

Chaetocnema tibialis

Beta vulgaris L.

(Illiger)

(2) (1)

(1) (1)

Chaetocnema tibialis (Illiger)

(Vico Prognos Ramona)

.2008

(25 / 65.9)

(25 / 97.9)

(25 / 364.14 118.42)

50.99)

Vico

(25/ 116.45

Prognos Ramona

(25/ 2.96 2.01)

(/ 65.90)

(25/ 97.90)

25/ 364.14 118.42

)

()

.(

%90.69 Cypermethrin

%90.88

Cyperino

(%49.35) Nimadol

Chaetocnema tibialis

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(1)

30621 . . .

(2)

Ecological Study of Beet Flea Beetle, *Chaetocnema tibialis* (Illiger). (Chrysomelidae: Coleoptera) on Sugarbeet, *Beta vulgaris* L., and its Control.

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ABSTRACT

The seasonal activity of beet flea beetle, *Chaetocnema tibialis* (Illiger), adults was studied on sugar beet varieties at Homs Region during 2008 season.

Results obtained indicate that the beet flea beetle, *Chaetocnema tibialis* (Illiger) adults was started at the 2nd week of May to all varieties in the 1st and 2nd dates of plantation. The number tended to increase, rather gradually, from early June reaching peak (65.9 and 97.9 holes/25 leaves) for two dates.

Two peaks occurred during 2008 season, were as follows:

- The 1st peak occurred in the 4th week and the 2nd week of June (65.9 and 97.9 holes/25 leaves) for 1st and 2nd dates, respectively.
- The 2nd peak occurred in the 4th week of July (118.42 and 364.14 holes/25 leaves) for 1st and 2nd dates, respectively.

The results obtained indicate, that Vico sugarbeet variety was highest susceptible (50.99 and 116.45 holes/25 leaves) for the 1st and 2nd dates, meanwhile, Ramona and Prognos were lowest infested. The infestation started with quite low holes (2.96 holes/25 leaves) at the 3rd week of May and increased gradually at the 4th week of June with 65.90 holes/leaf, and in end of season arrived to (118.42 holes/25 leaves). The infestation percentage increased by beet flea beetle in the 2nd date (the 1st week of February) with twice of infested on the 1st date (the 1st half of January). Six pesticides were evaluated against beet flea beetle, results showed that Cyperino pesticide gave the highest effective percentage (90.88%) followed Cypermethrin by (90.69%), in comparison with Nimadol pesticide (49.35%) after two week of treatment.

Key words: Beet Flea Beetle, *Chaetocnema tibialis*; Seasonal activity; Chemical control.

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124.4 2000) 37.3 % 30 % 11
.(2007

27590 (2006 2005 2004)
1.1 1.1 1.22 26000 25999
) / 42.20 42.17 44.13
.(2006
.(FAO, 2006) / 42.10 41.15 44.5

Chaetocnema tibialis

Coleoptera

Chrysomelidae

(Stef and
.(Yildirim and Ozbec,1992)

Buzinovschi, 1982)

(Yaman and Rddek, 2003)
(Cagan *et al.*, 2000) (Keresi *et al.*, 2006)
(Slavchev,1984) (Neves, 1983)
(Baselga and Novoa, 2000a,b; 1993 *C. tibialis*
267 Baselga and Novoa, (2006) 2002)
%90 *C.tibialis* *Chaetocnema*
° 9
. .² / 27

Beta vulgaris
Chenopodium *Atriplex* spp. L., *Spinacea oleracea*
Amaranthus sp. (Kurppa, 1990) spp. L

(Ghadiri, 1992)

Amaranthus

(Cagan *et al.*, 2007)

(/)

30

280

(Kocourek *et al.*, 2002)

400

Cagan *et al.*, (2007)

Rufelts, (1993)

.(Ekbohm, 1991)
Lukashyk and Ladewig, (2008)
+)
+ (Cagan *et al.*, (2000) .
Amaranthus spp.
13 10
Alticinae
Dipelex, (2004)
(*Beauveria bassiana*) Biofly (*Bacillus thuringiensis*)
(%27.10 %28.66) (%19.1 %27.28)
1999 1998 (%38.42 %15.82)
Biofly
2000 1999 %29.65 %24.42
Keresi *et al.*, (2004)
thiamethoxam, carbofuran, fipronil, imidacloprid + pensicuron,)
Chaetocnema tibialis (carbofuran + bifenthrin
wireworms
(carbofuran + bifenthrin)

2008
485 7
.34.4 36.4

439
(Prognos Vico Ramona)

