

Trichoderma harzianum
Parlatoria blanchardi Targ.

Ommatissus lybicus Berg
Chrysopa vulgaris Schn ,

(1

(1

()

()

()

48

14

:

%40

%70

450

2012

(Mashal and Abeidat,

)

50

2007)

(*Ommatissus lybicus*

(2012

Bergevin (Lybicus): Tropicuchidae Homoptera)

(2006

)

Hussain, 1963)

Parlatoria Targ (Homoptera: Diaspididae).

(El-

(1999

(2002

)

blanchardi

()

Haidari,1982

(1

(Blow, 2006)

.munammsm@yahoo.com . - (639) .

.2013/2/25

2012/9/6

(1997

)

500

400

(2000

)

Bitaw and Ben ,1990)
 (Saad
 2007 2005
 2006 70
 (2006)
 (2011)
 1990)
 2006 1999
 (Abdul Haq and Akmal, 1972
 (Rincón and Antonio, 2004) (2007)
 (2008)
 (2012) (*Chrysopa vulgaris* Schn ,Chrysopidae:
 (2004) Neuroptera)
 (Hassan *et al.*, 1994 2004
 (Hassan and Bogenschütz, 1994) (2007 1999
 (Anon,1982)
 (yellow dimiroll trap) *Beauveria bassiana* (Balsamo)
 (2002)
 () (Kubicek and Harman,1998)
 -
 ()

(1)
 (2012/2/1 2011/11/29) (-)
 () 12 ()
 (Gharib, 1966)) ((2012) 468
 36
 .(1980 (Soderlund *et al.*, 2002)

:(1)

) (
/ 710 ×19	1000/ 2000 / 7000) 1000 ((-) <i>Trichoderma harzianum</i>	
	1000/ 2000	wp -	
	1000 7000		
%35 %40	1000/ 2000		
<u>C₂₂H₁₉Cl₂NO₃</u>	1000/ 500	EC-	

(10) 1000 (2012)
 (100 × 30)

(Hussain,1963)

14 48
%70 25

(Abdullah *et al.*, 1998)) 20× 20
(
(Abdullahand, 1998) 48

Abdul : 2012) 14 (Arnaldo, 2005)

(Haq and Akmal, 1972
(1956) Hendrson and Telton (Hassan and Bogenschütz.,1994)

5

15

(Henderson and Tilton ,1955)

$$\text{Corrected \%} = \left(1 - \frac{n \text{ in Co before treatment} * n \text{ in T after treatment}}{n \text{ in Co after treatment} * n \text{ in T before treatment}} \right) * 100$$

Where : n = Insect population , T = treated , Co = control

M- LSD0.05 05.

(Arnaldo and Torres, 2005)

Stat

Dowson, 2004) %25
) (1936:
(1983 (3) (2)

%40 20
48 (1980)

%35 %75

%40

(3) (2)

1920

(Ascher *et al.*,1982)

(2009)

(2012)

Knock and down action)

(WHO, 2009 2010)

%20 10

Ascher *et al.*,)

48

(1982

Rincón and Antonio,)

(2004

(Wolfgang, 2006)

(Rincón *et al.*,2004)

14

(Environmental Health Criteria,1989)

(František and Jitka,

TD
2006)

48

48

48

%10 2

.2012/2/1

2012/2/1

%20

(2004)

(2010)

%98

(2010)

(2009) (Mickler, 2012) *Beauveria*
Metarhizium bassiana (Balsamo)
 (1992) Paecilomyces *anisopliae*
) (1999) (Anon,1982) (Mickler, 2012)
 (2009))
 48 (1989))
 Kubicek)
 .(and Harman, 1998

: (3)

