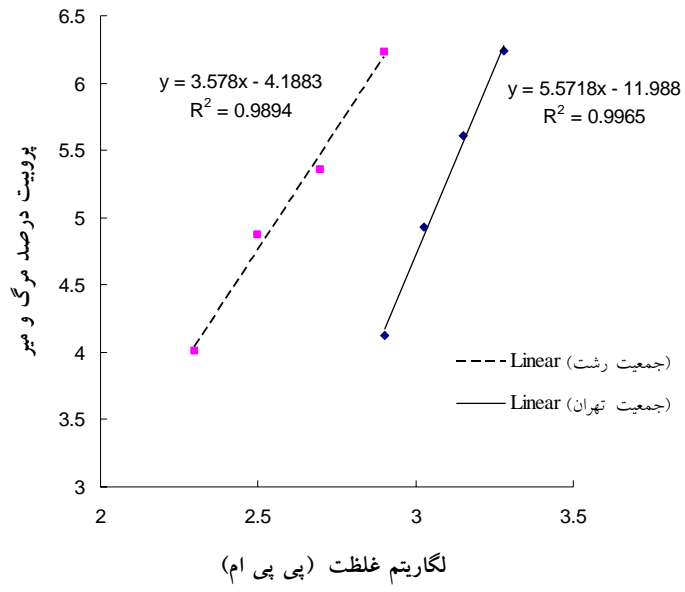
(ppm ) a

LC50 = b

x<sup>2</sup> % x<sup>2</sup> c

d

% LC50 \*



( )

/

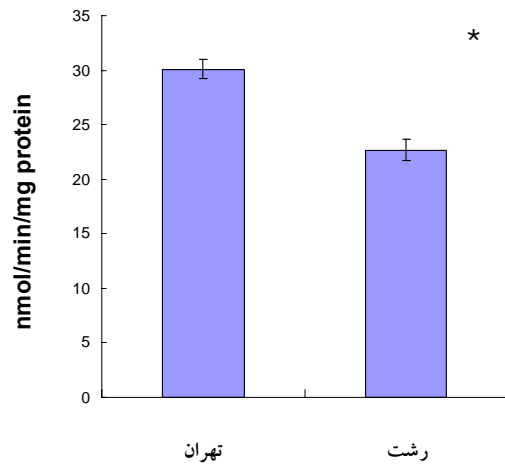
( )

( )

(1982) Devonshire & Moores .(Field *et al.*, 1988)

(<sup>14</sup>C-acid )

E<sub>4</sub>



تهران

رشت

%

\*

E<sub>4</sub>

E<sub>4</sub>

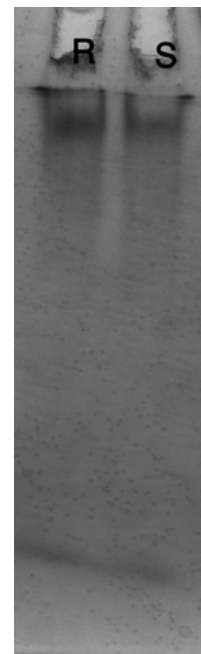
.(Devonshire & Moores, 1982)

*Culex*

.(Kono & Tomita, 1992)

(1993) Suzuki *et al.*

*H. armigera*



(S)

(R)

(Gunning *et al.*,

*Aedes aegypti*

.1996)

MFO

Baffi *et al.* .(Paeporn *et al.*, 2004)

(2005)

*B. microplus*

( )

.(Devonshire & Moores, 1982)

(Vial)

*Reticulitermes flavipes* (Kollar)

(Hoffman &

Fisher, 1994)

(Shono *et al.*, 1979)

(Bush *et al.*, 1993)

CDNB

( )

Prapanthadara *et al.* .

LC<sub>50</sub>

(2002)

(R<sup>d</sup>R<sup>p</sup>)

MFO

*A. aegypti*

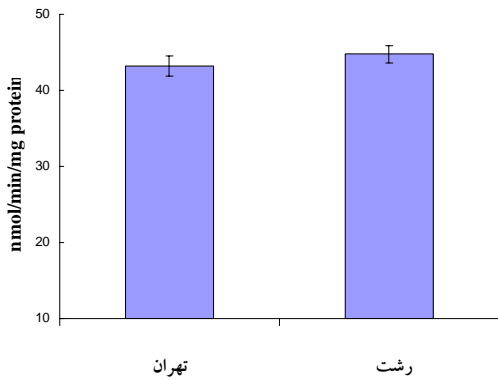
(2007) Ugurlu *et al.*

*H. armigera*

(2004) Paeporn *et al.*

MFO

*A. aegypti*



(Ay & Gurkan,

.2005; van leeuwen *et al.*, 2007)

(Tsagkarakou *et al.*,

.2009)

(2000) Valles *et al.*

(SE ± )

*Reticulitermes flavipes*

(Vial test)

(Kollar)

/

LC<sub>50</sub>

UF

LC<sub>50</sub>

ARS

/

/ ARS



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