² (4×6) (15 15)
CRD
20 50

.C. tibialis -1

) / 25
(

.()

: -2

.(Carlyle and Alan, 1996)

$$DD = \frac{T_{\max} + T_{\min}}{2} - T_{base}$$

: T_{min} : T_{max} :

° 9

: T_{base}

(Baselga and Novoa, 2006)

(1)

(1)

| () | % | | | |
|--------|-------|-------|-------|------------|
| 88.55 | 81.43 | 14.66 | 28.64 | 5/21- 5/15 |
| 90.35 | 82.57 | 16.20 | 27.61 | 5/28-5/22 |
| 106.2 | 76.43 | 16.99 | 31.36 | 6/4-5/29 |
| 105.3 | 81.57 | 18.69 | 29.40 | 6/11-6/5 |
| 108.65 | 80.29 | 18.06 | 30.99 | 6/18-6/12 |
| 132.65 | 67.86 | 20.94 | 34.96 | 6/25- 6/19 |
| 130.35 | 76.86 | 21.36 | 33.89 | 7/2-6/26 |
| 126.05 | 77.43 | 20.73 | 33.29 | 7/9-7/3 |
| 129.4 | 81.71 | 21.04 | 33.93 | 7/16-7/10 |
| 132.45 | 83.14 | 22.41 | 33.43 | 7/23-7/17 |

-3

(1)

5

(Vico)

()

(Henderson and

.Tilton, 1955)

$$100 \times \frac{\frac{\times}{\times}}{\times} - 1 = \%$$

(2)

| | | % | | |
|----------|----|--------------|-------------------------------|---------------------|
| 100/ 25 | SC | / 480 | Thiacloprid | Calypso |
| 100/ 150 | EC | / 212+ / 278 | Chlorpyrifos Ethyl+Dimethoate | Sanunit |
| 100/ 125 | EC | / 600 | Diazinonn | Nimadol |
| 100/ 150 | EC | / 400 | Dimethoate | Dimethoate |
| 100/ 120 | EC | %10 | Cypermethrin | Cyperino |
| 100/ 40 | EC | %25 | Cypermethrin | Cypermethrin |

: -4

.0.05

.Genstat 3.2

:*C. tibialis*

-1

(3)

:

•

(1)

25/ 65.9

25/ 97.9

25/ 118.42

/ 364.14

25

(25/ 84.06)

0.05

(25 / 36.92)

. (L.S.D.= 26.34*)

Vico

(3)

:

•

25 / 116.45)

(25 / 50.99)

Prognos Ramona

(

25 / %28.48 31.28

Ramona

25/ 91.61

Prognos

0.05

25/ 44.12

.(L.S.D.=19.21*)

:

•

32.59 23.22

6

:

25/

25 / 154.31 79.63

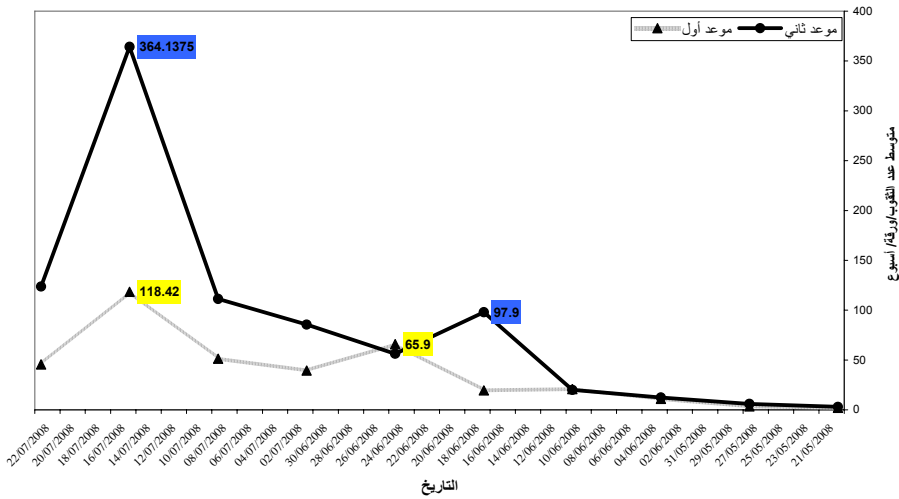
:

2008

25 /

(3)

| (15) | | | | (15) | | | | |
|--------------|--------|------------------|--------|----------------|--------------|--------|-------|-----|
| Prognos | Vico | Ramona | | Prognos | Vico | Ramona | | |
| 2.96 | 2.91 | 3.55 | 2.43 | 2.01 | 1.90 | 1.77 | 2.36 | -21 |
| 5.97 | 6.29 | 6.56 | 5.05 | 3.55 | 2.95 | 5.11 | 2.58 | -28 |
| 12.37 | 12.90 | 13.33 | 10.88 | 11.18 | 5.70 | 11.03 | 16.82 | -04 |
| 20.10 | 21.06 | 26.19 | 13.05 | 20.89 | 16.08 | 30.15 | 16.45 | -11 |
| 97.90 | 91.20 | 102.18 | 100.32 | 19.54 | 11.77 | 25.58 | 21.28 | -18 |
| 56.24 | 53.75 | 65.18 | 49.79 | 65.90 | 59.52 | 70 | 68.18 | -25 |
| 85.50 | 120.45 | 96.04 | 40.02 | 39.47 | 51.32 | 31.58 | 35.51 | -02 |
| 111.35 | 133.55 | 137.27 | 63.24 | 51.31 | 44.32 | 58.55 | 51.05 | -09 |
| 364.14 | 382.34 | 597.76 | 112.31 | 118.42 | 62.77 | 225.18 | 67.31 | -16 |
| 84.06 | 91.61 | 116.45 | 44.12 | 36.92 | 28.48 | 50.99 | 31.28 | |
| 84.06 | | | | | 36.92 | | | |
| LSD 0.05 = | | LSD 0.05 = 19.21 | | LSD 0.05=16.33 | | | | |
| | | 26.34 | | | | | | |



(1)

.2008

C. tibialis

-2

) (4)

(

.2008

:

-1-2

(4)

0.70

.° 32

° 19

0.67

.° 9

:

-2-2

)

.%78

(4

(4)

.2008

| | | | | | |
|----------|-----------|----------|----------|----------------|--|
| | | | | | |
| 0.667 | -0.021 | 0.536 | 0.698 | r | |
| 0.445 | 0.000 | 0.287 | 0.487 | r ² | |
| 2.532* | -0.061 ns | 1.794 ns | 2.757* | t | |
| 0.534 | 0.148 | 0.576 | 0.592 | r | |
| 0.285 | 0.022 | 0.331 | 0.350 | r ² | |
| 1.786 ns | 0.424 ns | 1.990 ns | 2.077 ns | t | |

Ghadiri, (1992)

Cagan *et al.*, (2007)

(Rufelts, 1993)

° 30

° 400

280

(Kocourek *et al.*, 2002)

-3

C. tibialis

Sanunit Calypso)

(5)

(Cypermethrin Cyperino Dimethoate Nimadol

C. tibialis

%78
0.05

Nimadol

%57.25

Cyperino

(L.S.D= 36.80)

%90.69 90.88

%81.62 Calypso

Cypermethrin Cyperino

%69.60 Dimethoate %69.97 Sanunit

(L.S.D=26.03)

0.05

(%49.35)

Nimadol

.0.05

Calypso Cypermethrin Cyperino

%65.08 87.99 88.51

Calypso Cyperino Cypermethrin

%25.60 43.79 Sanunit Dimethoate 0.05

%6.50

Nimadol

Cyperino :
 Calypso %79.52 85.62 Cypermethrin
 %51.34 Sanunit %60.09 71.72 Dimethoate
 .%37.70 Nimadol

(%) (5)

.2008

| | 3 | 2 | | |
|------------------------------|------------------------------|-----------------------------|-----------------------------|---------------------|
| 71.72 b | 65.08 a,b | 81.62 a | 68.46 a | Calypso |
| 51.34 c | 25.60 c,d | 69.97 a,b | 58.45 a | Sanunit |
| 37.70 d | 6.50 d | 49.35 b | 57.25 a | Nimadol |
| 60.09 c | 43.79 b,c | 69.60 a,b | 66.88 a | Dimethoate |
| 85.62 a | 87.99 a | 90.88 a | 78.00 a | Cyperino |
| 79.52 a,b | 88.51 a | 90.69 a | 59.35 a | Cypermethrin |
| L.S.D _{0.05} =11.22 | L.S.D _{0.05} =14.32 | L.S.D _{0.05} =8.45 | L.S.D _{0.05} =9.80 | |

Cypermethrin

(Diazinon:) Nimadol
 %37

Lukashyk and Ladewig, 2008;)

(Keresi *et al.*, 2004
 (carbofuran + bifenthrin)

15

15)

(Ghadiri, 1992)

(

(Cagan *et al.*, 2000)

)

(

Ramona

Vico

.Prognos

Cypermethrin

Nimadol

Cyperino

%85.62

.%37

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