2012/2/1						2011/11/29					
48						48					
%5.98	%96.21	%20.44	%10.79	%93.78	%10.35	%0	%97.66	%8.63	%5.77	%85.65	%5.15
c	a	a	d	a	c	c	a	b	c	b	c
%10.47	%97.66	%15.65	%15.47	%94.65	%10.47	%0	%95.58	%8.74	%5.45	%91.69	%4.98
b	a	b	c	a	c	c	a	b	c	ab	c
%5.86	%10.66	%10.46	%0	%10.32	%5.84	%0	%5.78	%4.63	%4.78	%15.97	%2.54
c	c	b	e	c	d	c	d	c	c	c	c
%10.66	%90.45	%20.35	%20.55	%95.74	%20.89	%5.87	%80.97	%10.41	%10.88	%96.47	%10.69
b	b	a	b	a	b	b	b	b	b	a	b
15.14%	%91.74	%10.55	%30.38	%98.11	%40.61	%10.36	%60.12	%20.32	%20.22	%97.76	%20.21
a	b	b	a	a	a	a	c	a	a	a	a

p=.05

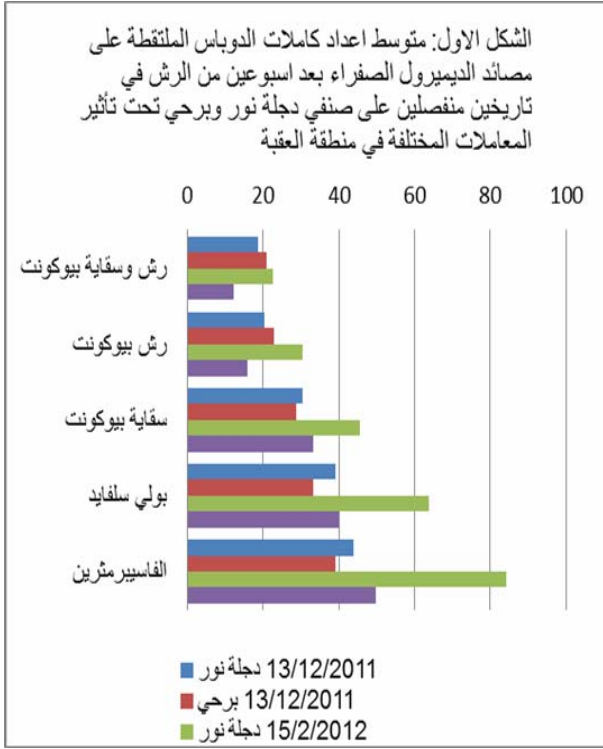
Henderson and Telton

*
**

(3) (2)

()

48



(Howard *et al.*, 2001)

(2007)

%30

Soderlund, *et* ()

(2000 *al.*, 2002)

(2008)

Soderlund,

(*et al.*, 2002)

48

(Kubicek and Harman, 1998)

(Arnaldo, 2005)

()

(Ascher *et al.*,1982).

14

(2009)
 48 %50.31 % 43.66
 %24 % 15.66
 %59.33
 %74.31

48

(Hanson *et al.* 2004)

(Shour and Crowder, 1980)

()

-
 48 7.85 5.67
 % 15.19 3.07
 % 23.04 %8.74

(Hussain, 2009)

(Ralph and 2009)

-25 %75

Berry,1998

%40
 (Soderlund, *et al.*, 2002)

(Ralph and Berry,1998 2007)
 - (4)

48 %10.76 %4.65
 %14.63 %10.01
 %25.39 %14.66

(WHO Specification and Evaluations
 for Public Health Pesticides, 2009)

:(4)

2012/2/1		2011/11/29		2012/2/1		2011/11/29		
	48		48		48		48	
%14.69 b	%7.79 b	%14.56 a	%8.31 b	%15.91 b	%5.11 b	%12.22 B	%10.76 b	
%13.46 b	%4.65 bc	%11.46 b	%6.17 b	%14.63 b	%8.78 b	%10.01 B	%10.64 b	
%0.0 d	%0.0 d	%1.61 d	%0.0 c	%0.0 d	%0.14 c	%1.01 D	%0.0 c	
%3.61 c	%5.67 bc	%5.07 c	%7.85 b	%3.07 c	%5.74 b	%5.19 C	%7.35 b	
%20.45 a	%45.49 a	%15.66 a	%50.31 a	%24.00 a	%47.37 a	%20.20 A	%43.66 a	

LSD p=.05

Henderson and Tleton

*
**

(Extension Toxicology, 2012)

48

(1984)

)

(1996

, (Soderlund *et al.*, 2000)

14

(1990)

(5)

.(Mickler, 2012)

14

(5) :

2012/2/1		2011/11/29		2012/2/1		2011/11/29	
	48		48		48		48
%100.0 a	%97.90 a	%99.08 a	%90.12 a	%99.28 a	%95.55 a	%100.0 a	%90.36 a
100.0 a	%100.00 a	%98.64 a	%94.55 a	%100.00 a	%94.10 a	%99.52 a	%92.69 a
%8.22 c	%1.25 c	%5.14 c	%2.57 c	%9.11 c	%1.51 c	%8.22 d	%1.14 c
%38.28 b	%90.39 b	%28.25 b	%89.66 b	%45.86 b	%88.88 b	%31.55 c	%80.17 b
%40.10 b	%97.76 a	%37.44 b	%96.81 a	%54.54 b	%98.12 a	%48.61 b	%95.55 a

p=.05

*

Henderson and Telton

**LSD

(Mickler, 2012)

(1991)

(Elmer, 966)

(2012)

.35
.2006 .
Ommatissus lybicus de Berg

.1999 .
Basudin 60EW
.4-1:(1)
.2000 .

.78
.2002.
.518
-
. (1)

2004
. 1984.
.340
.2004 .
.14 -1
.2012

.13-12: (6)34
2002.
Beauveria
bassiana (Balsamo) Vuillemin
Jebusea
hammerschmidti Reich
. 2-1 : 2
2007 .

.451-446: (3) 11
.1980 .

1983
.488
1999
.350
.2009 .
Chrysoperla mutata MacL
Ommatissus lybicus
.213-27:210
2011
DeBerg

.62
1989 .
688
.2004.

.488
1992 .
.440
.1997 .
.4-18
.2008 .

.6-1
. 1996
. 320
Tuta absoluta

Bergevin Berg.) : Tropicuchidae lybicus 1990 .
 Chrysopa Homoptera)
 vulgarisSchn, chrysopidae : Neuroptera. .150
 .(4)8 2009

1991

.38 " "

2012

(Ommatissus

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Field Evaluation of *Trichoderma harzianum* on Dubas Date Palm *Ommatissus lybicus* Berg. Targ. Palm Scale *Parlatoria blanchardi* and Egg Lace Wings *Chrysopa vulgaris* Schn Comparing with Other Chemicals on Date Palm

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ABSTRACT

Trichoderma harzianum (Biocont-t; Biocide) were evaluated against the Dubas date palm, palm scale and egg lace wings (foliar and irrigated applications) compared with the foliar fertilizer Polysulfide, Alpha-cypermethrin and the control (water application). Yellow dimiroll sticky traps were wrapped around trunks of all treated trees directly after treatments. Results indicated that there is a significant effect of all treatments on eggs and adults of Dubas with preferably to Alpha-cypermethrin. On the contrary, all treatments showed a significant effect on Dubas nymphs' number compared with control and irrigated Biocont-t with preferable to Alpha-cypermethrin and Polysulfide after 48 hours and to Biocont-t after two weeks, while the lowest number of Dubas adults which captured by yellow dimiroll sticky traps was by the three Biocont-t treatments. On the other hand,, Alpha-cypermethrin had a significant effect on lace wings eggs. Also, it was found that palm scale insects were significantly high affected by all treatments with preferable to Biocont-t (spraying) after two weeks.

Keywords: Biocont-t ,Alpha-cypermethrin, Polysulfide, Dubas, Palm Scale, Lace Wings, Dimiroll Sticky Trap.

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Received on 6/9/2012 and Accepted for Publication on 25/2/2013.